



## CHAPTER THIRTEEN

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# DNA AND ARCHAEOLOGY IN ANCIENT NORTH AMERICAN POPULATIONS

**N**ow that haplogroup X has been found in specific modern Native North American tribes, it must be determined from which civilizations or cultures in antiquity they descend. There are three key cultures of antiquity found within the North American continent and they are centered in the river valleys of the Mississippi, the Ohio, and the Great Lakes regions. These cultural periods associated with these civilizations are designated as Early Woodland, Middle Woodland, and Late Woodland. Each period is represented by the Adena, Hopewell, and Mississippian cultures respectively.

These civilizations and their accepted cultural periods correspond closely with those detailed in the Book of Mormon. The oldest or Early Woodland “cultural high” period dates from 1200 BC to about 100 BC. This culture, called the Adena, corresponds well with the Jaredite timeline and lies within the proximity of the Hill Cumorah in New York, USA. This same hill was named by the

Jaredites as the hill Ramah, which Moroni states was one and the same (Ether 15:11). The sphere of influence of this culture ranged from the Ohio River valley to the East Coast, with settlements found in Virginia, Kentucky, Pennsylvania and New York. The Adena culture ceases to exist at the same time as outlined for the Jaredites in the Book of Mormon as the people of Zarahemla find the last survivor Coriantumr (Omni 1:21, about 130 BC).

The time period for the descendants of Lehi in the Book of Mormon falls between 600 BC and 400 AD. This might not be considered the *classical* period of the scriptural text, as the expansion of the culture developed from a small group. About 200 BC the Nephite and Mulekite cultures unite, creating a mass expansion of the building of cities and even their religion. These two cultures, even though consisting of different languages, become one culture and one language at this time (Omni 1:14-19). The ancient Native American culture that corresponds with the timeline of the Lehites is the Middle Woodland or what is known as the Hopewell culture. The classical period of the Hopewell ranges from 300 BC to 400 AD. This civilization was highly advanced, with knowledge of astronomy, metallurgy, construction of large cities, and crop production. They built massive geometric earthworks oriented toward astronomical alignments that are among the most massive anywhere on earth.

The Hopewell built impressive mounds of earth to bury and honor their dead and from these mounds this culture began to be known. One such mound was discovered and mentioned in Church history by the brethren on Zion's camp. The Prophet Joseph Smith had a vision of a "white Lamanite" that was killed and then buried in this mound in Illinois during the "last great struggle" between the Lamanites and Nephites. This is known as the Zelph account in Church history.<sup>127</sup> The prophet also wrote to his wife at this same time reminiscing that they were "wandering over the plains of the Nephites" and "roving over the mounds of that once beloved people of the Lord."<sup>128</sup> This ancient culture is called the Hopewell Mound Builders after Mordecai Hopewell, on whose land one of the first archaeological digs of this civilization was done. The Hopewell

interaction sphere, or the region they interacted within, stretched from the Appalachians to Yellowstone, Wyoming and from the Gulf of Mexico to the Great Lakes. This is considered the Heartland of America and the bread basket of the world.

This highly advanced civilization began to appear in the archaeological record between 300-200 BC and by all archaeological accounts it collapsed or ended rather abruptly between 400-500 AD. This corresponds closely to the time frame of the Book of Mormon and the accounts recorded in the scriptural history. Joseph Smith declared the remains and mounds of the Hopewell civilization to be the same as the Nephite.<sup>129</sup> There now have been discovered and documented over 25 correlations between the Nephite culture of the Book of Mormon and the archaeological evidence from the Hopewell Mound Builders.

