

The Book of Mormon in Mesoamerica

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Horses



"The governor then gave the signal to Candia, who began to fire off the guns. At the same time the trumpets were sounded, and the armored Spanish troops, both cavalry and infantry, sallied forth out of their hiding places straight into the mass of unarmed Indians crowding the square, giving the Spanish battle cry, 'Santiago!' We had placed rattles on the horses to terrify the Indians. The booming of the guns, the blowing of the trumpets, and the rattles on the horses threw the Indians into panicked confusion. The Spaniards fell upon them and began to cut them to pieces. The Indians were so filled with fear that they climbed on top of one another, formed mounds, and suffocated each other. Since they were unarmed, they were attacked without danger to any Christian. The calvary rode them down, killing and wounding, and following in pursuit. The infantry made so good an assault on those that remained that in a short time most of them were put to the sword...

The panic-stricken Indians remaining in the square, terrified at the firing of the guns and at the horses – something they had never seen – tried to flee from the square by knocking down a stretch of wall and running out onto the plain outside. Our calvary jumped the broken wall and charged into the plain, shouting, 'Chase those with the fancy clothes! Don't let any escape! Spear them!'"eyewitness account from [Guns, Germs, and Steel](#) page 73

One of the more obvious anachronisms contained in the Book of Mormon is the presence of horses. There are many other anachronistic plants and animals present in the Book of Mormon, such as wheat, cattle, ox, sheep, elephant and the ass. I consider the horse the most interesting of these anachronisms, due to the impact of the horse on societies that actually possess them.

For reference, the following are the horse verses from the Book of Mormon that pertain to the Americas.

1 Ne. 18:25 And it came to pass that we did find upon the land of promise, as we journeyed in the wilderness, that there were beasts in the forests of every kind, both the cow and the ox, and the ass and the horse, and the goat and the wild goat, and all manner of wild animals, which were for the use of men. And we did find all manner of ore, both of gold, and of silver, and of copper.

Enos 1:21 And it came to pass that the people of Nephi did till the land, and raise all manner of grain, and of fruit, and flocks of herds, and flocks of all manner of cattle of every kind, and goats, and wild goats, and also many horses.

Alma 18:9 And they said unto him: Behold, he is feeding thy horses. Now the king had commanded his servants, previous to the time of the watering of their flocks, that they should prepare his horses and chariots, and conduct him forth to the land of Nephi; for there had been a great feast appointed at the land of Nephi, by the father of Lamoni, who was king over all the land.

Alma 18:10 Now when king Lamoni heard that Ammon was preparing his horses and his chariots he was more astonished, because of the faithfulness of Ammon, saying: Surely there has not been any servant among all my servants that has been so faithful as this man; for even he doth remember all my commandments to execute them.

Alma 18:12 And it came to pass that when Ammon had made ready the horses and the chariots for the king and his servants, he went in unto the king, and he saw that the countenance of the king was changed; therefore he was about to return out of his presence.

Alma 20:6 Now when Lamoni had heard this he caused that his servants should make ready his horses and his chariots.

3 Ne. 3:22 And it came to pass in the seventeenth year, in the latter end of the year, the proclamation of Lachoneus had gone forth throughout all the face of the land, and they had taken their horses, and their chariots, and their cattle, and all their flocks, and their herds, and their grain, and all their substance, and did march forth by thousands and by tens of thousands, until they had all gone forth to the place which had been appointed that they should gather themselves together, to defend themselves against their enemies.

3 Ne. 4:4 Therefore, there was no chance for the robbers to plunder and to obtain food, save it were to come up in open battle against the Nephites; and the Nephites being in one body, and having so great a number, and having reserved for themselves provisions, and horses and cattle, and flocks of every kind, that they might subsist for the space of seven years, in the which time they did hope to destroy the robbers from off the face of the land; and thus the eighteenth year did pass away.

3 Ne. 6:1 And now it came to pass that the people of the Nephites did all return to their own lands in the twenty and sixth year, every man, with his family, his flocks and his herds, his horses and his cattle, and all things whatsoever did belong unto them.

3 Ne. 21:14 Yea, wo be unto the Gentiles except they repent; for it shall come to pass in that day, saith the Father, that I will cut off thy horses out of the midst of thee, and I will destroy thy chariots;

Ether 9:19 And they also had horses, and asses, and there were elephants and cureloms and cumoms; all of which were useful unto man, and more especially the elephants and cureloms and cumoms.

Picture

Book of Mormon scholars concede that there is no evidence of the existence of the horse in the New World during the specified Book of Mormon time period, although some hint at some future supporting evidence yet to appear, or the possible development of dated references.

Given the fact that schoolchildren in the United States have long been taught that the Europeans introduced horses to the New World, it seems surprising that so many believing LDS read these passages in the Book of Mormon without protest or question. In my opinion, this is likely due to the fact that human beings rely on a different part of their brain in religious contexts than they do in other non-religious contexts. It just doesn't "connect". Moreover, this flaw did not "connect" with other nineteenth century authors, either. Solomon Spalding, in [Manuscript Story](#), mentions horses in connection with the inhabitants of the New World.

"Corn, wheat, beans, squashes, & carrots they raised in great abundance. The ground was plowed by horses & generally made very mellow for the reception of the seed." (chapter V)

"As the whole of this parade indicates no flight of Elseon & Lamesa, we might now view them, with their select company of friends setting out on a short journey. All mounted on horses, they rode about twenty miles to a village where they halted. An elegant supper was provided. They were cheerful & sociable, none appeared more so than Elseon & Lamesa. The next day Elseon requested the company of his dear cousins a short distance on his journey. When they had rode about two miles they halted & proposed to take their leave of each other. Lamesa & her friend without being perceived by the company rode on. It was a place where the road turned & by riding one rod they could not be seen. The rest of the company entered into a short conversation & passed invitations for reciprocal visits & friendly office. They then clasped each others hands, & bowing very low took an affectionate farewell. But where are Lamesa & her friend? During these ceremonies their horses moved with uncommon swiftness, her heart palpitates with an apprehension that she might be overtaken by her brother. But now a friend more dear, her beloved Elseon, with his companions, outstrip the wind in their speed, & within one hour & half they overtake these fearful damsels. They all precipitate their course casting their eyes back every moment to her pursuers." (chapter XI)

Part of the difficulty is that the fact that the Native Americans soon adopted and adapted their entire culture to the horse, once it was, in fact, introduced by the Europeans. The Indian and his horse is so embedded in our conceptions of Indians that it is a challenge to extricate the two.

Diamond emphasizes this fact, on page 75.

"The sole Native Americans able to resist European conquest for many centuries were those tribes that reduced the military disparity by acquiring and mastering both horses and guns. To the average white American, the word "Indian" conjures up an image of a mounted Plains Indian brandishing a rifle, like the Sioux warriors who annihilated General George Custer's US Army battalion at the famous battle of the Little Big Horn in 1876. We easily forget that horses and rifles were originally unknown to Native Americans. They were brought by Europeans and proceeded to transform the societies of Indian tribes that acquired them. Thanks to their mastery of horses and rifles, the Plains Indians of North America, the Araucanian Indians of southern Chile, and the Pampas Indians of Argentina fought off invading whites longer than did any other Native Americans, succumbing only to massive army operations by white governments in the 1870s and 1880s."

Despite the firm modern association of the horse to the Native American, it is universally accepted among mainstream archaeologists, anthropologists, and

historians that there is no evidence of the existence of a pre-Columbian horse, excepting the long-extinct species. How have they arrived at this conclusion?

There are several ways that scientists can fairly accurately ascertain the existence of past animals. The easiest method is, of course, through fossilized remains and bone remnants. Horses are one of the best candidates. From [Horses Through Time](#), published by the Carnegie Museum of Natural History, edited by Sandra L. Olsen, page 13:

"Among mammals horses are classified with the ungulates, the great group of large-bodied herbivores (plant eaters). Other living ungulates include the rhinoceroses, camels, deer, antelope, cattle, elephants, and manatees. The combination of ungulates' large, sturdy bones and teeth and their great abundance in most faunas leads to their having an excellent and relatively complete fossil record. The horse family, Equidae, is no exception to this generalization. Many tens of thousands of specimens of equid fossils have been discovered in North America, Eurasia, Africa, and to a lesser degree, South America. These range from very rare complete skeletons to isolated bones and teeth, the most common finds.

Paleontologists have been analyzing the equid fossil record for well over 150 years, continually making new discoveries, describing new species, reinterpreting old data, and in general learning more about the evolution, anatomy, and ecology of this group. For example, paleontologists named an average of three new species of horses between 1973 and 1987. Many paleontologic interpretations are controversial, with contending or alternative hypotheses and theories held by different specialists. As new specimens are found and more data accumulate, some of these ideas are proven unlikely, whereas others are corroborated or totally new hypotheses are proposed. By this method paleontologists progressively gain greater understanding of the evolutionary history of the horse, as well as other organisms.

The fossil record of the horse has an important role in the history of science, in particular the study of biologic evolution. In the late 1800s horses became the first group of mammals that paleontologists could place in a reasonably plausible sequence of ancestors and descendants from a living species back to the beginning of the Age of Mammals, 65 million years ago. Although we now know this sequence was grossly oversimplified, incomplete, and in places simply wrong, it was still an important achievement for the time. With the wide availability of fossil specimens, most natural history museums had the resources to display an exhibit on the evolution of the horse and scores of biology and geology textbooks used the horse as an example for an evolutionary sequence."

Using such fossils, scientists have, indeed, constructed a timeline for the existence of and subsequent extinction of the horse species in the American continent. From the same text:

"Without getting into details, which are murky to begin with, starting in the very late Pliocene, about 2.5 million years ago, most North American fossil faunas contained two to four species of Equus. Often there was a small, pony-sized type coexisting with a larger form, both with relatively stout limbs. An additional, very slender-legged, usually medium-sized species probably related to the Asiatic asses was occasionally present as well, especially in the early and middle Pleistocene. There are more Pleistocene fossil localities than from any other age, because this period is the most recent, and Equus is common in almost every locality that contains large mammals. This situation continued until near the end of the Pleistocene, about 11,000 years ago, when many North American mammals became extinct over a short period of time. Victims of this mass extinction event included mammoths, mastodons, ground sloths, camels, tapirs, and horses among the large herbivores as well as the large carnivores that preyed upon them, such as lions, saber-toothed cats, and dire wolves. There is an ongoing controversy as to the immediate cause of this event, with rapid climatic and ensuing vegetational change, and overhunting by humans being the two opposing views. In either case the 57-million-year history of the horse in North America came to an end, at least until the introduction of domesticated horses and donkeys by European explorers and colonists.

North American Equus also dispersed to other continents. It first appeared in South America in the middle Pleistocene and successfully spread throughout the continent. There it coexisted with Hippidion and Onhippidium until the end of the Pleistocene. Then, as in North America, all South American horses became extinct." (page 31)

Admittedly some climates are more conducive to the preservation of animal bones than others. Mesoamerica, while not the best climate for such preservation, does, indeed, offer many examples of other animal bones. In fact, there is an abundance of animal bones in Mesoamerica, even from the Pleistocene era. The following are just a few of many references to excavated bones in Mesoamerica.

"Somewhat less equivocal evidence from Tlapacoya relates to a later tradition, resembling more closely that of early Valsequillo. The Tlapacoya data result from eight seasons of interdisciplinary fieldwork carried about between 1965 and 1973 under the principal direction of J. L. Lorenzo and L. Mirambell. In addition to the artifactual remains reported from the excavations, analyses of the local geology, limnology, pollen, and fauna were included in their study. A suite of radiocarbon dates was obtained, seventeen of which fall between 33,000 and 14,000 years b.p. The investigators accept as representative a determination of 21,700 +/- 500 years b.p. on carbon and soil from a circular hearth, about 1.15 meters in diameter, within and adjacent to which were found stone tools and abundant animal bones, many from now extinct Pleistocene mammals. Two other cooking areas, one radiocarbon dated at 24,000 +/- 4000 years b.p., provide addition evidence for what appears to be a series of temporary campsites along the ancient Chalco lakeshore."

The Cambridge History of the Native Peoples of the Americas: Volume 2, Mesoamerica, Part 1, by Richard E Adams, page 43.

The same book also discusses animal bones found of Teotihuacan date that included rabbit, hare, and deer bones. (page 91) Also, on page 222, the author demonstrates that scarcity of animal bones is evidence that animals did not play a large part in the diet of the particular group, rather than evidence that the climate would not allow preservation of such bones, as is sometimes claimed by certain Book of Mormon scholars.

Sometimes animal bones are not simply part of household refuse, but are rather evidence of religious rituals such as sacrifice. In [Ancient Maya Commoners](#), edited by Jon C. Lohse and Fred Valdez, Jr. Marilyn A. Masson and Carlos Peraza Lope's essay Commoners in Postclassic Maya Society: Social Versus Economic Class Constructs, page 206, we read:

"The inventory of elite residential structure I is otherwise quite similar to all other domestic zones tested on the island and shore, with the exception of marine shell debris, which is more abundant than at other contexts. The limited distributions of ritual artifacts (including sacrificed animal remains) and shrine structures distinguish a potential social class of elites at Laguna de On from other family groups."



Decorated
Bone

While, at times, Book of Mormon scholars claim that the damp Mesoamerican climate and the acidic soil explain why there could have been horses who left no remains, (see "Horses in the Book of Mormon", a FARMS report), this does not stop them from attempting to locate such evidence, nonetheless. John Sorenson offered a controversial reference for such remains, which was then analyzed in [The Quest for Gold Plates](#), by Stan Larson, page 190:

"Sorenson, in an effort to support his position that the horse might have survived into Book of Mormon times, stated the following:

Pleistocene fauna could not have survived as late as 2000 BC. Dr. Ripley Bullen thought horses could have lasted until 3000 BC in Florida, and JJ Hester granted a possible 4000 BC survival date.

