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Horses and Asses in the Book of Mormon

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Abstract: Miller discusses the current debate over the extinction date of the Pleistocene horse, *Equus*. While mentioning that the Book of Mormon has garnered more criticism over its mention of the horse than perhaps any other animal in its pages, he states, "It seems clear, at least to me, that the horses and asses, as well as the other animals listed in the Book of Mormon, were actually in America at the time they were said to be here."

12

Horses and Asses in the Book of Mormon

The statement in Ether 9:19 "And they also had horses, and asses ..." has caused a good deal of discussion. From what little that was recorded about animals in the Book of Ether, there is insufficient information to determine which types were brought over in "barges" to America, and which were already here when the Jaredites arrived. Obviously some were taken over by them as it's stated that they took "... food for their flocks and herds, and whatsoever beast [mammal] or animal or fowl that they should carry with them –" (Ether 6:4). The Nephites, though, found horses and asses (as well as other animals) already in the promised land upon their arrival (1 Nephi 18:25).

Even if the Jaredites did not bring these very closely related animals with them (the horse and ass), their presence can readily be explained. In the following discussion the horse and ass will be treated as one entity most of the time as they are two species belonging to the same genus, *Equus*.[8] It might be well here, though, to give some clarification relating to these two animals. An ass is also commonly called a donkey or burro.

Technically the ass is a larger animal than the donkey or burro. I rode on one while doing some field work in Mexico, being somewhat surprised at how big an animal it is. I'd ridden on horses (not ponies) that were no larger. Both the horse and ass existed as native animals in North America long before man came upon the scene. Of course all forms living here now have long since been

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[8] Some of the fossils of smaller Pleistocene horses and asses are very difficult to distinguish from each other, especially if there are no teeth present.

domesticated. In other parts of the world the genus *Equus* is present as various kinds of zebras, as the Asian wild horse, and as varieties of the domestic horse. The mule is a hybrid animal, the result of crossing a male ass with a female horse. The mule's large size results from the large size of both the ass and the horse.

I think that more than any other animal mentioned in the Book of Mormon, the horse has generated the most debate. Critics have argued from its first printing up to the present time, that the Book of Mormon cannot be true because it states horses were in America prior to the time of Columbus. Spaniards reintroduced horses to America starting with Columbus' second voyage in 1493.

The term "reintroduced" is used, because horse fossils in America clearly show that they were here many millions of years before they were brought over by Columbus! According to paleontologist Bruce J. MacFadden, an expert on fossil horses, "Horses existed continuously in North America for about 58 million years ..." (1992, p. 304). This animal has changed dramatically, though, from the earliest forms to the present-day horse (Figure 17).

One of the best fossil records of any animal, especially in North America, is that of the horse. It is actually much better represented by its fossils than either the mastodon or mammoth. Native horses occurred in the New World from Alaska to the tip of South America. I have personally collected hundreds of their fossils, and from different ages. Most of these came from the southwestern United States and from Mexico.