The contemporary Algonquian-speaking language groups that harbor haplogroup X mtDNA are thought by many to have descended from the ancient Hopewell. Charles Mann has stated in his book that: "...the various Algonquian languages in New England all date back to a common ancestor that appeared in the Northeast a few centuries before Christ...The ancestral language may derive from what is known as the Hopewell culture."<sup>130</sup> This Algonquian language base, that is thought to have originated about 200 BC in the Great Lakes region, corresponds remarkably to the Nephite and Mulekite cultural unification which is described in the Book of Mormon as the time when the Mulekites were taught the Nephite language (Omni 1:17-18). It is known that the Algonquian language is one of the most widespread Native North American language families today, making it among the first in North America. "Algonquian is the most widespread of the three language families, extending beyond the Northeast into the Subarctic and the Plains and occupying nearly one-fourth of North America."<sup>131</sup>

Most scholars agree not only that the timing of a single mother tongue happened a "few centuries before Christ" but that there was also a cultural expansion that occurred at the same time. This is addressed in the *American Journal of Physical Anthropology*:

"Although using linguistics to date events is somewhat rudimentary, this migration is proposed to have occurred ~3,000 BP [BP = Before Present] (Denny 1989, 1991), and to have been followed by a linguistic and likely cultural, expansion of Algonquians between 2,600 and 1,500 BP..." [600 BC and 500 AD].<sup>132</sup>

The archaeological record that remains and is presented by non-LDS experts and scholars agrees so perfectly with the historical account in the Book of Mormon it seems to be a supernatural parallel. This cultural "expansion" and parallel is also looked at as having a religious beginning and cause and may have been connected to the prosperity of this culture. Charles Mann writes about this Hopewell prosperity and the vanity associated with it as well as this religious revival that spread throughout eastern North America before the time of Christ:

Hopewell jumped into prominence from its bases in the Midwest, establishing a trade network that covered most of North America. The Hopewell culture introduced monumental earthworks and, possibly, agriculture to the rest of the cold North. Hopewell villages, unlike their more egalitarian neighbors were stratified, with powerful, priestly rulers commanding a mass of commoners. Archaeologists have found no evidence of large-scale warfare at this time, and thus suggest that *Hopewell probably did not achieve its dominance by conquest. Instead, one can speculate, the vehicle for transformation may have been Hopewell religion, with its intoxicatingly elaborate funeral rites.*

If so, the adoption of Algonquian in the Northeast would mark an era of spiritual ferment and heady conversion, much like the time when Islam rose and spread Arabic throughout the Middle East...Based in southern Ohio, the Hopewell interaction sphere lasted until about 400 A.D. and extended across two-thirds of what is now the United States. Into the Midwest came seashells from the Gulf of Mexico, silver from Ontario, fossil shark's teeth from Chesapeake Bay, and obsidian from Yellowstone. In return the Hopewell exported ideas: the bow and arrow, monumental earthworks, fired pottery (Adena pots were not put into kilns) *and, probably most important, the Hopewell religion.*

Silverberg wrote, "a flamboyance and fondness for excess that manifests itself not only in the intricate geometrical enclosures and the massive mounds, but in these gaudy



displays of conspicuous consumption [in the tombs]. To envelop a corpse from head to feet in pearls, to weigh it down in many pounds of copper, to surround it with masterpieces of sculpture and pottery, and then to bury everything under tons of earth—this betokens a kind of cultural energy that numbs and awes those who follow after.”

Vibrant and elaborate, perhaps a little vulgar in its passion for display, *Hopewell religion spread through most of the eastern United States in the first four centuries A.D.* As with the expansion of Christianity, the new converts are unlikely to have understood the religion in the same way as its founders. Nonetheless, *its impact was profound.* In a mutated form, it may well have given impetus to the rise of Cahokia.<sup>133</sup>

While attending a conference in the Eastern States in 1917, James E. Talmage recorded in his diary statements from the chief archaeologist of the state of Ohio, Dr. Wm. C. Mills. Talmage had been in previous contact with Mills about the Hopewell culture. Mills considered his life work to be centered on the Hopewell culture and their history. Talmage writes:

[May 20, 1917; Sunday] Attended Sunday School and afternoon service in Hawthorne Hall, and was a speaker at each assembly. Evening meetings here, as also in Brooklyn, have been discontinued for the summer. The attendance both at Sunday School and afternoon meeting was surprisingly large in view of the fact that many of the Utah college students have left for the vacation period. This evening at the hotel I had a long and profitable consultation with Professor Wm. C. Mills, State Archaeologist of Ohio. He is continuing his splendid work of exploration in the Ohio mounds, and I went over with him again the remarkable agreement between his deductions and the Book of Mormon story. He has reached the following (10) conclusions:

- (1) The area now included within the political boundaries defining the State of Ohio was once inhabited by two distinct peoples, representing two cultures, a higher and a lower.
- (2) These two classes were contemporaries; in other words, the higher and the lower culture represented distinct phases of development existing at one time and in contiguous sections, and furnish in no sense an instance of evolution by which the lower culture was developed into the higher.