*Let us examine Sorenson's three assertions. (1) Paul S. Martin, professor of geosciences at the University of Arizona, was quoted out of context, for after expressing the theoretical possibility that Sorenson referred to, Martin then made the following strong statement: "But in the past two decades concordant stratigraphic, palynological [relating to the study of pollen], archaeological, and radiocarbon evidence to demonstrate beyond doubt the post-glacial survival of an extinct large mammal has been confined to extinct species of Bison." (2) Ripley Bullen spoke in general of the extinction of mammals in Florida and not specifically of the horse as Sorenson asserted. (3) James J. Hester, professor of anthropology at the University of Colorado, did not suggest that the horse survived until 4000 BC, but rather used a date more than two thousand years earlier. Hester's date of 8240 years before the present (with a variance of +/- 960 years) was published in 1967, but the validity of the radiocarbon dating for these horse remains at Whitewater Draw, Arizona, has been questioned. The next youngest horse of 10,370 +/- 350 years ago has a better quality of material being dated and stronger association between the material actually being tested and the extinct genus. Clearly, Sorenson's three arguments for a late survival of the horse do not hold up under scrutiny. Certain now extinct species may have survived in particular areas after the Ice Age. For example, one scholar recently stated that "in one locality in Alberta, *Equus conversidens* [a short-legged, small horse] may have been in existence about 8,000 BP (Before Present). While there may have been small "pockets" of horses surviving after the Late Pleistocene extinctions, the time period for such survivals would still be long before the earliest Jaredites of the Book of Mormon.*

John W. Welch, professor of law at BYU, referred to the find in Mayapan or horse remains which were "considered by the zoologist studying them to be pre-Columbian." Examination of Welch's citation reveals that he misinterpreted the evidence, which does not date to pre-Columbian times (and hence potentially to the BoM period) but rather to prehistoric Pleistocene times. This find at Cenote Ch'en Mul consists of one complete horse tooth and fragments of three others, which were found six feet below the surface in black earth and were "heavily mineralized (fossilized), unlike any other material in the collections." Thousands of bones and teeth were examined at Mayapan, which is a Late Post Classic site established in the thirteenth century AD, but these four horse teeth were the only ones fossilized. The reporting scholar did not suggest that the Maya people had ever seen a pre-Columbian horse, but that in Pleistocene times horses lived in Yucatan, and that "the tooth fragments reported here could have been transported in fossil condition by the Maya as curiosities. Thus, Welch's assertion about pre-Columbian horses must be corrected to refer to ancient Pleistocene horses, since these fossilized horse teeth at Mayapan date to thousands of years before the Jaredites." (p. 190-191)

The Alberta remains' dating has been corrected. The following information is obtained from an abstract for an article called "New Radiocarbon Dates for Columbian Mammoth and Mexican horse from Southern Alberta and the Late Glacial Regional Fauna":

*"New radiocarbon dates on Columbian mammoth (*Mammuthus columbi*) and Mexican horse (*Equus conversidens*) specimens from southern Alberta are 10,930±100 BP and 10,870±45 years BP, respectively—older than originally thought. These specimens are reviewed in the light of 10 other sites in southern Alberta that have yielded large mammal remains radiocarbon dated to about 11,000 BP. Thus, the regional fauna includes at least 11 mammalian species. This fauna was not restricted to the foothills, but extended well onto the plains and may prove useful in correlating foothills terraces with those of the plains."*

The article most often cited to support Sorenson's assertion is a 1956 article from the Museum of Comparative Zoology by Clayton C. Ray. This article cannot be accessed online, but Chris Smith obtained and scanned it.

*"The remains of horses have been reported from cave deposits in the state of Yucatan, Mexico, on two previous occasions. Mercer (THE HILL CAVES OF YUCATAN, LIPPINCOTT, PHILA., 1896, p. 1972 and map opposite title page) found horse remains in three caves in the Serrania, a low range of limestone hills lying in southwestern Yucatan and trending roughly parallel to the southwest border of that state. The horse material was associated with pot sherds and other artifacts and showed no evidence of fossilization. Cope (in Mercer op. cit. p. 172, footnote) examined the material and considered it referable to *Equus occidentalis* on morphological characteristics but noted absence of fossilization.*

*Hatt records numerous fragments of *Equus ?conservidens* from Actun Lara, one of Mercer's caves, (1953, Cranbrook Inst. Sci., Bull. 33, pp. 71-72 and map 2). These remains were tentatively referred to *Equus tau* by R. A. Stirton (in Hatt, p. 71). Hibbard regards *E. tau* as probably synonymous with *E. conservidens* (1955, Contrib., Mus. Paleo. Univ. Mich., 12:61). Although the teeth and bones were in many cases heavily encased in lime, pottery occurred throughout the deposits and two foot bones present in the upper layer of two layers in which horse remains occurred were identified as those of domestic cattle.*

It is now possible to report horse remains of probably pre-Columbian age from a new locality in Yucatan. This material consists of one complete upper molar and 3 fragmentary lower molars, all preserved in the Museum of Comparative Zoology (Cat. No 3937). The teeth constitute a part of a large collection of vertebrate remains obtained by archaeologists of the Carnegie Institution of Washington during excavation at the Mayan ruins of Mayapan, Yucatan (20,38N,89,28W). This collection was submitted to the author for identification, and a checklist of the material is in preparation. The horse teeth were collected in cenote Ch'en Mul (Section Q, topographic map of the ruins of Mayapan, Jones, Carnegie Inst. Washington, Dept. Archaeology, Current Rept. 1, 1952) from the bottom stratum in a sequence of unconsolidated earth almost 2 meters in thickness. As in the deposits reported by Mercer and Hatt, pottery occurs throughout the stratigraphic section. The horse teeth are not specifically identifiable. They are considered to be pre-Columbian on the basis of depth of burial and degree of mineralization. Such mineralization was observed in no other bone or tooth in the collection although thousands were examined, some of which were found in close proximity to the horse teeth.

It is by no means implied that pre-Columbian horses were known to the Mayans, but it seems likely that horses were present on the Yucatan Peninsula in pre-Mayan time. The tooth fragments reported here could have been transported in fossil condition as curios by the Mayans, but the more numerous horse remains reported by Hatt and Mercer (if truly pre-Columbian) could scarcely be explained in this manner." CLAYTON C. RAY, Museum of Comparative Zoology, Cambridge, Mass. Received May 28, 1956).

Additional information is available to evaluate these original dated findings. The book "Ice Age Faunas of North America" has certain pages available on a google book search, and several of these pages address this event.

" Henry C. Mercer (1896), who explored the cave and dug 2 pits in Chamber 3 in 1895, found similar ceramic and nonceramic layers. His attempt to locate preceramic artifacts with extinct fauna in association with Loltun or other nearby caves was unsuccessful. Some skeletal remains dubiously identified as *Ursus* (bear) were found in Loltun in a ceramic layer. Mercer reported the presence of *Equus* (horse) teeth and bones on the surface of three different caves. Although similar to the extinct horse *Equus Occidentalis*, the remains were identified as modern horse. Cope (1896) studied the remains of other animals collected by Mercer in Loltun, including species of opossums, bats, rabbit, mice, peccary, and deer of two sizes." (page 263)

The same text also addresses the Hatt findings.

" The most extensive study of the region was undertaken by Mr. and Mrs. Robert T. Hatt, who in 1929 and 1947 explored fourteen "cenotes" and dug in nine of them. (Hatt et al 1953). Two cenotes near Loltun contained the remains of extinct animals. Pleistocene *Equus conversidens* was recovered from Actun Lara. Actun Spukil produced a left tympanic ring and a molar fragment from the ground sloth, *Paramylodon*. In all, Hatt et al. (1953) collected forty-five species of mammals, of which six had been introduced by the Spaniards.

The Hatts collected only on the surface and in the top 10 cm of sediments in Chamber 3 in Loltun Cave (Hatt et al. 1953). Although further excavations were not pursued, the Hatts did recover twenty four mammal species, five of which were introduced (*Mus Musculus*, *Canis familiaris*, *Equus axinus*, *Capra Hircus*, and *Bos Taurus*). Native species represented two marsupials, one insectivore, four bats, one lagomorph, nine rodents, one carnivore, and one artiodactyls (Table 10.1). Hatt et al. (1953) indicated in their final report that the Loltun Cave was the most promising archaeological site for obtaining clues to the cultural and faunal changes since the end of the Pleistocene." (page 263)

This reference clarifies that the horse remains were from the Pleistocene Era, which ends around 11,550 years before present.

A summary of the animal remains in the Loltun Cave was also provided.

"The time range represented is from over 28,400 yr BP. Not all taxa are found throughout this long period, but they can be divided into three main groups (Table 10.3). Group 1 (Holocene and Pleistocene) is formed by those species that occur through most of the stratigraphic sequence, accounting for more than half of the identified of the identified species (n = 39, 57.3 percent). Group 2 (n = 18 species, 26.5 percent) is composed of those species found only in the Holocene sediments. Species that occurred only in the Pleistocene strata constitute Group 3.

Table 10.3 Mammal Species from Loltun Cave Divided According to Their Temporal Record in the Excavation.

Group 1- Holocene and Pleistocene

Didelphis marsupialis, *Marmosa canescens*, *M. Mexicana*, *Cryptotis*, *Cryptotis mayensis*, *Peroptryx macrotis*, *Pteronotus parnellii*, *Mormoops megalophylla*, *Chrotopterus auritus*, *Glossophaga soricina*, *Stumira lilium*, *Artibeus jamaicensis*, *hiderma villosum*, *Desmodus rotundus*, *Diphylla ecaudata*, *Eptesicus furinalis*, *Lasiurus ega I. Intermedius*, *Nyctinomops laticaudatus*, *Herpailurus yagouaroundi*, *Leopardus pardalis*, *L. wiedii*, *Puma concolor*, *Panthera onca*, *Conepatus semistriatus*, *Spilogale putorius*, *Nasua narica*, *Mazama sp*, *Odocoileus virginianus*, *Pecari tajacu*, *Sciurus deppei*, *S. yucatanensis*, *Orthogeomys hispidus*, *Heteromys gaumeri*, *Oryzomys couesi*, *Otodylomys phyllotis*, *Peromyscus leucopus*, *P. yucatanicus*, *Sigmodon hispidus*, *Sylvilagus floridanus*.

Group 2 – Holocene Only

Philander opossum, *Pteronotus davyi*, *Carollia brevicauda*, *Centurio senex*, *Natalus stramineus*, *Myotis keaysi*, *Eumops bonariensis*, *E. underwoodi*, *Promops centralis*, *Molossus rufus*, *Dasyopus novemcinctus*, *Canis familiaris*, *Urocyon cinereoargenteus*, *Bassariscus sumichrasti*, *Procyon lotor*, *Mustela frenata*, *Coendou mexicanus*, *agouti paca*

Group 3 – Pleistocene Only

Marmosa lorenzoi, *desmodus cf. D draculae*, *Canis dirus*, *C. latrans*, *C. lupus*, *mephitis sp*, *Cuvieronius sp*, *Equus Conversidens*, *Bison sp*, *Hemiauchenia sp*, *Sylvilagus brasiliensis*" page 267

Note that *Equus Conversidens* is listed as ONLY Pleistocene. The *Bison* reference is to a now extinct species that was extant during the Pleistocene era.

This is likely what Mercer originally thought were "cattle" bones.

Now, where were the Pleistocene animal remains found? The next citation makes it very clear:

"The Pleistocene mammal fauna from Loltun Cave consist of those remains from the bottom of Level VII downward and is represented by fifty species (Groups 1 and 3) in forty genera, twenty-three families, and nine orders. This variety is one of the largest from the late Pleistocene of Mexico (Arroyo-Cabrales et al, in press; Kurten and Anderson 1981). Furthermore, it is the most diverse fossil mammal fauna for the Neotropical region of North and Central America (Fernasquia-Villafranca 1978; Webb and Perrigo 1984)."
page 268

There was only one citation that made the dating of the horse bones seem questionable, and it certainly wasn't placing them up in level V. This citation does not contradict the previous one, because we already know the scientists say that the demarcation between the Pleistocene era and the Holocene era could be in the bottom of Level VII. This would be around 9,500 BC.

"To date, a comprehensive publication on the site has not been produced; however, several studies have reported on some of the important findings from the excavations by INAH. These findings include layers with ceramics and lithics, and layers with only lithics in association with extinct animals. These ceramic lithic layers are important for assessing the purpose and lifestyle of the first human beings that occupied the Yucatan Peninsula. Other studies cover lithic morphology and typology (Konicieczna 1981), and biological remains, such as mammal bones (Alvarez and Polaco 1972; Alvarez and Arroyo-Cabrales 1990; Arroyo-Cabrales and Alvarez 1990), mollusk shells (Alvarez and Polaco 1972), and plants (Montufar 1987; Xelhuanzi-Lopex 1986).

It is clear that Loltun Cave is an important site because of the presence of lithic tools and Pleistocene fauna, though doubts still exist about the stratigraphic and temporal associations. The presence of Pleistocene Equus conversidens in ceramic layers has been interpreted as possible proof of the survival of the extinct horse into the Holocene (Schdmit 1988)."
page 264

Level VII is a ceramic level, and we already know that the animals were at the bottom of Level VII. There is uncertainty as to whether the demarcation between the Pleistocene and Holocene eras would be in Level VIII or at the bottom of Level VII. The rest of the citations in this book accept the placement of the demarcation in Level VII.

Now could this be evidence of the horse in the BoM time period? Nonsense. This is like Sorenson's earlier statement that supposedly finding pockets of extinct animals surviving into 8,000 BC would constitute evidence for the BoM. We are still talking about many thousands of years prior to the BoM time period.

Yet another citation refers to this particular find. The following is obtained from the text "The Cambridge History of the Native Peoples of North America", page 62, which is available from a google book search:

"Currently, only one site in Mesoamerica supports the hypothesis of human occupation in lowland environments before 12,000 years ago. In the Puuc Hills of northern Yucatan, the lowest levels of excavations reported by R. Velazquez at Loltun Cave have produced some crude stone and bone tools along with the remains of horse, mastodon, and other now extinct Pleistocene animals. Felines, deer, and numerous rodents round out the archaeological assemblage. No radiocarbon dates have been forthcoming for this proposed early components that underlies later ceramic occupations. On the basis of stone tool typology and faunal association, MacNeish has proposed that the lower levels of Loltun Cave are somewhere between 40,000 and 15,000 years old."

This citation demonstrates that the horse remains were identified as extinct Pleistocene animals, and were located in the lower levels underlying the ceramic levels.

One interesting aspect of these particular defenses from the faithful is that they tend to rely on dated references. One possible reason for this is that the results of radiocarbon dating was less reliable in its early phase. The following statement by Paul Martin, in an essay dealing with mammoth extinction, also emphasizes this point:

"Not since the early years of 14C dating, when laboratory protocols for sample selection and pretreatment were not standardized or well understood by consumers of dates (see, e.g., Martin 1958 and Hester 1960), has anyone seriously advanced the thought that mammoths or mastodons survived into the mid-Holocene. Those North American Holocene dates of yore were not replicated and could not be supported stratigraphically and geochemically. They moulder in the graveyard of unverified measurements."