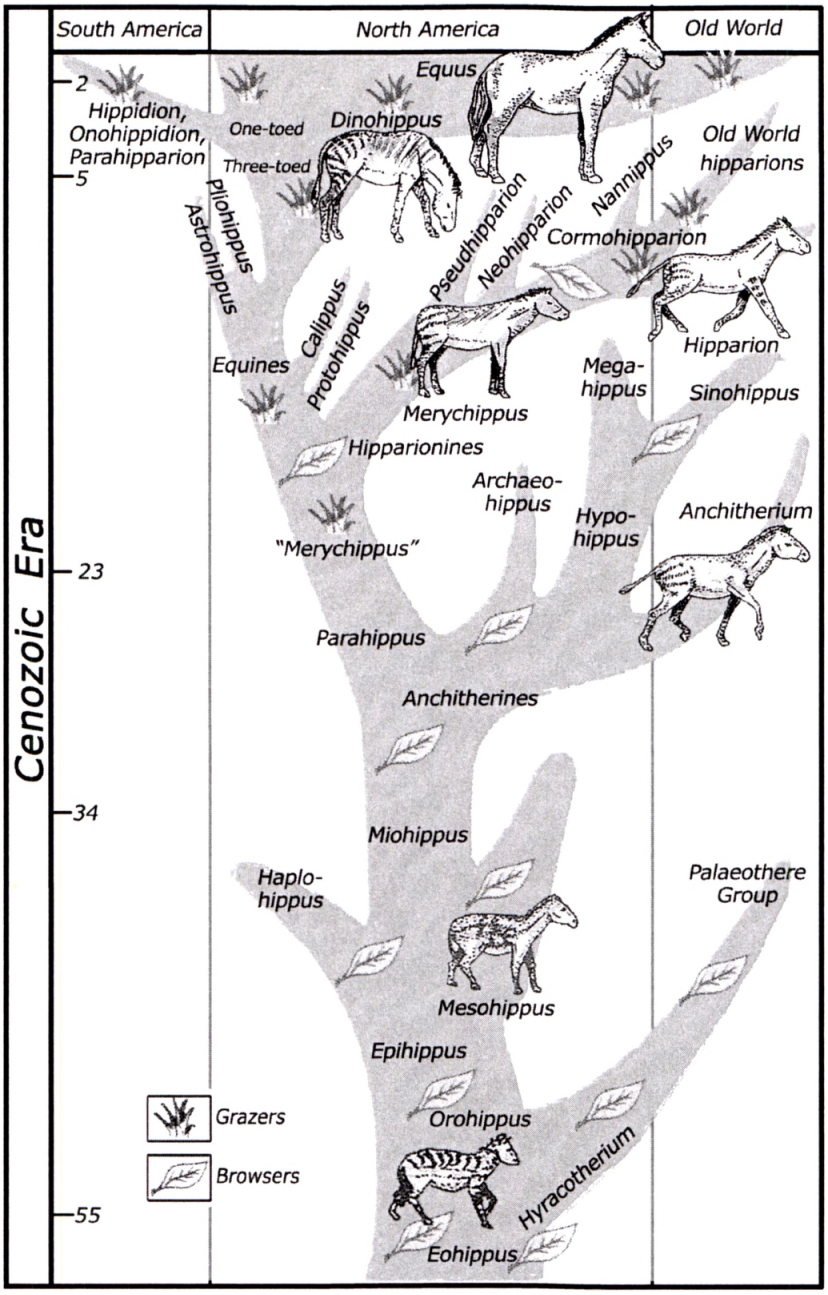

Figure 17. Chart showing a simplified family tree (phylogeny) of the horse, which had its origins in North America approximately 58 million years ago with the genus *Eohippus*. The modern genus of horse, *Equus*, has been known from fossils since before the Pleistocene epoch. It was extremely numerous throughout all North America until the end of that epoch. Obviously this was a useful beast for both Jaredites and Nephites. ***(Adapted from Prothero and Dott, 2002, "Evolution of the Earth.")***

One of the most exciting discoveries I have had, which was in conjunction with Mexican colleagues, was in finding horse fossils that are transitional between the modern genus, *Equus*, and its immediate ancestor, *Dinohippus* (Miller and Carranza-Castañeda, 2001, p. 240). Even after careful study we could not be sure into which genus we should place some of our specimens. More fossils of this horse will be needed to help in a determination. This means that the modern horse apparently had its origin in Mexico. From there it spread to other parts of the world where it exists today in various forms - both wild and domestic.

During the Pleistocene epoch there were many species of horses and a few of asses. It is accepted by all paleontologists that these animals existed in North America until the end of this time, 10,000 to 12,000 years ago (Figure 18). Along with other Ice Age mammals listed above, evidences demonstrate that both the horse and ass survived for an appreciable time later. Some paleontologists are reluctant to accept this, though.

It's hard to change old ideas once they become ingrained. However, more and more paleontologists, as well as archaeologists, do accept some younger ages for the last native horses in America. A number of Carbon-14 dates on horse fossils, especially in the United States, show ages extending well past the close of the Pleistocene.

Ages obtained from a variety of locations are as follows (these are all in years before the present): 8,240 (Mead and Meltzer, 1984, p. 446); 7,000; 8,000 (Hester, 1960, p. 70); 6,160 (Marcus and Berger, 1984, p. 171); ~5,000 (Martin and Webb, 1974, p. 144); 3,800 (Schmidt, 1988, p. 253). A date of 2,167 B.C. was obtained based on horse bones from the northern part of the Yucatan Peninsula according to John L. Sorenson (Pers. Comm.).