- (3) These two cultural types or distinct peoples were generally in a state of hostility one toward the other, the lower culture being more commonly the aggressor and the higher the defender.
- (4) During limited periods, however, the two types, classes, or cultures, lived in a state of neutrality, amounting in fact to friendly intercourse.
- (5) The numerous exhumations of human bones demonstrate that the people of the lower type, if not indeed both cultures, were very generally affected by syphilis, indicating a prevalent condition of lasciviousness.
- (6) There (are) two peoples or cultures...the lower culture was most commonly the assailing party, while the people of the higher type defended as best they could but in general fled.
- (7) As a further consequence of this belligerent status they buried their dead, with or without previous cremation, in such condition as to admit of expeditious covering up of the cemeteries by the heaping of earth over the sepulchres [sic], in which hurried work the least skilled laborers and even children could be employed.
- (8) From a careful collating of data it is demonstrated that the general course of migration through the area now defined as the State of Ohio was inward from the west and outward toward the east.
- (9) Professor Mills states that no definite data as to the age of these peoples have as yet been found, but that the mounds may date back a few hundred years or even fifteen hundred or more.
- (10) Several years ago I placed a Book of Mormon in the hands of Professor Mills and, while he is reticent as to the parallelism of his discoveries and the Book of Mormon account, he is impressed by the agreement."

James E. Talmage  
 20 May 1917<sup>134</sup>

Hugh Nibley, an LDS author and scholar, writes of this same Hopewell culture in a well-received publication entitled *The Prophetic Book of Mormon*. Dr. Nibley explains where one would best

look for the cultural remains of the Nephites in their search for the setting for the Book of Mormon:

The Book of Mormon is a history of a related primitive church, and one may well ask what kind of remains the Nephites would leave us from their more virtuous days. *A closer approximation to the Book of Mormon picture of Nephite culture is seen in the earth and palisade structures of the Hopewell and Adena culture areas than in the later stately piles of stone in Mesoamerica.*<sup>135</sup>

This statement begs that the question be asked: When in history have the Lord's people ever been the "high culture," the most worldly culture, and the greatest builders of monumental cities and pyramids among all their neighbors? The answer: a resounding never! Many Latter-day Saints have a predisposition to believe that the description of the Nephite civilization in the Book of Mormon must imply that they had to leave "monumental ruins" to prove and justify an assumed "high civilization."

Thousands of years in the land of Canaan and later Palestine, the chosen people of the Lord were the smallest nation and culture in the area. The monumental ruins of Egypt, Babylon, Assyria, Persia, the Roman, and the Greek cultures cannot even be compared fairly with the unimpressive archaeological remains of ancient Israel. That which the people of God had, that these great cultures did not, was the gospel of Jesus Christ. Righteousness and monumental ruins are not necessarily cultural synonyms.

An understanding of the preferred building material of the Nephites might change the way we look for evidences of this Book of Mormon culture. Helaman explains in his book that the building material used by the Nephites was not stone but wood, and when wood was scarce they used a type of cement and sent away for wood:

And the people who were in the land northward did dwell in tents, and in houses of cement, and they did suffer *whatsoever tree should spring up upon the face of the land that it should grow up, that in time they might have timber to build their houses, yea, their cities, and their temples,*

and their synagogues, and their sanctuaries, and all manner of their buildings.

And it came to pass as timber was exceedingly scarce in the land northward, they did send forth much by the way of shipping.

And thus they did enable the people in the land northward that they might build many cities, both of wood and of cement.