In addition to the unreliability of early carbon dating, another problem originates from the excavation of caves themselves. The abstract for the article Excavations in Footprint Cave, Caves Branch, Beliz, states the following:

"The use of caves by the ancient Maya has been previously documented, but the nature of artifact preservation in these caves presents unique problems not encountered in surface sites of the region. The absence of stratigraphy, though it means that we can view objects as they were left by the Maya, also means that perspective can be distorted, for actions that may have taken place over a long period of time result in an arrangement of objects that appears to us to be synchronic. The nature of artifact preservation in caves presents another, more pressing problem: artifacts are accessible and therefore easily stolen. Although all surface sites in Belize are endangered, cave sites are especially so, and in recent years theft of artifacts and attendant destruction of sites has increased. The following is a report of excavations in a cave that is one of many in an area that has begun to experience the destructive effects of looting within the last decade. We hope that this report will heighten the awareness of archaeologists of the significance of cave sites and stimulate interest in the reconnaissance and recording of such sites before the looters prevail."

Given these circumstances, it is understandable that earlier archaeologists may have been confused about their finds, but these updated sources demonstrate that when these findings are more thoroughly investigated, the same conclusion is verified: there was no post-Pleistocene, pre-Conquest horse in the New World.

Sorenson utilized an additional reference. We can read a reference to it in Daniel Peterson's review of *The Quest for Gold Plates* titled "Ein Heldenleben? On Thomas Stuart Ferguson as an Elias for Cultural Mormons":

"Publications from the late 1950s reported results from excavations by scientists working on the Yucatan Peninsula. Excavations at the site of Mayapan, which dates to a few centuries before the Spaniards arrived, yielded horse bones in four spots. (Two of the lots were from the surface, however, and might represent Spanish horses.) From another site, the Cenote (water hole) Ch'en Mul, came other traces, this time from a firm archaeological context. In the bottom stratum in a sequence of levels of unconsolidated earth almost two meters in thickness, two horse teeth were found. They were partially mineralized, indicating that they were definitely ancient and could not have come from any Spanish animal. The interesting thing is that Maya pottery was also found in the stratified soil where the teeth were located.

*Subsequent digging has expanded the evidence for an association of humans with horses. But the full story actually goes back to 1895, when American paleontologist Henry C. Mercer went to Yucatan hoping to find remains of Ice Age man. He visited 29 caves in the hill area—the Puuc—of the peninsula and tried stratigraphic excavation in 10 of them. But the results were confused, and he came away disillusioned. He did find horse bones in three caves (Actun Sayab, Actun Lara, and Chektalen). In terms of their visible characteristics, those bones should have been classified as from the Pleistocene American horse species, then called *Equus occidentalis* L. However, Mercer decided that since the remains were near the surface, they must actually be from the modern horse, *Equus equus*, that the Spaniards had brought with them to the New World, and so he reported them as such.³ In 1947 Robert T. Hatt repeated Mercer's activities. He found within Actun Lara and one other cave more remains of the American horse (in his day it was called *Equus conversidens*), along with bones of other extinct animals. Hatt recommended that any future work concentrate on Loltun Cave, where abundant animal and cultural remains could be seen.*

It took until 1977 before that recommendation bore fruit. Two Mexican archaeologists carried out a project that included a complete survey of the complex system of subterranean cavities (made by underground water that had dissolved the subsurface limestone). They also did stratigraphic excavation in areas in the Loltun complex not previously visited. The pits they excavated revealed a sequence of 16 layers, which they numbered from the surface downward. Bones of extinct animals (including mammoth) appear in the lowest layers.

Pottery and other cultural materials were found in levels VII and above. But in some of those artifact-bearing strata there were horse bones, even in level II. A radiocarbon date for the beginning of VII turned out to be around 1800 BC. The pottery fragments above that would place some portions in the range of at least 900–400 BC and possibly later. The report on this work concludes with the observation that "something went on here that is still difficult to explain." Some archaeologists have suggested that the horse bones were stirred upward from lower to higher levels by the action of tunneling rodents, but they admit that this explanation is not easy to accept. The statement has also been made that paleontologists will not be pleased at the idea that horses survived to such a late date as to be involved with civilized or near-civilized people whose remains are seen in the ceramic-using levels.⁵ Surprisingly, the Mexican researchers show no awareness of the horse teeth discovered in 1957 by Carnegie Institution scientists Pollock and Ray. (Some uncomfortable scientific facts seem to need rediscovering time and time again.)"

It is odd that the "two Mexican archaeologists" were not named, but the reference for footnote 5 is an article by Peter Schmidt titled "La entrada del hombre a la peninsula de Yucatan." Other sources utilize Schmidt's study of the Loltun caves to draw conclusions about the chronological layers.

The aforementioned book *The Ice Age Cave Faunas of North America*, page 262, makes this statement:

"Stratigraphic and chronological sequences for the excavated units were established, but contradictory data from the field notes imply possible mixing of biological and cultural remains. The sequence as reported is as follows (Schmidt 1988)

- 1. Levels I through VII are from the Ceramic stage, but extinct animal remains occur at the bottom of Level VII.*
- 2. Level VIII represents the preceramic stage, including some lithic elements and extinct fauna. The boundary between the Pleistocene or the Holocene may be located here or at the bottom of Level VII."*

Note that the author is utilizing information provided in Schmidt's report. This statement clarifies that the extinct animal remains were at the BOTTOM of Level VII, which is the possible demarcation for the Pleistocene Era. In fact, elsewhere in this same text, it is asserted that, indeed, Level VII is Pleistocene in dating:

"Loltun Cave is found at 40m. elevation in the southeastern portion of the state of Yucatan., 7 m. south of Oxkutzcab. Several publications about the studies undertaken on the remains from this cave are available, including Hatt and his collaborators (Hatt et al 1953) and by personnel of the National Institute of Anthropology and History (Velazquez 1980, Alvarez 1982, Alvarez and Polaco 1982, Alvarez and Arroyo-Cabrales and Alvarez 1990, Pollaco et al 1998, see also Chapter 10 of this volume). The known stratigraphy contains sixteen levels; sediments from levels VII to XVI are Pleistocene in age." (page 285)

Thanks to the help of Chris Smith, who provided scans of the text, and John Williams, who translated the text from Spanish, I was able to obtain the pertinent sections of the Peter Schmidt text. First, let's review the portion of the previously quoted Peterson essay that refers to this research:

"It took until 1977 before that recommendation bore fruit. Two Mexican archaeologists carried out a project that included a complete survey of the complex system of subterranean cavities (made by underground water that had dissolved the subsurface limestone). They also did stratigraphic excavation in areas in the Loltun complex not previously visited. The pits they excavated revealed a sequence of 16 layers, which they numbered from

the surface downward. Bones of extinct animals (including mammoth) appear in the lowest layers.

Pottery and other cultural materials were found in levels VII and above. But in some of those artifact-bearing strata there were horse bones, even in level II. A radiocarbon date for the beginning of VII turned out to be around 1800 BC. The pottery fragments above that would place some portions in the range of at least 900–400 BC and possibly later. The report on this work concludes with the observation that "something went on here that is still difficult to explain." Some archaeologists have suggested that the horse bones were stirred upward from lower to higher levels by the action of tunneling rodents, but they admit that this explanation is not easy to accept. The statement has also been made that paleontologists will not be pleased at the idea that horses survived to such a late date as to be involved with civilized or near-civilized people whose remains are seen in the ceramic-using levels. Surprisingly, the Mexican researchers show no awareness of the horse teeth discovered in 1957 by Carnegie Institution scientists Pollock and Ray. (Some uncomfortable scientific facts seem to need rediscovering time and time again.)"

Now here's the pertinent section from the Schmidt research:

"Critical for associating human industry with pleistocene fauna is layer VIII, where there is no ceramic but where lithic tools and many horse remains appear. But unfortunately there are horse [remains] in layers VII and VI and also a very small quantity in layer V, all three containing ceramics.

Obviously there is some disturbance in these layers. Rodents as well as the most common mammals from the cave stand out in studies of the cave's fauna.

The only radiocarbon dating published (1805 +/- 150) BC was taken using a combined sample of various pieces of charcoal and belongs to the area of contact between layers VII and VIII.

The stratigraphic and faunal analyses clearly establish that the excavated sediments must have accumulated from the Pleistocene era to the present, with heavy interference at least from layer VII on up. Only layer VIII remains a possible area of occurrence of both lithic material and pleistocene bones in a primary context. Unfortunately in neither this layer or others is there direct association of human tools with the bones, nor are there fire holes where charcoal or bones were clearly used or worked. The same is true with layer VII (El Tunel) (p 253)."

[After discussing flora found in the cave]. The situation in terms of fauna is more complicated. The majority of the animals discovered are represented since the Pleistocene era, having their origins in some of the neo-arctic and neotropical fauna. Studying in detail only the rodents, a sequence of types of vegetation the caves' surroundings was established that is very similar to that accomplished by means of pollen: layers before XIII-B, grassland; layers XIII and XII-L, medium jungle; layers XII-K to VIII, once again grassland; and from VII to I the current vegetation. These changes were not sudden but rather constitute advances and declines of the jungle with greater or lesser extension of the grasslands, where large animals and certain specialized rodents lived.

Once again the end of pleistocene conditions appears to be situated in the region of layers VIII and VII of the well "El Toro." Of the four extinct pleistocene species (*Mammot americanum*, *Canis diris*, *Tanupolama*, and *Equus conversidens*) and the three whose distribution receded more to the north (*Bison bison*, *Canis lupus*, and *Canis latrans*) five did not occur above layer VIII in "El Toro" and layer VII-F in "El Tunel." [The exceptions are the bison with three problematic examples in layer VI of "El Toro" and the horse, with 44 fragments in layers VII, VI, and V (all with ceramics), in "El Toro" and 59 fragments in the subdivisions VII-B and VII-E in "El Tunel." What is clear is that the presence of the horse *Equus conversidens* alone cannot be sufficient to declare a layer as pleistocene in its entirety, given the long series of combinations of this species with later materials in the collections of Mercer, Hatt, and others. Something happened here that is still difficult to explain. Horse bones seem to have formed the last layer of the Pleistocene or Epi-Pleistocene in various caves, or they must have been dragged into the caves decades up to millenia later, something that is difficult to accept given the climatic conditions of the Tropics. If we postulate a longer survival of the horse than that of other pleistocene animals to explain this situation, it would have to extend until almost the beginning of the ceramic epoch, which would not please the paleontologists.

Lithic Loltun also has not been very amenable [to exploration]. There are very few well-defined techniques for dealing with stone fragments and cores; such techniques have varied widely from the beginning to the end. One of the reasons may derive from the uselessness of local flint for fine work. In the layers considered to be pre-ceramic there are very few tools: scrapers, shavers, knife-scrapers, jagged-edged tools (denticulados), and one sharp-ended tool (punta), all being of a very reduced size and totaling no more than 11 objects. Production techniques are limited to marginal finishing using stone chips and plates as the primary materials.

It may seem excessive the detail with which we have described the evidence that is so hard to understand about Loltun. But I believe that it is necessary because of the site's possible importance and because the findings have become widely known without specifying that the usable data until now are few and weak. Loltun has been incorporated into general theories about Mayan archeology and about the origins of humans in Mesoamerica.

Some authors limit themselves to mentioning an association between stone artifacts and Pleistocene animal bones, for others there is an association [p. 256] with Mammoth bones, and in a summary of the most relevant Mayan archeology in the last few years the long stratified sequence and the appearance of ceramics supposedly dated in 1800 BC is indicated. Regarding this last date, we must emphasize that among the first pots found in layer VII of "El Toro" there appear some fragments having characteristics of early pottery, but comparisons with material from Chiapas and from the Swazey complex in Belize have not given positive results, so the most probable date is Middle Preclassic.

The preceramic lithic material from Loltun has been tentatively assigned, because of its primitive and irregular character, to very early stages, before 14,000 BC. Others place it in the transition between the Pleistocene and Holocene and compare it with the complex of La Piedra del Coyote in the Guatemalan highlands and phase I of the Cave of Santa Martha in Chiapas. In this case it would have an age somewhere around 8000 to 10000 BC. It would be a manifestation of the Superior Cenolithic or until the Proto-Neolithic, or in other words, the Archaic.

In view of the evidence I have described, I lean toward the second possibility, and it is possible that its antiquity could be less, if we consider the continuity of the lithic of the Preclassic.

There is much left to do at Loltun. We are sure that there is an association of humans with pleistocene animals, but we must look in the part that has not yet been excavated for unmistakable evidence, where the strata have not been disturbed, where there is direct association of tools and bones, and direct action with the animals. We lack explicit traces of human visits to the cave as a home, places of work, or remains of other cultural elements besides only stone chips, and in the end, remains of prehistoric humans themselves." (pp. 254-55)

Now let's compare Schmidt's statements to the Peterson/Sorenson summary of those statements.

Peterson:

"Pottery and other cultural materials were found in levels VII and above. But in some of those artifact-bearing strata there were horse bones, even in level II. A radiocarbon date for the beginning of VII turned out to be around 1800 BC. The pottery fragments above that would place some portions in the range of at least 900–400 BC and possibly later."

Schmidt:

"But unfortunately there are horse [remains] in layers VII and VI and also a very small quantity in layer V, all three containing ceramics."

My comments: While there is nothing in this Schmidt reference about horse bones above Level II, Peterson may have been referencing the earlier Mercer find. However, the horse bones from the top levels were identified as the modern horse, post-Conquest.

Peterson:

"Some archaeologists have suggested that the horse bones were stirred upward from lower to higher levels by the action of tunneling rodents, but they admit that this explanation is not easy to accept."

Schmidt:

"Obviously there is some disturbance in these layers. Rodents as well as the most common mammals from the cave stand out in studies of the cave's fauna..."

The stratigraphic and faunal analyses clearly establish that the excavated sediments must have accumulated from the Pleistocene era to the present, with heavy interference at least from layer VII on up. Only layer VIII remains a possible area of occurrence of both lithic material and pleistocene bones in a primary context..."

*What is clear is that the presence of the horse *Equus conversidens* alone cannot be sufficient to declare a layer as pleistocene in its entirety, given the long series of combinations of this species with later materials in the collections of Mercer, Hatt, and others. Something happened here that is still difficult to explain. Horse bones seem to have formed the last layer of the Pleistocene or Epi-Pleistocene in various caves, or they must have been dragged into the caves decades up to millenia later, something that is difficult to accept given the climatic conditions of the Tropics. If we postulate a longer survival of the horse than that of other pleistocene animals to explain this situation, it would have to extend until almost the beginning of the ceramic epoch, which would not please the paleontologists."*

My first comment is that the Peterson/Sorenson summary is misleading in that it states that Schmidt said the possibility that horse bones were stirred upward from lower levels to higher levels by tunneling rodents is "not easy to accept". This is not true. Schmidt accepts that the tunneling rodents disturbed the layers, as does Mercer.

From page 118 of the Mercer text:

"Layer 3, one foot eleven inches to two feet ten inches thick, and capped with a solid white bed of pure ashes.

We soon found that Layer 3 had been much disturbed, and notably by the burrowing of animals."