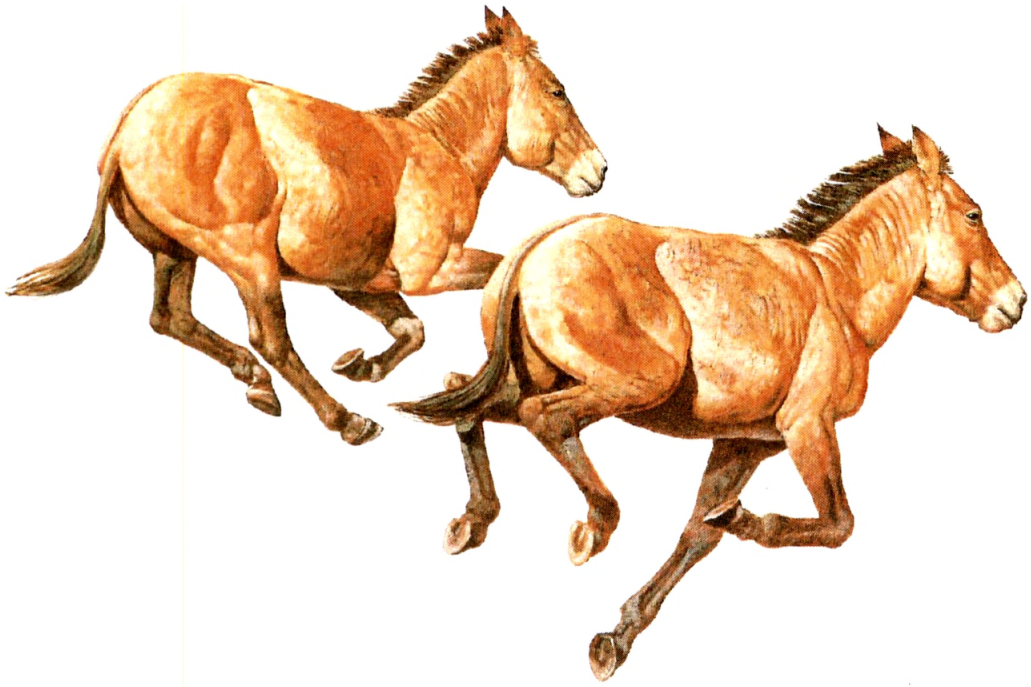

Figure 18. Depiction of the Pleistocene horse, *Equus*, that was typical of those in North and Central America. Their fossils are among the most numerous of large mammals from this time. As indicated in both the Jaredite and Nephite records, the horse (and the ass) were useful to these peoples. Whether the horse and ass were found in the New World by the Jaredites, or brought over by them, is uncertain. Either scenario is possible. (The Nephites found these animals already here in the wilderness when they arrived). *(Figure by courtesy of the George C. Page Museum in southern California. John Dawson, artist. From Harris and Jefferson, 1985, "Treasures of the Tar Pits.")*

There is no question that by the close of the Pleistocene that the several species of horses and asses in the New World were dying out along with many other large mammals, based on the dwindling numbers of their fossils. Why? Scientists are not in ac-

cord as to the cause. One contingent argues that changing climatic conditions and environments were responsible. Another faction claims that as man became more populous, over-hunting by primitive peoples caused their demise. A third group, including myself, believe it was a combination of both factors. Nevertheless, small scattered populations of horse and ass, especially in remote areas, probably survived in North America until shortly before they were reintroduced by the Spaniards.[9] Some recent datings, mostly unpublished, lead me to this conclusion. The Carbon-14 dating involved was first instigated by Dr. Steven E. Jones, former physics professor at Brigham Young University. I later worked with him on these.

Some of the unpublished dates run on horse fossils that appear to be valid are: 5,890 B.C. (Pratt Cave in Texas); 830 B.C. (southern Saskatchewan, Canada); 815 A.D. (Ontario, Canada); 1,260-1,400 A.D. (Wolf Spider Cave, Colorado). A date of about 1,120 B.C. was determined using a thermoluminescence method on a horse bone from Horsethief Cave in Wyoming. While these dates are important, it will take a number of others in this age range to convince skeptics that the horse did continue in North America past the Pleistocene into historic times. In my opinion these dates eventually will come.