Helaman 3:9-11

Nibley again speaks of this use of wood as a construction material by the Nephites, and the importance of wood to the people of the Book of Mormon:

*The Nephites vastly preferred wood to any other building material, and only worked in cement when they were forced to by shortage of timber. Indeed, they refused to settle otherwise good lands in the north if timber for building was lacking (Helaman 3:5). Where they reluctantly settled in unforested areas they continued to "dwell in tents, and in houses of cement," while they patiently waited for the trees to grow (Helaman 3:9). Since cement must be made of limestone, there was no lack of stone for building in the north. Why then did they not simply build of stone and forget about the cement and wood? Because, surprising as it may seem, ancient people almost never built of stone. Even when the magnificent "king Noah built many elegant and spacious buildings," their splendor was that of carved wood and precious metal, like the palace of any great lord of Europe or Asia, with no mention of stone (Mosiah 11:8-9). The Book of Mormon boom cities went up rapidly (Mosiah 23:5; 27:6), while the builders were living in tents. And these were not stone cities: Nephite society was even more dependent on forests than is our own.<sup>136</sup>*

The study and process of archaeological discovery would be entirely different in the search for evidence when a culture used wood instead of stone as a building material. Cities would entirely disappear through time leaving nothing but soil and post molds. Cities could be burned by fire, as described by Mormon, leaving little if anything but charred remains or a layer of ash in a stratum that could not be seen without excavation.

Yet there are many who wish to prove the Book of Mormon true by establishing a geographical setting based on the obvious and



genuinely monumental remains of a high civilization. The Prophet Joseph Smith explained exactly where to look by inspiration and revelation, just as the Book of Mormon informs the reader of what kind of remains to look for.

### *The Mound Builders and Haplogroup X*

The Hopewell civilization dates to the same chronological time frame as the Nephite culture recorded in the Book of Mormon. The Nephite civilization has been shown to have 25 or more independent correlations with the archaeological record of the Hopewell. It has also very recently been discovered and published that haplogroup X mtDNA markers were also present in the remains of ancient Hopewell individuals.

A 2008 article in the *American Journal of Physical Anthropology* completed the first ever sequencing of remains of Hopewell Mound Building people and amazingly found the haplogroup X lineage. This alone should make the Hopewell Mound Building civilization the most likely candidate civilization anywhere in the Americas to have been associated with the genetic cultures of Europe, the Middle East and the Book of Mormon.

*Haplogroup X has been detected in 3% of individuals from a Middle Woodland Hopewell site in Illinois (1,825–1,625 BP; Bolnick and Smith, 2007) and 6% of the Norris Farms individuals (Stone and Stoneking, 1998). Yet, 700 years later, it is at extremely high frequencies in some Northeastern populations (50% in Minnesota Chippewa). Haplogroup X does, however, exhibit a relatively high level of haplotype diversity, more than might be expected to accumulate from recent (100 years of) growth and diversification. Thus it is more likely that haplogroup X was present at higher frequencies in other prehistoric Northeast, or neighboring, populations and has gone undetected.<sup>137</sup>*

These sequenced mtDNA remains of the Hopewell civilization were radiocarbon dated to 1825-1625 years BP (before present), which correlate to 183 AD and 383 AD respectively. The dates in this article make a direct connection between the ancient Hopewell

mound builders and the time frame of the Book of Mormon narrative.

The article also makes a genetic correlation in light of the previous articles mentioned above. This genetic relationship exists between the Hopewell people and those having haplogroup X in Native North American populations and the genetic lineages from Europe and the Middle East. This genetic and chronological correlation is an important connection that no other civilization anywhere in the Americas can make at this time.

The current genetic research gleaned from professional journals is represented in the following table. This table shows the genetic connections that have been found and verified, relating to expectations from the historical record of the Book of Mormon.