It should be noted that the numbers of the layers vary depending upon researcher. Earlier, on page 116, Mercer defined "layer 3" as follows:

"The bottom of Layer 3 marked, as before mentioned, the bottom line of human interference in the cave earth."

This seems to roughly correlate with Schmidt's level VII.

Rodents heavily populated this cave and obviously disturbed the layers. What Schmidt referred to as "difficult to accept" is that the horse bones were dragged into the caves later, not that the rodents may have disturbed the remains. Note again: "Horse bones seem to have formed the last layer of the Pleistocene or Epi-Pleistocene in various caves, OR they must have been dragged into the caves decades up to millenia later, something that is difficult to accept given the climatic conditions of the Tropics." Schmidt is NOT saying that it would be difficult to accept that rodent tunneling disrupted the layers of the cave, and hence relocated the horse bones from the lowest level (the only level in which the bones were in "primary" context). He is saying that one must EITHER accept that the horse bones were in the lowest layer and were disturbed, OR they were dragged in later. The idea that they were *dragged in later* is difficult to accept.

The more fundamentally misleading context of the Peterson/Sorenson statement is that it implies that Schmidt did not believe that the horse remains dated from the Pleistocene era. Yet Schmidt made it obvious that he believes that the later layers were disrupted and that "only layer VIII remains a possible area of occurrence of both lithic material and pleistocene bones in a primary context." This is consistent with the conclusions arrived at in the Ice Age Fauna text quoted above.

A frequently repeated argument among those who insist that the absence of evidence of the horse dating to the Book of Mormon time periods in Mesoamerica does not constitute evidence of absence is the following:

Consider the case of the Huns of central Asia and eastern Europe. They were a nomadic people for whom horses were a significant part of their power, wealth, and culture. It has been estimated that each Hun warrior may have owned as many as ten horses. Thus, during their two-century-long domination of the western steppes, the Huns must have had hundreds of thousands of horses. Yet, as the Hungarian researcher Sándor Bökönyi puts it with considerable understatement, "we know very little of the Huns' horses. It is interesting that not a single usable horse bone has been found in the territory of the whole empire of the Huns. This is all the more deplorable as contemporary sources mention these horses with high appreciation."58

Accordingly, if Hunnic horse bones are so rare despite the vast herds of horses that undoubtedly once inhabited the steppes, why should we expect extensive evidence of the use of horses in Nephite Mesoamerica—especially considering how limited are the references to horses in the text of the Book of Mormon?"

Daniel Peterson, Matthew Roper: [Ein Heldenleben?](#)

Evidence contradicting this claim can be found here:

<http://www.itsmypony.com/news-archive/201-hun-princess>

Hun Princess Graveyard's Secret

"A Hunnu princess's graveyard discovered in summer of 1990 in Mankhan locality of Khovd province has become the sensation in the world of archeology.

Ever since 1924 when the graveyard of the Hunnu ruler Modun Shayu filled with riches was discovered, this become only the second time when the remains of Hun noble was found.

"We were really lucky. The graveyard was not plundered. Though the wooden cover of the graveyard was demolished the coffin chamber was well preserved," says the Khovd archeological expedition head, Prof. D. Navaan....

Five horse skulls were put on the northern side to the burial, with one horse head turned towards the coffin. The number 5 was revered by Huns because of their special reverence for Cygnus Constellation. One separate horse head probably belonged to the princess' beloved horse."

From the Encyclopedia Britannica:

"Mongolian Huns

In the 4th century BC the Huns started to migrate westward from the Ordos region. By the 3rd century BC they had reached the Transbaikalia and had begun to enter Mongolia, which soon became the centre of their empire. Many mounds mark their progress. Those in the Zidzha Valley lie at the same latitude as the Pazyryk mounds and were subjected to similar conditions of freezing, which helped preserve their contents. The richest of the excavated burial sites, however, are those of Noin Ula, to the north of Ulaanbaatar, on the Selenge River. Like those at Pazyryk, they included horse burials. The furnishings of one tomb were especially lavish. The prince for whom it was made must have been in contact with China, for his coffin was apparently made for him there, as were some of his possessions buried with him (e.g., a lacquer cup inscribed with the name of its Chinese maker and dated September 5, AD 13, now in the State Hermitage Museum). His horse trappings (State Hermitage Museum) are as elaborately decorated as many of those found at Pazyryk. His saddle was covered with leather threaded with black and red wool clipped to resemble velvet. The magnificent textiles in his tomb included a woven wool rug lined with thin leather (State Hermitage Museum); the centre of the rug depicts combat, of Scytho-Altaic character, between a griffin and an elk, executed in purple, brown, and white felt appliqué work. The animals' bodies are outlined in cord and embroidered. The design on another textile is embroidered in the form of a tiger skin with a head at each end. The animal's splayed-out body is formed of black and white embroidered stripes. Other textiles are of Greco-Bactrian and Parthian origin. In some of the Parthian fragments, Central Asian and Sasanian Persian influences prevail over Hellenistic ones."

Chris Smith, known as "California Kid" on various LDS related message boards, shared pertinent information on his blog regarding this topic. He graciously gave me permission to include that here.

"Book of Mormon defender Mike Ash recently repeated the old argument that even though we know that the Huns had plenty of horses, "not a single usable horse bone has been found in the territory of the whole empire of the Huns. Based on the fact that other--once thriving--animals have disappeared (often with very little trace), it is not unreasonable to suggest that the same thing might have happened with the Nephite 'horse.'"

Ash's claim about Hun horse bones is unfortunately not accurate. Here and here are books that refer casually to Hun horse bone evidence. Here is a report on a Hun horse find in Mongolia in 1990.

Ash's example is also problematic because bone evidence is not the only evidence we would expect to find in Mesoamerica if horses had been domesticated there. There have been a large number of human cultural artifacts relating to horses found in Hunnic lands. There are a great many saddles, harnesses, and whips in their burials and funeral offerings, for example. In fact, wherever horses have been domesticated, they have always left their mark on art and material culture. That is because horses gave a tremendous military and economic advantage to the civilizations that mastered them. Yet in Mesoamerica, although we have a great deal of art, including vast numbers of animal representations, horses are not depicted.

We find no saddles, no bridles, and no chariot wheels.

Additionally, it should be noted that some historians have called into question how many horses the Huns actually brought with them into Europe. The climate and food supplies in Eastern Europe were not as well-suited to large numbers of horses as the Asian steppes. According to the Encyclopedia Britannica,

[Attila's] Huns had become a sedentary nation and were no longer the horse nomads of the earlier days. The Great Hungarian Plain did not offer as much room as the steppes of Asia for grazing horses, and the Huns were forced to develop an infantry to supplement their now much smaller cavalry. As one leading authority has recently said, "When the Huns first appeared on the steppe north of the Black Sea, they were nomads and most of them may have been mounted warriors. In Europe, however, they could graze only a fraction of their former horse power, and their chiefs soon fielded armies which resembled the sedentary forces of Rome."

So, if there is less evidence of Hun horses during this period in Europe than we would expect, it may well be because the Huns of the region actually did not have as large a number of horses as commonly thought. Indeed, one source suggests that Europe's Great Hungarian plain could have supported no more than 20,000.

And finally, it's worth adding that the period of Hun rule was quite short compared to the several-thousand-year lacuna of horse evidence in the Americas from the generally-accepted Paleolithic extinction date to the time of alleged domestication by Book of Mormon peoples. Even if the Hun period had been a true lacuna-- which it is not-- it wouldn't really have been comparable to the situation in the Americas."

<http://chriscarrollsmith.blogspot.com/2010/03/hun-horse-bones-and-book-of-mormon.html>

Wisconsin Spencer Lake Horse Skull

Daniel Peterson, in the FAIR online video The Book of Mormon and Horses, made the following statements:

"There have also been some horse bones that have been radiocarbon dated to about the time of Christ that were found in the upper mid-west in the United States."

"Preliminary reports seem to indicate that those horse bones do date, in fact, to Book of Mormon times."

[Daniel Peterson horse claim](#)
filmed in January 2006

This is a clear reference to the Wisconsin Spencer Lake Horse Skull, which Dr. Peterson later verified in a discussion.

It has been long rumored within LDS internet circles that the horse skull was in the process of being radiocarbon dated, and despite claims of a hoax by some, would provide just the evidence Book of Mormon believers needed. The radiocarbon dating was being conducted by Dr. Stephen Jones, a professor at BYU, as is Dr. Peterson. Before sharing the results of those tests, a brief review of the history of this find is in order.

There Were No Ancient Vikings in Wisconsin? Prank at Spencer Lake Mounds By [K. Kris Hirst](#), About.com

[Spencer Lake Hoax](#)

One extremely persistent rumor in alternative archaeological circles is that there is evidence--suppressed evidence--that the Native American mounds of Wisconsin, Minnesota, and Iowa were built by Vikings. To support this premise, oddly shaped glacial erratics are thought to be "Viking mooring stones," various "rune stones" of very dubious origin are cited, and, as in the case of this story, there are rumors of horse skeletons which were found in mounds--and the evidence suppressed. One of the funniest stories associated with these Viking legends has to do with the Spencer Lake Mound in extreme northwest Wisconsin. There was, undeniably, a horse skull found in Spencer Lake Mound. How it got there is a tale worth telling.

Spencer Lake Mound and the Clam River Focus

The Spencer Lake Mound is a large round, hemispherical burial mound, the largest of several mounds located on terraces near the shore of Spencer Lake, Burnett County, Wisconsin. During the 1935 and 1936 excavations by the University of Wisconsin at Milwaukee, excavators found a total of 58 separate secondary burials, accounting for a total of at least 182 individuals. Artifacts recovered from the site included triangular arrow points, a shaft straightener, red ochre, a hearth, and a few sherds of Clam River pottery, which is part of the BlackDuck ceramic group. Birchbark baskets and the claws and skin of a beaver were recovered from the burials.

The Clam River Focus was established by archaeologist Will McKern, and besides Spencer Lake Mound includes the Clam Lake Mound Group. The people who built and used these mounds to bury their dead lived during the end of the Middle Woodland period, ca 500-700 AD, well before the historic period--and, for those trans-oceanic Viking aficionados, a good 300-500 years before the Viking colony in Newfoundland called L'Anse aux Meadows site was occupied.

How the Story Began

During the summers of 1935 and 1936, the University of Wisconsin excavated Spencer Lake Mound. The principal investigators were Ralph Linton and W. C. McKern; their staff of students included A.C. Spaulding, George Quimby, David Stout, and Joffre Coe--all destined to become pretty famous archaeologists in their own rights. It was in the fall of 1936, probably, when a young college student signed up for a beginning anthropology course taught by Ralph Linton. The young man, who is known in this story only as Mr. P., had been an avid artifact hunter while growing up in northwestern

Wisconsin. Conversing with his classmates in 1936, Mr. P. discovered that excavations at the Spencer Lake Mound the previous summer had revealed an astonishing artifact: a horse's skull buried deep within the mound.

Mr. P's Confession

This was quite a shock to Mr. P. After gathering all of his available courage, he went into Linton's office and confessed that in 1928, the then-teen aged Mr. P. and a buddy had spent an afternoon pot-hunting the Spencer Lake Mound.

The boys dug a sizeable hole, consuming the better part of a hot afternoon, without encountering any kind of a recognizable feature. They were about to backfill the opening when one of them suggested that they bury a horse's skull that lay along the edge of a nearby field a short distance away. This seemed like a brilliant suggestion to the undisciplined minds of the boys, so the skull was retrieved and carefully laid in an oriented position at the bottom of the excavation before backfilling commenced. Anticipation of the probable results of this piece of mischief somehow eased the monotony of the backfilling, and the miscreants mutually agreed that in about two hundred years some archaeologist would dig up the skull and conclude that he had found something really worthwhile [from Mr. P., *Wisconsin Archeologist* 45(2):120 (1964)].

Linton found the story amusing, apparently, and a mightily relieved Mr. P. went off onto a career of his own, outside of archaeology. But, either Linton didn't tell McKern about the prank or he did tell McKern but McKern didn't believe him. For whatever reason, over the next 25 years or so, at least three publications--and probably a few others--described the Spencer Lake Mound as containing an *in situ* horse skull.

In 1962, Mr. P., by then a college professor but still with an avocational interest in archaeology, dropped into the office of Robert Ritzenthaler at Milwaukee Public Museum, when the first major monograph for the Clam River Focus (including the Spencer Lake Mound) was being prepared. Mr. P. told Ritzenthaler about his youthful escapade, and he was quite contrite about it and agreed to prepare a statement of the facts as best he remembered them, after 34 years. A copy of this was sent to McKern, who responded with a statement to the effect that he was convinced that the skull he excavated was not the planted one, but as there was reasonable doubt, he would make some revisions [in the monograph] and suggested that his statement be published. Mr. P., however, requested that neither his statement nor McKern's be published, a request that was honored, until the Griffin review. [Ritzenthaler, *Wisconsin Archeologist* 45(2):115-116 (1964)].

James B. Griffin Exposes the Prank

Enter James B. Griffin, undeniably doyen of archaeology for the American northeast. In 1964, Griffin wrote a review of the Clam River Focus monograph, and noted that despite the previous publication of a horse skull in Spencer Lake Mound, there was no mention of it in the book. And, so, finally, notwithstanding the high level of embarrassment suffered by Mr. P., with an academic career of his own to maintain, notes by Mr. P., W. C. McKern, and Robert Ritzenthaler describing the story above were published in the Wisconsin Archeologist, and the situation was resolved. Further evidence (beyond Mr. P.'s complete lack of motive for making this story up) was provided by Walter Pelzer, mammologist at the museum in those days, who looked at the skull and identified it as a western mustang, a horse imported for use on Wisconsin farms in the early 20th century. Pelzer also spotted rodent gnawing on all planes of the skull that suggested to him that it had been exposed to the weather for a while before being buried. Radiocarbon dates of the charcoal recovered from the mound provided a use date for the mound between circa 500-1000 AD.

At no point in these proceedings has any archaeologist ever believed the presence of the horse indicated early Viking presence in the American Midwest. The horse skull only suggested to McKern and others that the Clam River Focus sites (of which Spencer Lake Mound is one) dated to the early historic period (i.e., 1700s). But, because there are publications in dusty library stacks saying there was a horse skull in Spencer Lake Mound, the rumors continue to persist, I suppose on the principle that if it's in print it must be true. But no! despite what you may have heard, as far as the evidence shows, the only Viking presence in the Americas was a failed 11th century colony in Newfoundland called l'Anse aux Meadows.

McKern, W. C.