Reported dates less than 10,000 years before the present for horse fossils are unfortunately not yet common, but reports dis-

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[9] It has not been entirely ruled out by some that a few very small herds of horses were possibly present in North America even at the time others were brought over from Europe. The same species brought over, *Equus caballus*, was native to both Europe and North America. These horses would easily have been able to interbreed, thus obscuring the native American horse that had remained.

cussing primitive man in association with the horse and ass in North America are. Many scientific articles have been written about this association in both North and Central America. Mesoamerica especially has a rich literature on this subject. Some of these articles date back to the 1800's (e.g., Heilprin, 1891; Mercer, 1896). Different species of *Equus* associated with man were reported by Mexican paleontologists Joaquin Arroyo-Cabrales and Oscar Polaco from several caves in the Yucatan Peninsula (2003, p. 273-288). A number of sites having a joint occurrence of horse and man have been reported throughout Mexico, though dates are often lacking (e.g., Irwin-Williams, 1967; MacNeish and Nelken-Terner, 1983; Pichardo, 2000b).

Archaeologist Mario Pichardo also wrote a review of the horses at Paleoindian sites in both North and South America (2004). He considered that there were eight species disseminated throughout these sites. It seems clear, at least to me, that the horses and asses, as well as the other animals listed in the Book of Mormon, were actually in America at the time they were said to be here. As given above, there is solid evidence in support of this. For additional information regarding the history of the horse, see Appendix B.

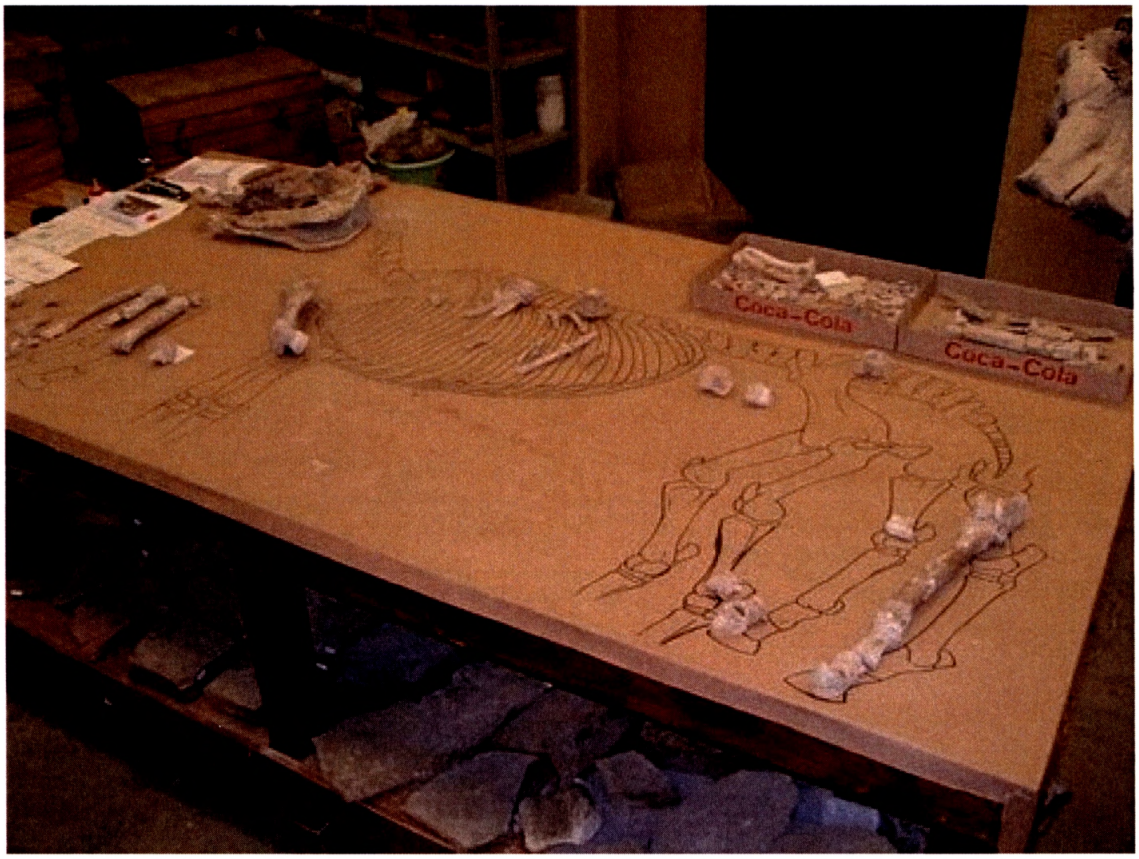

Figure 19. This is a partial reconstruction of a fossil horse the author recently helped collect in Mexico. ***(Photo courtesy of Rosario Gómez, Directora de Paleontología. Coahuila, México.)***