Table 3. Summary of Genetic Research

<b>Expectations from the Book of Mormon</b>	<b>Verified Yes</b>	<b>Verified No</b>
<b>Native American (Remnant) Population</b>		
European (Caucasian) DNA lineage markers found in modern Native population(s)	Haplogroup X	
High Frequency of Asian DNA markers found among Native populations	Yes	
Small Percentage of European DNA in overall Native population	Haplogroup X	
DNA in Natives that correlates with Mediterranean lineages	Haplogroup X	
European/Mediterranean DNA verified to have existed anciently in America	Haplogroup X	
European/Mediterranean DNA verified in remains in America within the archaeological time frame of the Book of Mormon	Haplogroup X	
European/Mediterranean DNA verified in remains of the target civilization suggested to have been the Nephite culture	Haplogroup X	
European/Mediterranean DNA remains arriving in America near 600 BC		Not yet
<b>Old World (Source) Population</b>		
European (Caucasian) DNA markers in the Mediterranean area	Haplogroup X	

Expectations from the Book of Mormon	Verified Yes	Verified No
DNA lineage that can potentially be a source population for Native North American populations	Haplogroup X	
DNA lineage from a Semitic population that is associated with Native North American populations	Haplogroup X	
DNA stemming from Jewish populations that is associated with Native North American populations	Haplogroup X	
DNA lineage verified to be ancient and existing at the time Lehi left Jerusalem	Haplogroup X	

### *A Continuing Controversy*

The LDS scholarly community has, of course, known about haplogroup X DNA since its appearance. The initial response to the news of a European lineage among Native Americans sparked interest in this unique mtDNA lineage. When this Middle Eastern DNA was found to be in North America, hopes began to swell that the same DNA lineage would then be found in Mesoamerica. The Mesoamerican theorists had, by this time, reached a consensus and confidence that the Book of Mormon setting had to be isolated within the Yucatan Peninsula of Central America. There was an expectation that this European and Middle Eastern DNA would soon be found in Mesoamerica.

Excited about the discovery of haplogroup X, Latter-day Saint scholars took a keen interest in this research. At that time LDS Scholar John A. Tvedtnes, Senior Resident Scholar of the Neal A. Maxwell Institute for Religious Scholarship at Brigham Young University, stated in a documentary produced for FAIR (Foundation for Apologetic Information and Research) that indeed Haplogroup X could be related to the Book of Mormon peoples.

These are the mitochondrial Haplogroups found among the Native Americans: A, B, C, and D. Now, they're found throughout North and South America, but in different proportions. However, there are others that have been found too. X, for example, showed up mostly in the eastern part of the United States. For a long time people were worried about this because X is found in Europe

and a few other places too. But, since it's only found, mostly found I should say, along the eastern coast of the United States, some have suggested that it came from Europe, people following across the ice flows and down the east coast of America, and ending up in places like Florida where quite a number of them have this and Ohio also is another place where they found a lot of the X haplogroup. But actually, *since it is more closely related to the kind of...X haplogroup we find in the Middle East, there is no reason to exclude it as being from Book of Mormon peoples.*<sup>138</sup>

This statement was made by John Tvedtnes in the FAIR video *The Book of Mormon and New World DNA* that was released for sale in the spring of 2008. Since that time FAIR has recanted this position and has embraced phylogenetic dating, which dating is founded in evolutionary theory, claiming that haplogroup X arrived in the New World long before Lehi's group, which was also long before Adam, the first man.

When it was discovered that haplogroup X was absent in Mesoamerica, further doubt and skepticism about the data crept in. With no haplogroup X found in Mesoamerica, the rejection of the DNA findings began. This change of attitude was presented in an apologetic way as if to protect or defend the Church, but in reality the articles published were evidently written more in defense of Mesoamerica than the Church or the Book of Mormon. This defense was hidden in the pages of an unrelenting flood of intellectual jargon that served to baffle the mind of the reader into believing that haplogroup X couldn't possibly be related to the Book of Mormon peoples, and that there could never be a real genetic "remnant" as prophesied.