1964 The Spencer Lake horse skull, Response to Mr. P.'s letter of June 28, 1963. *Wisconsin Archeologist* 45(2):118-120

1929 Wisconsin archeology in light of recent finds in other areas. *Wisconsin Archeologist* 20(1):1-5.

1942 The first settlers of Wisconsin. *Wisconsin Magazine of History* 26(2):153-169

1963 The Clam River Focus. *Milwaukee Public Museum Publications in Anthropology* No. 9. Milwaukee.

Mr. P.

1964 A Burnett County hoax. *Wisconsin Archeologist* 45(2):120-121

Ritzenthaler, Robert

1964 The riddle of the Spencer Lake horse skull. *Wisconsin Archeologist* 45(2):115-117

1966 Radiocarbon dates for Clam River Focus. *Wisconsin Archeologist* 47(4):219-220

Having an actual confession was no deterrent to those determined to find evidence of the horse during Book of Mormon times, and their determination resulted in the offer of Steve Jones to have the skull radiocarbon dated. There have long been rumors that when this carbon dating was revealed, it would demonstrate that the horse was, indeed, from Book of Mormon time periods, as Dr. Peterson's statement above demonstrates...

In reality, the radiocarbon dating results were in long ago. In fact, the results were in years prior to Dr. Peterson's statement on the linked FAIR video. A book published in 2004 explains the results. Thanks to Chris Smith for sharing the relevant pages, which he discusses on his blog here: <http://chriscarrollsmith.blogspot.com/>

"In this case those conclusions are testable. In 2002 I was contacted by Dr. Stephen Jones of Brigham Young University, a researcher conducting a project on the antiquity of New World horses. He was willing to provide funds for dating the skull using accelerator mass spectrometry (AMS) in order to settle questions regarding the skull's antiquity. A single sample was removed by MPM staff from the aboral margin of the jaw near the gonion caudale. It was separated into three subsamples, one held as a voucher and the others independently submitted to different radiocarbon labs (Beta Analytic and Stafford Research Laboratories) for AMS dating. The samples were of approximately the same size and yielded results in close

From Alex Barker's essay "Stewardship, Collections Integrity, and Long-term Research Value", page 30 in [Our Collective Responsibility: The Ethics and Practice of Archaeological Collections Stewardship](#).

Deanne G. Matheny, in her essay "Does the Shoe Fit? A Critique of the Limited Tehuantepec Geography", included in the book [New Approaches to the Book of Mormon](#), also offers a similar critique of Sorenson's evidence. We are left with the current dearth of actual horse remains in Mesoamerica. Therefore, we are left with this proposal: *if the horse did exist in Mesoamerica during Book of Mormon times, then not a single bone or tooth from any of these horses has ever been discovered, despite the fact that the remains of an abundance of other animals have been discovered in Mesoamerica.*

There are other avenues to explore, as well, other than simple animal bones as refuse. Bones were also utilized to make tools or ornaments, and animals were incorporated into Mesoamerican ideology. Arthur Demarest, in his excellent book [Ancient Maya. The Rise and Fall of a Rainforest Civilization](#), states, on page 123:

"A wide range of animal life flourishes within and below the rain forest canopies of the southern lowlands. Jaguars, ocelots, deer, fox, and rabbits inhabit the floor of the rain forest and were all utilized by the May for food, pelts, and bone ornaments or tools. Agoutis (small rodents), ant-eating tapirs of various sizes, turkeys, and herds of small wild boar (peccaries or havile) also abound in the rain forest and were important in the ancient Maya diet, as well as in their representations in ceramic art and sculpture (Benson 1977). The canopies above are home to lively troops of spider and howler monkeys and to a noisy host of exotic birds, including the familiar toucans and parrots in many varieties (Murie 1935; L.C. Stuart 1964). Especially important in Maya ideology and imagery were the ever-present hummingbird and the stunningly beautiful giant macaws, with their long bright red or blue-green plumage (Griscom 1932). The latter, along with the quetzal from the highland slopes to the south, provided much of the plumage for the elaborate headdresses that were a critical marker of status for Maya elites, especially rulers.

The reptiles and amphibians of the rain forest are even more omnipresent in Maya ideology and art, especially the caiman (alligator), symbol of the earthly plane of existence, and many varieties of snakes, including boas, corals, rattlesnakes, pit vipers, and the most deadly barba amarilla (fer-de-lance) and xalbate (bothrops numifer) (Schmidt and Andrews 1936). Toads, frogs, and turtles are found in the forest's lakes, swamps, and rivers. The ancient Maya made effective use of these animals as well, employing the carapaces of turtles for useful tools ranging from musical instruments to hard surfaces for shields, cotton armor, and mosaics in headdresses. The lakes, rivers, and swamps also provided important elements in the Maya diet, including fish such as mojarra, catfish, and robalo, and many types of shellfish. Fish bones were utilized by the ancient Maya for needles, awls, and other tools while fragments of shell (some imported from the Caribbean or Gulf coasts) were employed for the complex mosaic imagery on Maya headdresses, shields, and ornaments, as well as in necklaces and ear spoons. Even the insect life gave the Maya both symbols and useful products, including incenses and honey from wild and domesticated hives.

The density of life in the Peten rain forest remains impressive even after two centuries of misguided modern settlement and exploitation. In those zones not yet leveled by lumbering or settlement, the cacophony of rain forest life – the mingled cries, howls, calls, and buzzing of birds, monkeys, frogs and insects – rises in the mornings and evenings to a roaring pitch. Taken together, the wildlife and vegetation of the rain forest gave the ancient Maya a nearly unlimited supply of useful products for subsistence, construction, ornament, and imagery – even without considering the agriculture that produced the bulk of their diet. The wealth of the rain forest was well understood by the ancient Maya. They stood in awe of the jungle and utilized its structure and its inhabitants as models for many aspects of their ideology."



This quote, while admittedly lengthy, is important because it brings us to another important avenue for discovering the animal life in ancient Mesoamerica – their imagery and ideology. Like innumerable others before and since, ancient Mesoamericans included the important elements of their daily lives in their imagery and religious stories. One extremely important aspect of their ideology, frequently portrayed in their imagery, is the idea of the animal companion, or way. The idea of a spirit animal companion is one of the most important in Mesoamerican ideology. In fact, remnants of this particular belief have been found in modern Maya, as demonstrated in Evon Z. Vogt's essay "Daily Life in a Highland Maya Community: Zinacantan in Mid-Twentieth Century", from [Ancient Maya Commoners](#), page 29:

"The ancestral deities are responsible for installing an inner soul in the embryo of every unborn Zinacanteco child. Interaction between the living Zinacantecos and the ancestors takes place via these inner souls located in the hearts and bloodstreams of persons. The Zinacanteco soul is composed of thirteen parts, and a person who loses one or more parts must have a curing ceremony to recover them. But the inner soul, though temporarily divisible into parts, has some special attributes and is believed to be indestructible and eternal. At death, this soul leaves the body and joins a pool of inner souls kept by the ancestors. It is later utilized for another person, often a grandchild, but while the person is alive, the inner soul as a unit can leave the body during sleep and go visiting with the inner souls of other Zinacantecos or the deities. It can drop out of the body temporarily in periods of intense excitement, such as the point of orgasm in sexual intercourse. During life, soul loss can also occur from falling down (mothers are very concerned about their children falling) or because of bad behavior, such as fighting with kinsmen or mistreating maize, which is punished by the ancestors causing the person to fall down or, more dramatically, sending a lightning bolt to knock out several parts of the soul. Soul loss can also occur when an evil person performs a witchcraft ritual in a cave to "sell" the inner soul to the Earth Lord, who then uses the person as a servant.

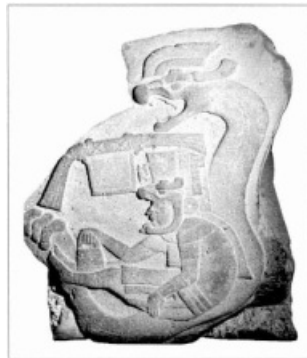
At the same time the ancestors install the inner soul in the human embryo, it is also installed in the embryo of a wild animal, such as a jaguar, ocelot, coyote, or smaller animal, like a squirrel. These animal spirit companions are kept in four corrals inside the "Senior Large Mountain," a large volcano rising majestically to over 9,000 feet east of Zinacantan Center. Throughout life, the inner soul of a person is shared with the animal companion; anything that happens to the person happens to the animal and vice versa. When the ancestors are really provoked with the behavior of a living person, they will let his/her animal spirit companion out of the corral to wander alone in the woods. The life of the living person is then in genuine peril,

and an elaborate curing ceremony must take place promptly to round up the animal companion and place it back in its corral.”

In ancient Mesoamerica, it appears that the elite, in particular, were associated with these animal spirit companions. These way are particularly important during battle and during ritual ceremonies. In F. Kent Reilly III and James F. Garber's essay "The Symbolic Representation of Warfare in Formative Period Mesoamerica", in the book Ancient Mesoamerican Warfare, edited by M. Kathryn Brown and Travis W. Stanton, page 130, we read:

“When the Maya elite dressed for battle in the costume of zoomorphic feline supernaturals, they were making a statement about their perception of the ideology of war and not just putting on battle armor. Putting on such costumes was an important supernatural source of victory in war (Freidel et al. 1993:190-93).

The discovery that the Maya believed that their elites possessed supernatural spirit companions, or way, has been one of the great insights in to ancient Maya worldview (Freidel et al. 1993; Houston and Stuart 1989; Stuart 1988). The way glyph is a depiction of an ajaw. This glyph designates the first day in the Maya Tzolkin calendar but also functions as a title for rulers, with half its face covered by a jaguar pelt. As currently understood, a way is an animal spirit companion, a trance state, and the ability to transform into that spirit companion and overcome enemies through bewitchment (Freidel et al. 1993:190). In the Maya belief system, even the gods have wayob (plural of way). In Classic period iconography, the wayob could take the forms of humans, animals, and zoomorphic supernaturals. Before the adoption of Teotihuacan's Tlaloc/Venus war complex, jaguarian imagery was associated with the most powerful of the wayob. Even after the adoption of this Central Mexican war complex, jaguarian imagery continued to feature prominently among Maya way imagery.”

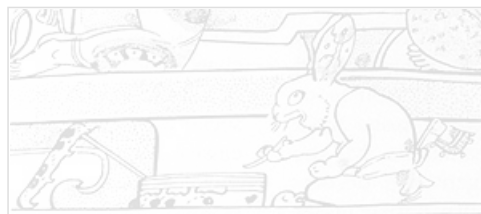


The essay goes on to describe the fascinating story of how, at the time of conquest, the Mesoamericans seemed to interpret the Spanish banner image of the Virgin Mary as the Spaniard's own way, and ascribed their defeat to its power.

Brant Gardner, a Book of Mormon scholar, has suggested that this idea, of Maya elite going into battle with their way, often carried on a litter, may have been the original concept that Joseph Smith translated as "horse and chariot". (see Book of Mormon Anachronisms, Part 3: Warfare)

Aside from this speculation, Book of Mormon scholars often insist that the limited references to the horse in the Book of Mormon likely mean that the horse may have been restricted to elite use. If the horse was important enough to be associated with elite battle as a way as Gardner seems to suggest, then surely it would have also found its way into the Mesoamerican imagery and ideology, as other animals have. It has not.

Animals are depicted often in Mesoamerica, outside of their portrayal with elite ceremonies. Some of the animals I remember seeing depicted in Mesoamerican art or pottery are dogs, spiders, turtles, frogs, birds, monkeys, jaguar, peccaries, snakes, crocodiles, fish, bats, stingrays, bees, sharks, snails, and rabbits. (For examples, look here: <http://members.aol.com/emdelcamp/west2.htm>) I'm sure there are many more I omitted. Some of these animals are characters in mythology, such as we find in the Popol Vuh: monkeys, a macaw bird, and a rabbit scribe. Deities are often associated with animals, as well, such as Xaman-Ek, Chak, Kinich-Ahau, Ah-Muzen-Cab, Ah-Puch, Ah-Tzul, Ek-Zip, Balams, Cama-Zotz, Vucub-Caquix, Ixchel, Chac-Xib-Chac, Cit-Bolon-Tum, Copijcha, Coqueela, God P (Frog God), Uayeb, Kukulcan, Ix-Chup, Hun-Batz, Hun-Choen, Muan, Nahual, - and probably more.



Rabbit Scribe

If we apply the "if...then" test to the existence of horses in ancient Mesoamerica, we are left with the highly unlikely proposition that: *if horses existed in ancient Mesoamerica during the Book of Mormon time period, then despite the fact that ancient Mesoamericans depicted many animals in art and ideology, they never depicted a horse or included the horse in any of their mythology.* Added to the complete absence of horse remains during the specified time period, and we are left with a highly unlikely proposition.

The burden already seems insurmountable for the Book of Mormon horse, but there is yet one more complication. Social scientists not only look for physical remains of horses, or depictions of horses in art or ideology, but also look for the known impact that horses have on the social evolution of the area.

It is imperative to remember that the original Lehi group was already familiar with the horse, and its use associated with transportation. While we cannot predict when a group of human beings will finally "get it" when it comes to recognizing the potential of the horse, it seems extremely unlikely that people

coming from a culture that already recognized and used this potential would not transfer that knowledge to horses in a new setting, particularly when it would give them such an advantage over the natives, who apparently had not recognized it.

One of the more common claims of Book of Mormon scholars is that since the text does not explicitly state that horses were used for transportation, then we cannot assume it ever was. In fact they suggest the horse was most likely used as a food source. (see Jeff Lindsay's website essay "It's My Turn, Questions for Anti-Mormons") A quick review of the horse verses I provided at the beginning of this section reveals that there is nothing to indicate horses were used as a food source, and, in fact, are mentioned several times in conjunction with the chariot. In my opinion, the sole reason some scholars insist that horses were a food source and not transportation is in order to avoid the very problem I am now addressing: the impact of the horse on human evolution. Of course, human beings did first use the horse as a food source. Again, from the book [Horses Through Time](#), page 67:

"Many of the most profound changes in human organization and social behavior have come about as the unintended consequences of relatively small, intentional acts. Both the shift from hunting and gathering to farming and the development of cities from medium-sized tribal villages can be described in this way. Humans are blessed with sufficient intelligence and foresight to analyze the myriad problems they face and to act in their own self-interest – but they seldom understand the ultimate implications of their actions.

Horse domestication almost certainly should be understood in this way. It is doubtful that any prehistoric genius foresaw the potential capabilities of the wild steppe horse as a transport animal. Wild horses are alert, suspicious, large, powerful animals, and stallions attack both predators and rival stallions. The so-called "wild" horses we know today, such as the mustangs of western North America, are feral animals descended from domesticated populations that were bred for ease of handling for thousands of years. The truly wild horses of the Copper Age probably were more aggressive and tougher than any modern horse. Even in zoos and game preserves, Przewalski horse have a reputation for being difficult to manage and almost impossible to train as mounts (though it has been done). Riding probably began only after horses had been domesticated and people were familiar with them as animals that could be controlled. It is likely that the original purpose for domesticating wild horses was simply to acquire a plentiful and relatively low-maintenance source of meat."

Once again, the problem with this premise is that the original Lehi group had already been exposed to the horse used as transportation. Once the group splintered into two extremely antagonistic groups, always attempting to extinguish or conquer the others, the proposition that either group would ignore the potential of the horse in that contest is highly unlikely. The advantage the horse, used as transportation, provides is immense.

"Horses almost certainly were first domesticated for use as food animals, like cattle or pigs, but it is as instruments of transport that they have made their impact on human history. Until the invention of the steam engine (and for a good many years after), there was no means of transport faster than a rider on horseback. Before the invention of firearms, well-trained cavalries repeatedly overwhelmed pedestrian military forces, recharting the course of ancient history at Issus and Adrianople, and on the barren plains of Asia. Horses changed the way people hunted and made war, altered concepts of distance, extended interregional trade, brought previously isolated cultures into contact, provided new standard of wealth, opened the world's grasslands to efficient human exploitation, and redefined the cultural identities of those societies that became equestrian. Horseback riding and horse-drawn chariots may have also played a role in the initial spread of the Indo-European languages, a language family that ultimately gave birth to English, French, Russian, Hindi, Persian, and many other tongues."

Horses Through Time, page 59.

And from page 3 of the same text:

"In the history of humankind there has never been an animal that has made a greater impact on societies than the horse. Other animals were hunted much more or domesticated earlier, but the horse changed the world in innumerable ways with its tremendous swiftness. While asses, camels, elephants, yaks, and other animals were ridden by people, the horse provided the first source of "rapid transit". Prior to horseback riding, most people traveled on foot, carrying all their cargo on their shoulders, or they were restricted to using boats along rivers and coastlines. Other animals were slow, limited in how much weight they could carry, or were more restricted in their geographic distribution. Horses were swift of foot, could easily support one or two human passengers, could carry heavy loads, and, like asses, could survive, if necessary, on very poor quality vegetation or fodder.

Because of the obvious advantage of ease of transport, horses expanded the range that people could travel from their homelands. This provided the means to widen trade circles and increase communication among diverse cultures. The advantages of trade expansion and diffusion of technological innovations from one group of people to the next through increased long distance travel were immeasurable.

The impact of horseback riding was not all positive, however. Along with domestication of the horse came a new way to move armies. The military advantage fell dramatically to those who were the quickest to gain access to and adopt the horse into their life-styles. This was as true in the New World as it was in Europe and Asia."

One of the arguments Book of Mormon scholars sometimes present to counter the claim that horses as a method of transportation would have transformed the history of ancient Mesoamerica is that the geography of Mesoamerica was simply incongruent with the use of the horse as transportation. That certainly may be true of some of the more mountainous regions of Mesoamerica, but the story of the Book of Mormon takes place over regions of Mesoamerica that were geographically diverse, and included areas that would have been quite conducive to the use of the horse as transport; and, in fact, after the Conquest, was shown to be conducive in actual history. In Sorenson's book [An Ancient American Setting for the Book of Mormon](#), page 247, he states:

"The city of Nephiah, founded at the same time as Moroni, plausibly is one of a cluster of sites of Late Preclassic date located by Sisson a few miles west of the Rio Seco frontier. The "plains" near Nephiah (Alma 62:18) would be part of the Chontalpa's extensive, anciently uncultivable, savanna grasslands. (Bernard Diaz described one of the earliest Spanish battles on the mainland just a little east of here. Thousands of native warriors waited to fight them on such a "plain", and this proved ideal terrain for the Spanish horses to maneuver.) Lehi, Morianton, and Moroni seem to have been satellites to Nephiah, the regional (market?) center (Alma 51:24; 59:5; 50:14). Those three were located nearer the coast than Nephiah. But Lehi

and Morianton must have been very near each other, for their people quarreled over agricultural land almost as soon as they settled the places, and the Morianton group ended up incorporated politically with Lehi (Alma 50:25-26, 36). Sites of the correct time period and adjacent to each other were located by Sisson coastward from our possible Nephihah and could represent remains of those two minor settlements.”

Two things are important about this passage: one is that Sorenson confirms that there were, indeed, sections of the Book of Mormon land very conducive to the use of horse as transportation; and two, it mentions another important fact – the connectedness of many ancient Mesoamerican settlements.

To extend upon the first point, the land of Oaxaca is noted by Sorenson to be the land of Moron. This is another area that would be highly conducive to horses as transport. In the book [Ancient Oaxaca](#), by Blanton, Feinman, Kowalewski and Nicholas, page 31, it is stated:

“The Valley of Oaxaca is the largest expanse of flat land (roughly 2,500 square kilometers) in Mexico’s rugged southern highlands.”



Valley of Oaxaca

Certainly such a wide expanse of flat land would have lent itself very well to the use of the horse. Moreover, note that we are now moving into Mexico as part of the Book of Mormon lands. Mexico was one of the areas that was the most conducive to the horse, post-Conquest. Again, from [Horse Through Time](#), page 99:

“During the late Pleistocene, it will be recalled from chapters 2 and 3, there were several species of wild equids living throughout North and South America. These all became extinct, along with many other herbivores and their predators, about 10,000 years ago. The causes of the extinctions are not fully understood, but they probably resulted from climatic change and perhaps overhunting by humans. Native Americans were, therefore, without the benefit of horses until European explorers appeared on the scene.

When the Spanish followers of Christopher Columbus arrived in the Americas after 1492, their most effective weapon against the native civilizations was their ability to move rapidly on horseback. The ships of all the voyages were loaded with horses, but so many died during the sea crossing that the part of the ocean between Spain and the Canary Islands was called the Golfo de Yeguas (Gulf of Mares) in later times. The part of the Atlantic just east of Mexico that is infamous for its ceaseless calms became known as the Horse Latitudes, possibly because so many horses died while the ships waited for the breeze to stir. Despite hazards at sea, by 1503 there were sixty to seventy horses on the island of Hispaniola.

The first region of North America to be colonized by the Spanish was the area around Mexico City, where there was good grazing for livestock.

Although at first horses were slow to breed, within a few years of 1550 there were said to be 10,000 horses in the area of Queretaro. These all were descended from a few domestic horses that had been released on the grasslands, but because they had no predators, their numbers rapidly increased. In South America as well, introduced horses soon began to breed in the wild. The city of Buenos Aires was first founded by Pedro de Mendoza in 1535, but he was forced to abandon the settlement because of a food shortage. He and his compatriots fled across water into Paraguay, leaving behind five mares and seven horses. From these, and presumably from additional horses lost by travelers, there was a great population explosion.

Three vast regions of the Americas provided grasslands suitable for expansion of the feral horse populations: the prairies that stretch north all the way from Mexico to Canada, the llanos (plains) of Venezuela and Colombia, and the pampas of Argentina and Uruguay.

Native Americans of both continents slowly began to recognize the value of the horse. They learned its management partly by trial and error and partly from the Spanish from whom they received horses through barter and raiding. By the beginning of the seventeenth century, members of many of the Plains people of North America had become highly skilled horsemen and their way of life had been transformed.

Before they obtained horses, the only forms of transport the peoples of North America had were the canoe, dugout, and dog sleigh or travois. The Plains people hunted bison by driving them on foot. Once they became horsemen, however, their hunting techniques and warfare assumed new patterns and rituals. The Blackfoot hunted bison either by a surround or in open chase. In the surround a large number of horsemen encircled a herd and milled around it, shooting down animals as they rode among them. The case involved a straight rush by mounted men, each of whom singled out an animal to shoot and then rode alongside it for the kill. A skilled hunter mounted on a trained horse could kill enough animals in a single morning to feed a family group of twenty as well as their dogs, with enough meat left over for drying. A successful equestrian hunter, therefore, had plenty of leisure time for caring for his horses, making weapons, and raiding enemy camps. Bison hunts were controlled by strict social rules. There were severe penalties for anyone who hunted bison before the appointed time. Among the Cheyenne there were only three recognized crimes: homicide,

disobeying the rules of the bison hunt, and repeated horse theft. For committing any of these the culprit was severely beaten."

Even if certain portions of the Book of Mormon lands were not conducive to the use of the horse as a method of transportation, other portions were. Moreover, given the well established trade and communication between what is now Mexico and the more southern portions of Mesoamerica that are specifically cited as good candidates for Book of Mormon locations, it seems highly unlikely that the horse would not have eventually made its way to those locations more conducive to the horse. Although the extensive trade and communications between all the areas of Mesoamerica is so well established as to be beyond dispute, I will offer some quotations that demonstrate this premise.

"Maya civilization developed as part of a broader and older cultural area called Mesoamerica. Mesoamerica encompassed much of Mexico and extended south, at times all the way into parts of Nicaragua and Costa Rica. The first pottery, the first cities, and even the first known instances of hieroglyphic writing had their origin in Mesoamerica in the millennium before the rise of the Maya civilization. Although the Maya region accounted for one-third of the territory, Mesoamerica included other important cultures, such as the Olmec and the Aztec, and Maya civilization developed through constant interaction with these other Mesoamerican cultures. All these cultures traded with each other and shared mythologies and a sacred calendar. Also, they all built massive cities and created exceptional art with an astonishingly limited technology: they had no wheel for pottery, no pack animals or carts for transport, and no metal tools until the last centuries before the Spanish Conquest – even then, the tools were only copper blades and fishing hooks, not bronze or steel hatchets."

The Handbook to Life in the Ancient Maya World, by Lynn V. Foster, page 5

"The setting of Maya civilization is the eastern portion of what archaeologists call "Mesoamerica". Geographically, Mesoamerica is simple enough to define. It covers most of what is today Mexico and the countries of Upper Central America: Guatemala, Belize, El Salvador, and western Honduras. Anthropologists and archaeologists use this designation to refer to a "culture area," a region of similar culture traits and features. For several millennia the various societies and civilizations of most of Mexico and Central America were in constant interaction through trade, migration, conquest, and other contacts. These interactions, as well as some common linguistic and ethnic origins, resulted in a sharing of many features across this vast and geographically diverse region."

Ancient Maya, The Rise and Fall of a Rainforest Civilization, by Arthur Demarest, p. 8

There is truly an abundance of information that verifies that the different regions of Mesoamerica were in constant contact. An entire book of essays deals with the contact between the Maya and Teotihuacan, [The Maya and Teotihuacan, Reinterpreting Early Classic Interaction](#), edited by Geoffrey E. Braswell, which is appropriate to my particular point: if horses were of little use in certain areas of Book of Mormon lands, the people were in constant contact with groups from other areas that had lands very conducive to the use of the horse, and it seems extraordinarily unlikely that these people would not have eventually made use of the horse in that fashion.

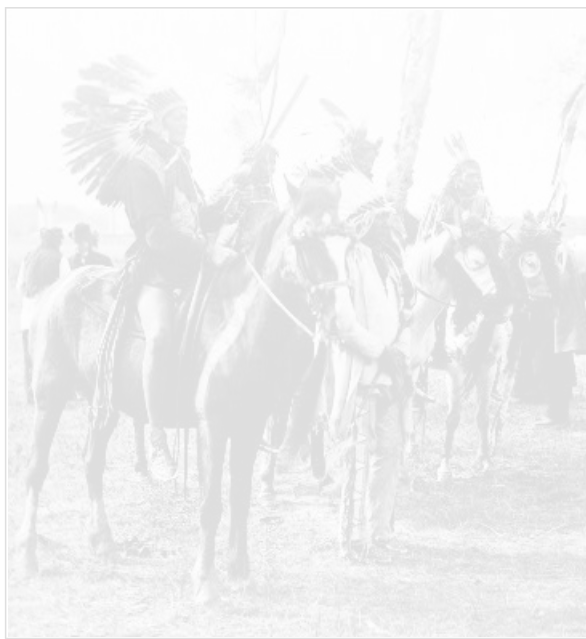
So I hope I've made two points clear by this point: one is that the original Lehi party all would have been very familiar with the horse used as transportation, and two, that portions of specified Book of Mormon lands were also conducive to the use of the horse as transportation, and these areas were also in constant contact with other regions that also would have been conducive to the horse. With the understanding of these two points, the impact that the horse has on civilization becomes undeniably pertinent in regards to this question.

"What impact did riding have on the lives of the Sredni Stog people (my insert, the speculated first people to ride horses) and other ancient Europeans? One way to answer this question is to look at the example of those American Indians who also lived in grassland environments, used a similar bone-and-stone tool technology, and acquired horses from Europeans under circumstances that permit close examination of the implications of riding. For them riding was a revolutionary innovation that completely reoriented many fundamental aspects of their lives. In both North and South America the former dominance of the farming tribes over hunting tribes was reversed within two generations after the hunters acquired horses. Religion, status, personal identity, warfare, economic productivity, commerce, and the boundaries of tribal territories all were redefined once riding began.

Horseback riders could move two to three times farther and faster than people on foot. Resources, enemies, allies, and markets that had previously been beyond effective reach suddenly became obtainable. Subsistence and economic survival in the dry grasslands, an uncertain and risky proposition for pedestrian hunters, became predictable and productive for mounted hunters. Sedentary horticultural villagers whose river-valley settlements had been the centers of population and economic productivity in the region became vulnerable to lightning-quick raids by enemies who could not be pursued or punished. Many of these villages were abandoned; and their occupants became mounted hunters in self-defense.

This, for example, was the case with the Plains Indians, including the Cheyenne, many of the Sioux, and the Arapaho. Warfare increased in intensity and social importance, both because horses became an easily stolen standard of wealth and because mounted societies redrew ethnic boundaries that had been based on pedestrian travel distances. Trade and exchange systems extended further, became socially more complex, and carried a higher volume of goods (including horses) than had been possible before. It is difficult to identify an aspect of Plains Indian Culture that was not affected by horseback riding. In North America this flurry of innovation went on for a century (from 1650 to 1750) without direct European interference, permitting a new type of native culture to evolve largely on its own terms."

Horses Through Time, page 80



The first advantage immediately noted in the New World was the advantage held by the Spaniards in their wartime strategies and battles. Although it is difficult to extricate the advantage of the horse from the other elements of technological superiority, which, ironically, includes other Book of Mormon anachronisms such as steel weapons and metal armor, it is still possible to see the importance of the horse in this overall picture. The Spaniards, themselves, were well aware of the advantage the horse gave them, and at times seemed to view the horses as essential as they, themselves, were. The following quotes from Jared Diamond's Guns, Germs, and Steel demonstrate this point.