In these "apologetic" writings, it was even stressed that use of the word "Lamanite" in the Doctrine and Covenants didn't really mean Lamanite as used in the Book of Mormon and was instead Joseph Smith's word and not the Lord's and that Joseph was quite happy to revise them, edit them later, etc.<sup>139</sup> The article by the LDS apologetic organization FAIR implies that Joseph was willing to make changes to his written revelations from the Lord as he deemed necessary even on a whim. Such a position would seem inadvisable



for those with a stated mission to defend the Church and Joseph Smith as the latter-day founder and leader of this dispensation, through whom the sacred record was translated and the gospel restored.

The intellectual battle against haplogroup X took the form of two fronts: first, the dating was too early to be considered to be from Book of Mormon peoples, and second, there could be no identifiable genetic remnant left of Lehi for a number of reasons.

Despite these assertions, the fact remains that haplogroup X has been found in the ancient remains of people who existed during the same time period as the Book of Mormon and in America before any historical European migration took place. It also exists in modern-day Native Americans as prophesied in scripture "that a remnant would be spared and then taught by the Gentiles" who would receive this record of the Promised Land.

There may now be affirmative genetic evidence of a remnant from the Middle East in North America, as prophesied and promised within the Book of Mormon. This haplogroup X remnant corresponds neatly with the Nephite record—scripturally, historically, genetically, and prophetically. Not only is there a probable genetic remnant, but this information also answers the questions raised by the anti-Mormons in the DVD entitled *DNA vs. the Book of Mormon*. This genetic information also validates the statements of Joseph Smith as he speaks of a North American setting, contrary to the assumptions and attacks made by that DVD. The anti-Mormons produced the DVD because they believe that the LDS community teaches as doctrine that the Book of Mormon took place in Mesoamerica.

Some LDS scholars, so dependent upon the incomplete geographical passages in the Book of Mormon and in defense of Mesoamerica, write that "every proposed geographical setting other than Mesoamerica fails to meet the criteria established by the text of Mormon's account."<sup>140</sup> This statement seems quite strong in view of the ample evidence to the contrary that we have endeavored to put

forward. This statement would also suggest that the authors of such a statement must either not be aware or else have not taken the opportunity to explore the rich archaeological and genetic evidences that have recently emerged in concert with the statements of Joseph Smith and the textual evidences.

It seems ironic to say, but even in this day and age of free thought and expression that even within the church there is a sort of “political correctness” that will not allow for the objective consideration of the statements of Joseph Smith, archaeological research, and the potential DNA evidence for a North American setting for the Book of Mormon to occur within most “serious” Latter-day Saint scholastic circles. In future years this awkward academic posturing will doubtless be a point of humorous recollection, but the bias referred to here was never more evident than when the authors of this work were denied access to present their findings at BYU’s Education Week (where Mesoamerican theories are routinely presented) because a review of our material proved it to be too “controversial” to be allowed.

### *DNA Dating and Haplogroup X*

The most significant objection to the discovery of haplogroup X being related to the Book of Mormon account is its published time of arrival in the Americas. The case they bring against DNA evidence is the secular “view” that haplogroup X came to the Great Lakes region 13,000 to 50,000 years ago.

Secular presumptions are based on the theories of evolution and phylogenetic dating. This type of dating would theoretically place the founding haplogroups in the Western Hemisphere long before the arrival of the Jaredites, Lehi, and Mulek. Critics of the Book of Mormon and most LDS scholars alike have embraced this secular dating also in the defense of Mesoamerica to cast doubt on the relationship of haplogroup X with the history and record of the Book of Mormon in North America.

There are two basic but opposing philosophies regarding dating of the mtDNA of haplogroup X and the geography of the Book of Mormon. The dating of the migration of haplogroup X to North America was addressed by LDS scholar and surgeon Dr. David Stewart:

The idea haplogroup X has been in the Americas for 10 to 35 thousand years is based solely upon the assumptions of the Hardy-Weinberg equilibrium, which include: (1) completely neutral variants, (2) no mutation, (3) no migration, (4) constant near infinite population size, and, (5) completely random mate choice. In the Book of Mormon account, most of the Hardy-Weinberg equilibrium assumptions are inapplicable. The wilderness journey, the ocean voyage, and the colonization of the new world, result in patterns of genetic selection and DNA migration different from that found in Lehi's home environment. Closely related individuals married and we are dealing with an [initially] very small group, not a nearly infinite population which would dramatically alter DNA marker distribution and inheritance over time. *If we take these assumptions about haplogroup X instead of the Hardy-Weinberg assumptions, haplogroup X could have been introduced into the Americas as recently as one to two thousand years ago, far less than the ten to thirty-five thousand years under the Hardy-Weinberg assumptions.*<sup>141</sup>