"The tremendous advantage that the Spaniards gained from their horses leaps out of the eyewitness accounts. Horsemen could easily outride Indian sentries before the sentries had time to warn Indian troops behind them, and could ride down and kill Indians on foot. The shock of a horse's charge, its maneuverability, the speed of attack that it permitted, and the raised and protected fighting platform that it provided left foot soldiers nearly helpless in the open. Nor was the effect of horses due only to the terror that they inspired in soldiers fighting against them for the first time. By the time of the great Inca rebellion of 1536, the Incas had learned how best to defend themselves against cavalry, by ambushing and annihilating Spanish horsemen in narrow passes. But the Incas, like all other foot soldiers, were never able to defeat cavalry in the open. When Quizo Yupanqui, the best general of the Inca emperor Manco, who succeeded Atahualpa, besieged the Spaniards in Lima in 1536 and tried to storm the city, two squadrons of Spanish cavalry charged a much larger Indian force on flat ground, killed Quizo and all of his commanders in the first charge, and routed his army. A similar cavalry charge of 26 horsemen routed the best troops of Emperor Manco himself, as he was besieging the Spaniards in Cuzco.

The transformation of warfare by horses began with their domestication around 4000 BC, in the steppes north of the Black Sea. Horses permitted people possessing them to cover far greater distances than was possible on foot, to attack by surprise, and to flee before a superior defending force could be gathered. Their role at Cajamarca thus exemplifies a military weapon that remained potent for 6,000 years, until the early 20th century, and that was eventually applied on all the continents. Not until the First World War did the military dominance of cavalry finally end. When we consider the advantages that Spaniards derived from horses, steel weapons, and armor against foot soldiers without metal, it should no longer surprise us that Spaniards consistently won battles against enormous odds." (page 76)

"Today, it is hard for us to grasp the enormous numerical odds against which the Spaniards' military equipment prevailed. At the battle of Cajamarca recounted above, 168 Spaniards crushed a Native American army 500 times more numerous, killing thousands of natives while not losing a single Spaniard. Time and again, accounts of Pizarro's subsequent battles with the Incas, Cortes's conquest of the Aztecs, and other early European campaigns against Native Americans describe encounters in which a few dozen European horsemen routed thousands of Indians with great slaughter. During Pizarro's march from Cajamarca to the Inca capital of Cuzco after Atahualpa's death, there were four such battles: at Jauja, Vilcashuánman, Vilcaonga, and Cuzco. Those four battles involved a mere 80, 30, 110, and 40 Spanish horsemen, respectively, in each case ranged against thousands or tens of thousands of Indians.

Those Spanish victories cannot be written off as due merely to the help of Native American allies, to the psychological novelty of Spanish weapons and horses, or (as is often claimed) to the Incas' mistaking Spaniards for their returning god Viracocha. The initial successes of both Pizarro and Cortes did attract native allies. However, many of them would not have become allies if they had not already been persuaded, by earlier devastating successes of unassisted Spaniards, that resistance was futile and that they should side with the likely winners. The novelty of horses, steel weapons, and guns undoubtedly paralyzed the Incas at Cajamarca, but the battles after Cajamarca were fought against determined resistance by Inca armies that had already seen Spanish weapons and horses. Within a half dozen years of the initial conquest, Incas mounted two desperate, large scale, well-prepared rebellions against the Spaniards. All those efforts failed because of the Spaniards' far superior armament." (page 75)

And from Horses Through Time, page 85:

"It is hard for us today to comprehend the enormous importance of the horse in the development of nearly all the great civilizations of the world. Before the invention of mechanical power, draft animals were the only source of transport and haulage, other than people themselves. Because of its great speed and resilience, the horse became the invaluable partner of the traveler, soldier, and invader. Without the horse Alexander the Great and Genghis Khan could not have made their Asian conquests. There could have been no European Crusades to the Holy Land, and the Spanish followers of Columbus could not have destroyed the civilizations of the Aztecs and the Incas in the Americas."

The military advantage of the horse is clear, as demonstrated in these quotes. However, this is just one element of many in regards to the impact of the horse on social evolution, although some of these elements are intrinsically tied to the military advantage of the horse. When one group of people has the advantage of the horse, that group spreads their memes, including, for example, their language. The horse expands the trade region, as well, and opens up many other opportunities due to the ability of the horse to transport cargo.

"In the history of humankind there has never been an animal that has made a greater impact on societies than the horse. Other animals were hunted much more or domesticated earlier, but the horse changed the world in innumerable ways with its tremendous swiftness. While asses, camels, elephants, yaks, and other animals were ridden by people, the horse provided the first source of "rapid transit". Prior to horseback riding, most people traveled on foot, carrying all their cargo on their shoulders, or they were restricted to using boats along rivers and coastlines. Other animals were slow, limited in how much weight they could carry, or were more restricted in their geographic distribution. Horses were swift of foot, could easily support one or two human passengers, could carry heavy loads, and, like asses, could survive, if necessary, on very poor quality vegetation or fodder.

Because of the obvious advantage of ease of transport, horses expanded the range that people could travel from their homelands. This provided the means to widen trade circles and increase communication among diverse cultures. The advantages of trade expansion and diffusion of technological innovations from one group of people to the next through increased long distance travel were immeasurable.

The impact of horseback riding was not all positive, however. Along with domestication of the horse came a new way to move armies. The military advantage fell dramatically to those who were the quickest to gain access to and adopt the horse into their life-styles. This was as true in the New World as it was in Europe and Asia."

Horses Through Time, page 3

One of the groups specifically noted to have had horses was the Jaredite culture. Sorenson dates the Jaredite culture beginning at 3000 B.C. In [An Ancient American Setting for the Book of Mormon](#), page 116, he states:

"First, let us spell out the origin of the Jaredites in historical and cultural terms. When did the Jaredites originate as a people? Historical texts and archaeological research on Mesopotamia, their homeland, tells us that big pyramid-shaped temple platforms called ziggurats were being erected well before 3000 B.C. Nothing but one of them qualifies as "the great tower" referred to in Ether 1:33. If the departure of the Jaredite party from their original home had been many centuries later than 3000 B.C. or earlier than about 3300 B.C., their account about "the great tower" would sound odd in terms of Near Eastern history. (Incidentally, the zero date from which the Mesoamerican calendars were calculated was 3113 B.C., which might or might not be a coincidence.) We have already seen that the earliest evidences of some of the basic indicators of civilization – stable agriculture, village life, and ceramics – date in Mesoamerica to about 3000 B.C.

There is no sound evidence, by the way, to support the idea from outmoded biblical commentaries that the great tower ("of Babel") dated to near 2200 B.C., as some Latter-day Saints continue to believe. Indeed, contrary data abound."

This early date is quite problematic in terms of Mesoamerican history. The Olmec culture, the only culture that achieved the necessary level of social stratification to qualify as either the Jaredite culture or the culture in which the Jaredites participated, did not achieve that level of social stratification until much later. If we accept Sorenson's dating and argument, the case is already closed. San Lorenzo, the city Sorenson cites as Lib, is the earliest Olmec city to achieve the necessary social stratification. Richard Diehl, in his book [The Olmecs, America's First Civilization](#), page 29, states:

"San Lorenzo emerged as Mesoamerica's first city, and perhaps the oldest urban center anywhere in the Americas, by 900 B.C. By then it covered 500 ha (1,235 acres), had several thousand permanent residents, and exhibited the full range of urban characteristics outlined by Christine Niederberger: political and religious power, social ranking, planned public architecture, highly skilled craftspeople, control of interregional trade networks, and complex intellectual achievements. Today it is clear that the Olmec capitals at San Lorenzo and La Venta were what William T. Sanders and David Webster define as Regal-Ritual Cities: urban centers that have highly developed ritual functions but fairly modest populations, relatively weak, decentralized rulership, and limited economic functions. Regal-Ritual Cities were common later in Mesoamerican societies, where only Teotihuacan, Tula, and Tenochtitlan and a few other mega-centers advanced beyond this stage."

As Sorenson's book is decades old, it is possible that he did not have access to the level of detail we currently do regarding the Olmec civilization, and hence, believed the early date was viable. However, other Book of Mormon scholars, like Brant Gardner, adamantly reject the early dating, and seems to be more comfortable with a date around 1500 BC. ([Brant Gardner](#)) This at least puts us within the range of the social stratification of San Lorenzo, so I will accept his dating without further criticism.

So, accepting the later date for the Jaredite culture, we have a culture that possessed the horse from the possible very inception of the concept of an urban center in the New World. Given the advantage of the horse as explained above, it seems reasonable to conclude that this people would have spread their language, at the very least, far and wide. Yet there is nothing in the evolution of languages in the New World to even hint at such a possibility.

From [Guns, Germs, and Steel](#), page 368:

"These language replacements in East Asia remind us of the spread of European languages, especially English and Spanish, into the New World, formerly home to a thousand or more Native American languages. We know from our recent history that English did not come to replace US Indian languages merely because English sounded musical to Indians' ears. Instead, the replacement entailed English-speaking immigrants' killing most Indians by war, murder, and introduced diseases, and the surviving Indians' being pressured into adopting English, the new majority language. The immediate causes of that language replacement were the advantages in technology and political organization, stemming ultimately from the advantage of an early rise of food production, that invading Europeans held over Native Americans.

With the exception of the Eskimo-Aleut language family of the American Arctic and the Na-Dene language family of Alaska, northwestern Canada, and

the US Southwest, the Americas lack examples of large-scale language expansions widely accepted by linguists. Most linguists specializing in Native American languages do not discern large, clear-cut groupings other than Eskimo-Aleut and Na-Dene. At most, they consider the evidence sufficient only to group other Native American languages (variously estimated to number from 600 to 2,000) into a hundred or more language groups or isolated languages. A controversial minority view is that of the linguist Joseph Greenberg, who groups all Native American languages other than Eskimo-Aleut and Na-Dene languages into a single large family, termed Amerind, with about a dozen subfamilies.

Some of Greenberg's subfamilies, and some groupings recognized by more traditional linguists, may turn out to be the legacies of New World population expansions driven in part by food production. These legacies may include the Uto-Aztecan languages of New World population expansions driven in part by food production. These legacies may include the Uto-Aztecan languages of Mesoamerica and the western United States, the Oto-Manguean languages of Mesoamerica, the Natchez-Muskogean languages of the US Southeast, and the Arawak languages of the West Indies. But the difficulties that linguists have in agreeing on groupings of Native American languages reflect the difficulties that complex Native American societies themselves faced in expanding within the New World. Had any food producing Native American peoples succeeded in spreading far with their crops and livestock and rapidly replacing hunter-gatherers over a large area, they would have left legacies of easily recognized language families, as in Eurasia, and the relationships of Native American languages would not be so controversial.

Of all the hundreds of Native American languages originally spoken in North America, all except 187 are no longer spoken at all, and 149 of these last 187 are moribund in the sense that they are being spoken only by old people and no longer learned by children."

So, again we are left with a problematic proposal: *if the horse existed in Mesoamerica since Jaredite times, then it left no trace of the sort of social evolutionary impact that we see in other cultures that possessed the horse.*

Given how unlikely these propositions are, some Book of Mormon scholars have proposed that the actual horse did not exist during the Book of Mormon period, but that Joseph, or perhaps Nephi, named an unknown animal "horse", and we are left with that translation artifact. There have been two main animals suggested as the "horse", or animal X: the deer or tapir. The deer argument is flawed from the outset, due to the fact that each "namer" involved, whether it was Joseph, Nephi, or the Jaredites, were familiar with both the deer and the horse. The deer is mentioned many times in the Old Testament and deer were present in ancient Israel during the given time periods. The misnaming suggested by Book of Mormon scholars occurs when one animal is an unknown. Therefore, I suggest that the "deer" argument does not even merit further discussion.

The tapir is a more interesting possibility, due to the fact that it is, indeed, related to the horse. So if we accept that the "namer" chose to call it a "horse" without any qualifiers, such as "horse that man does not ride", or "strange looking solitary horse", or "horse with a snout", then we must analyze the context in which the animal is cited in the Book of Mormon to see if the tapir could fulfill that context.

First, for reference, there are two articles that discuss the tapir as the "horse" on the FARMS website, the aforementioned "Horses in the Book of Mormon" and "Unanswered Mormon Scholars". One source in particular is cited in each article, although "Unanswered Mormon Scholars" does not provide a full reference. The source is article written by Fradich and Thenius called Tapirs in the old series Grzimek's Animal Life Encyclopedia, Volume 13, Mammals IV, page 29. Both articles make mention of the noted similarities between the horse and the tapir, as well as noting that a tapir can be domesticated if captured young, and that in Brazil some farmers used them to pull ploughs. I was fascinated by these claims, particularly the latter, since none of the information I found about tapirs on the Internet seemed to support the idea of a tapir being used as a domesticated draft animal. In fact, the information I read seemed to contradict the idea for two main reasons. One is that the tapir is not a herd animal, and second is that the tapir is a shy animal that can demonstrate extreme behavior under captivity. Note that the particular tapir in question would be the Tapirus Bairdi, Baird's tapir, although there are more similarities than differences between the different species.

The following information is obtained from the aforementioned article in Grzimek's Encyclopedia, which begins on page 17.

"The first discoverers of America, Columbus, Pinzon, and Cabral, probably had not yet encountered the tapirs. However, towards the end of the year 1500, Peitro Martyr described an animal "of the size of an ox", of the color of cattle, which has "an elephant's trunk and hooves like a horse," but which, after all, is neither cattle, nor elephant, nor horse. The later explorers of America soon became familiar with the lowland tapir, although initially they did not know to which group of animals he actually belonged....

At first glance, the tapirs' movements also are not similar to those of their relatives, the rhinoceros and the horses. In a slow walk, they usually keep the head lowered. In a trot, they lift their heads and move their legs in an elastic manner. The amazingly fast gallop is seen only when the animals are in flight, playing, or when they are extremely excited. The tapirs can also climb quite well, even though one would not expect this because of their bulky figure. Even steep slopes do not present obstacles. They jump vertical fences or walls, rising on their hindlegs and leaping up. Some zoo people have found that they are able to squeeze themselves through unbelievably narrow gaps or between bars, or that they "sneak" out under lower bars with their backs arched. These abilities are of advantage in the wild when they wander through jungles of bamboo and reed...

The tapirs prefer to stay in the vicinity of water. They are excellent swimmers and cross even wide streams without great effort. In order to feed on aquatic plants or to escape when pursued, they also are able to dive quite well...

All species of tapir are similar in their habits. They are unsocial, cautious creatures of the forest, who avoid open territory and depend on the vicinity of water. In denser populated areas of human settlements, the South American lowland tapirs are considered to be strictly nocturnal animals, according to Hans Krieg. One hardly ever sees them unless they are routed out of their hiding places by dogs. "In places with few people," Krieg continues, "it is possible to see tapirs at any time, except for the hottest time around noon; most likely, however, one can see them in the morning and in the evening. But these encounters were not at all commonplace, even though, with some knowledge of the area, one could expect to see them at certain places at a certain time."

Water plays such an important part in the habitat of all tapirs that they really should have a pool in their zoo pens. A substitute in zoos may be an occasional shower with a hose. The animals frequently extend their daily bath during the hottest time of the day; not only does this cool off the animals, but it also protects them from biting insects and other parasites of the skin. It is easy to recognize a tapir's wallow, not only by the characteristic three-toed footprints but also by the feces which are frequently found in the surroundings. Hans Krieg often saw manure scattered on the ground of the forest and floating on the water. Whenever possible, the tapirs defecate into the water or in the immediate vicinity of a water hole or water container. Wolfgang von Richter assumes that the vagus nerve (which also affects the digestive system) is stimulated as soon as the animals come into contact with water...

When highly excited, tapirs will spray their urine about diffusely. For example, in the Frankfurt Zoo a male tapir was forced out of his warm stable into the cold winter air. At first he resisted all attempts to make him leave his quarters. Eventually, he stood on the threshold and smelled the cold air, and then suddenly he sprayed backward. The keeper, who was gently trying to push him outside, was sprayed full force with urine.

Except in the mating season, tapirs in the wild are usually unsociable loners. One hardly ever sees more than three animals together. Keeping them in pairs or even in family groups the year round, as is usually done in zoological gardens, is basically unbiological. In spite of this fact, they usually get along well with one another, even in relatively small enclosures, or better, they coexist beside each other. They pay hardly any attention to their pen mates. Serious squabbles occur as rarely as does playing together. There also seem to be no rank order within the group.

In all places in their South American habitat where the land is being cultivated, the number of tapirs decreases steadily. The South American Indians kill them for their skin, their meat, or both. They use poisoned arrows and occasionally chase them with dogs. When pursued, the animals plunge into the water. Then they will be killed from a boat with spears and knives. However, the tapir population is not really endangered by the hunting Indians. Furthermore, some Indian tribes prohibit the killing of tapirs for religious reasons. Their main enemies are the white or half-white settlers who in most cases kill these harmless vegetarians "just for the fun of it". In the villages, one often finds young orphan tapirs whose mothers have been killed. They become as tame as dogs within a few days. They like to be petted and even let the children ride on their backs. In spite of these characteristics, which are suitable for domestication, there have been few attempts to actually domesticate tapirs. According to several reports, only in the last century have the German-Brazilian settlers in Santa Caterina occasionally tamed tapirs. On remote farms, they have even used them to pull their ploughs.

So far, only very few Central American tapirs have been kept in zoological gardens. By chance, an occasional animal may come into one of the smaller Central American zoos. This large tapir probably does as well in captivity as the lowland tapir and may, according to L. S. Crandall, reach a similarly old age. In the New York zoo a male lived for fourteen years; in Chicago a female reached approximately twenty-seven years. In 1967 each of the zoos in Philadelphia and San Francisco had one female Central American tapir. So far, reproduction occurred only in a few individual cases."



The section which refers to the farmers using them to pull ploughs has been cited as support for the possibility that the tapir was the Book of Mormon "horse", yet the sentence specifically states that there have been few attempts to domesticate tapirs, and it's only in the last century some Brazilian farmers attempted to do so. This was completely omitted from the FARMS article, which I find misleading. If human beings who have lived in the same areas as tapirs for centuries rarely domesticate them, this tells us something about their suitability for domestication. One difficulty, particularly in keeping them in groups, has to do with the fact that they do not have a rank order, or, in other words, they are not a herd animal. Jared Diamond, in Guns, Germs, and Steel discusses the domestication of animals in various cultures, as well as the fallacious idea that some cultures may not have domesticated animals that could have been domesticated for cultural reasons, as some have suggested in regards to the "horse" in Mesoamerica.

From page 163

"Particularly surprising is the large numbers of species of African and American mammals that were never domesticated, despite their having Eurasian close relatives or counterparts that were domesticated. Why were Eurasia's horses domesticated, but not Africa's zebras? Why Eurasia's pigs, but not American peccaries or Africa's three species of true wild pigs? Why Eurasia's five species of wild cattle (aurochs, water buffalo, yak, gaur, banteng), but not the African buffalo or American bison? Why the Asian mouflon sheep (ancestors of our domestic sheep), but not North American bighorn sheep?"

Did all those peoples of Africa, the Americas, and Australia, despite their enormous diversity, nonetheless share some cultural obstacles to domestication not shared with Eurasian peoples? For example, did Africa's abundance of big wild mammals, available to kill by hunting, make it superfluous for Africans to go to the trouble of tending domestic stock?"

The answer to that question is unequivocal: No! The interpretation is refuted by five types of evidence: rapid acceptance of European domesticates by non-European peoples, the universal human penchant for keeping pets, the rapid domestication of the Ancient Fourteen, the repeated independent domestications of some of them, and the limited successes of modern efforts at further domestication."

Diamond then cites examples of how quickly and successfully non-European peoples adopted European domesticates, including Native Americans and

the horse.

“Surely, if some local wild mammal species of those continents had been domesticable, some Australian, American, and African peoples would have domesticated them and gained great advantage from them, just as they benefited from the Eurasian domestic animals that they immediately adopted when they became available. For instance, consider all the peoples of sub-Saharan Africa living within the range of wild zebras and buffalo. Why wasn’t there at least one African hunter-gatherer tribe that domesticated those zebras and buffalo and thereby gained sway over other Africans, without having to wait the arrival of Eurasian horses and cattle? All these facts indicate that the explanation for the lack of native mammal domestication outside Eurasia lay with the locally available wild mammals themselves, not with the local peoples.” (page 164)

We could very well substitute the words “tapir” and “Mesoamericans” for “zebras” and “African” in the preceding paragraph. If tapirs were able to be domesticated and used in a manner that could be labeled “useful for man”, then they would have been by the native people, not just by a small group of foreigners from the Old World. Yet, outside of a few isolated attempts, they have not been. The reason for that lies not in the people, but in the animal itself.

Diamond continues:

“A second type of evidence for the same interpretation comes from pets. Keeping wild animals as pets, and taming them, constitute an initial stage in domestication. But pets have been reported from virtually all traditional human societies on all continents. The variety of wild animals thus tamed is far greater than the variety eventually domesticated, and includes some species we would scarcely have imagined as pets.”

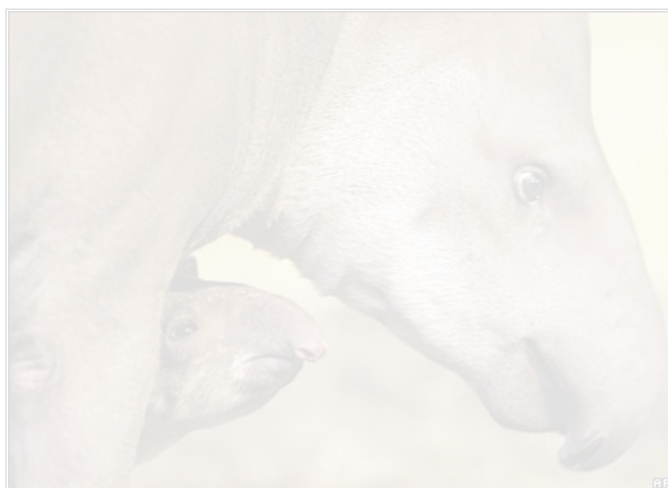
He then shares specific unusual pets, such as kangaroos, possums, cassowaries, eagles, cheetahs, gazelles, hartebeests, cranes, giraffes, and the brown bear. He comments:

“Over a century ago, the British scientist Francis Galton summarized this discrepancy succinctly: “It would appear that every wild animal has had its chance at being domesticated, that [a] few... were domesticated long ago, but that the large remainder, who failed sometimes in only one small particular, are destined to perpetual wildness.” (page 165)

Diamond shares even more evidence that only certain species are suitable for domestication. All big animal species suitable for domestication at all were domesticated within the first few thousand years of the sedentary farming-herding societies’ development. Also, DNA evidence shows that big mammals sub species that were domesticated in different parts of the world diverged from the same population. Also, modern efforts to domesticate big mammals that were not already domesticated have largely failed. Hence, it is some quality of the animal itself that lends to domestication, and not the particular peoples. Diamond isolates six groups of reasons for failed domestication.

1. **Diet – mammalian carnivores are not domesticated for food due to the inefficiency of the conversion of food biomass into the consumer’s biomass.**
2. **Growth Rate – domesticates must grow quickly**
3. **Problems of Captive Breeding – some mammals simply do not breed in captivity**
4. **Nasty Disposition – tendency to kill humans disqualify large mammals**
5. **Tendency to Panic – some species are more nervous, fast, and programmed for instant flight than others and cannot be herded**
6. **Social Structure – almost all species of domesticated large mammals had wild ancestors who: lived in herds, maintained a well-developed hierarchy among herd members, and the herds occupy overlapping home ranges. This is the ideal structure for domestication, in which the human takes over as the dominant leader.**

Upon consideration of the tapir, it seems that two, and possibly three, characteristics disqualify it for domestication. They have a tendency to panic, and sometimes engage in unacceptable behavior when panicked (witness the urine incident cited above, and some tapirs have attacked humans when panicked). They do not have the herd structure, and they probably have difficulties breeding in captivity.



The sole remaining possibility for Book of Mormon scholars is to insist that the “horse”, or animal X, was not domesticated in the Book of Mormon. To analyze that claim, let’s return to a couple of specific passages.

“3 Ne. 3:22 And it came to pass in the seventeenth year, in the latter end of the year, the proclamation of Lachoneus had gone forth throughout all the

face of the land, and they had taken their horses, and their chariots, and their cattle, and all their flocks, and their herds, and their grain, and all their substance, and did march forth by thousands and by tens of thousands, until they had all gone forth to the place which had been appointed that they should gather themselves together, to defend themselves against their enemies.

And the land which was appointed was the land of Zarahemla and the land Bountiful, yea, to the line which was between the land Bountiful and the land of Desolation.

And there were a great many thousand people who were called Nephites, who did gather themselves together in this land.”

“3 Ne. 4:4 Therefore, there was no chance for the robbers to plunder and to obtain food, save it were to come up in open battle against the Nephites; and the Nephites being in one body, and having so great a number, and having reserved for themselves provisions, and horses and cattle, and flocks of every kind, that they might subsist for the space of seven years, in the which time they did hope to destroy the robbers from off the face of the land; and thus the eighteenth year did pass away.”

First, this passage seems to contradict the assertion of some Book of Mormon scholars who claim that only elite had “horses”. Second, this is a mass movement of a very large group of people (even factoring in the possible population exaggeration) in one direction. How were all these animals moved in one direction? Herding is the most likely answer. It is true that some Native Americans moved groups of deer by strategic hunting, but that would hardly work in this circumstance of such a significant group marching together with all their various animals. Third, the animals were kept in close proximity for years after arriving at the destination. Fourth, the horse is once again mentioned in close proximity to the chariot, which is used in the context of travel.

“Alma 18:9 And they said unto him: Behold, he is feeding thy horses. Now the king had commanded his servants, previous to the time of the watering of their flocks, that they should prepare his horses and chariots, and conduct him forth to the land of Nephi; for there had been a great feast appointed at the land of Nephi, by the father of Lamoni, who was king over all the land.

Alma 18:10 Now when king Lamoni heard that Ammon was preparing his horses and his chariots he was more astonished, because of the faithfulness of Ammon, saying: Surely there has not been any servant among all my servants that has been so faithful as this man; for even he doth remember all my commandments to execute them.

Alma 18:12 And it came to pass that when Ammon had made ready the horses and the chariots for the king and his servants, he went in unto the king, and he saw that the countenance of the king was changed; therefore he was about to return out of his presence.

Alma 20:6 Now when Lamoni had heard this he caused that his servants should make ready his horses and his chariots.”

These verses demonstrate the firm connection of horses to chariots and transportation. This scenario does not fit within the context of a pet being taught a “trick”, like the tapir pulling plough, but rather an animal that was consistently used for a specific purpose.

“Ether 9:19 And they also had horses, and asses, and there were elephants and cureloms and cumoms; all of which were useful unto man, and more especially the elephants and cureloms and cumoms.”

“All of which were useful unto man” indicates a domesticated animal used for a specific purpose, not a trained pet. So we are left with this proposition: if the Book of Mormon “horse” is really a tapir, then tapirs were domesticated only by one small group of people, never to be replicated by anyone else, despite sharing characteristics that disqualify large mammals from domestication.

These passages also demonstrate another difficulty I have not yet addressed, which is that the horse is not the sole animal X that requires a Central American counterpart. Most notable cattle, asses, and oxen also require a potential candidate. Very few suggest potential candidates offered other than the deer or tapir – for good reason, they are the only candidates that can be considered at all, out of native Central American large mammals. The deer has already been eliminated for “horse” and could be eliminated for cattle, asses, and oxen for the same reason. All the “namers” were familiar with all of these animals. So are we to assume that the “namer” was using a variety of names all to describe “tapir”? If so, the text can only be described as nonsense.

To summarize this section, here are the “if...then” questions that need to be evaluated in context.

if the horse did exist in Mesoamerica during Book of Mormon times, then not a single bone or tooth from any of these horses has ever been discovered, despite the fact that the remains of an abundance of other animals have been discovered in Mesoamerica

if horses existed in ancient Mesoamerica during the Book of Mormon time period, then despite the fact that ancient Mesoamericans depicted many animals in art and ideology, they never depicted a horse or included the horse in any of their mythology

if the horse existed in Mesoamerica since Jaredite times, then it left no trace of the sort of social evolutionary impact that we see in other cultures that possessed the horse

if the Book of Mormon “horse” is really a tapir, then tapirs were domesticated only by one small group of people, never to be replicated by anyone else, despite sharing characteristics that disqualify large mammals from domestication

It is clear to me that each of these proposals is highly unlikely, and fails to fit within the context of not only what we know about ancient Mesoamerica, but what we know about the history of other peoples in other parts of the world, as well.

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who lived on the American continent from approximately 2200 BC to AD 421. It was first published in March 1830 by Joseph Smith as The Book of Mormon: An Account Written by the Hand of Mormon upon Plates Taken from the Plates of Nephi. The Book of Mormon is the earliest of the unique writings of the Latter Day Saint movement, the denominations of FairMormon Answers Wiki Table of Contents. Summary: Theories related to a Mesoamerican geography model. The "three days of darkness" in the New World following Christ's death. Summary: The three days of darkness is consistent with a period of intense volcanism. This explanation of the darkness has been particularly popular among those who advocate a limited geographical model of the Book of Mormon. Most LGT models place Book of Mormon lands in central America; this area is well-known for active