There have been those in both the LDS scholarly community as well as those who are critics of the Book of Mormon and the Church who seem to be utterly unaware of the debate that is taking place about DNA dating at the time of this publication. The difference between *phylogenetic* dating and *pedigree* dating has moved mitochondrial Eve from 200,000 years ago to a date of 6,500 years ago.<sup>142</sup> This is a date much more compatible with a scriptural timetable and chronology.

The debate between these two scientific communities has changed the total landscape of evolutionary biology in the realm of genetic descent. The findings of pedigree dating could move the incursion of haplogroup X in North America into the time frames of the Book of Mormon. This dating process is based on the *actual* genetic mutation rates, rather than *theoretical* assumptions. This

discrepancy has created a rift between the phylogenetic dating and pedigree dating researchers.

### *The Great DNA Dating Debate*

The evolution theory-based phylogenetic rate yielded a date back to the most recent common ancestor of all humans to around 200,000 years [mitochondrial Eve]. By applying the actual rate from many lineages of real people as was conducted by Thomas J. Parsons, surprisingly that time frame shrank by orders of magnitude. Parsons writes:

Thus, our observation of the substitution rate, 2.5/site/Myr, is roughly 20-fold higher than would be predicted from phylogenetic analyses. *Using our empirical rate to calibrate the mtDNA molecular clock would result in an age of the mtDNA MRCA [most recent common ancestor] of only ~6,500 [years ago], clearly incompatible with the known age of modern humans.*<sup>143</sup>

This figure is so unbelievably low that Parsons immediately discounts the evidence of his own findings. This study of Parsons was not simply based on one single lineage, but multiple lineages that were sequenced and studied. Parsons, caught in the Darwinian black hole, refuses to accept his own results, as well as a host of others finding similar data on real people using known lineages.

Rather than questioning the admittedly assumed theory of the evolution-based phylogenetic rate, he begins looking for ways to make his reality-based findings comply with the evolutionary estimate, calling the rate “unsettled” until they can “fix” the obvious discrepancy, stating that the “...rate and pattern of mtDNA substitution remains an unsettled issue of central importance.”<sup>144</sup> Parsons’ research has been replicated numerous times and retested with similar and confirmatory results. Laurence Loewe makes a similar comment about the same problem of dating and states:

If molecular evolution is really neutral at these sites, *such a high mutation rate would indicate that Eve lived about 6500 years ago*—a figure clearly incompatible with current theories on human origins. Even if the last common



mitochondrial ancestor is younger than the last common real ancestor, it remains enigmatic how the known distribution of the human populations and genes could have arisen in the past few thousand years.<sup>145</sup>

Research indicating that the theoretical phylogenetic dating does not give accurate ages compared to actual tests on real people has caused great concern among the evolutionary scientists. Ann Gibbons writes, *"Regardless of the cause, evolutionists are most concerned about the effect of a faster mutation rate. For example, researchers have calculated that "mitochondrial Eve" – the woman whose mtDNA was ancestral to that in all living people—lived 100,000 to 200,000 years ago in Africa. Using the new clock, she would be a mere 6000 years old. No one thinks that's the case..."*<sup>146</sup> Gibbons explains the problems within the evolutionist community and the dating techniques currently used.

Resolving the issue is vital. It could also complicate the lives of evolutionary scientists who use the mtDNA mutation rate as a clock to date such key events as when human ancestors spread around the globe. Evolutionists have assumed that the clock is constant, ticking off mutations every 6000 to 12,000 years or so. But if the clock ticks faster or at different rates at different times, some of the spectacular results—such as dating our ancestor's first journeys into Europe at about 40,000 years ago—may be in question. *"We've been treating this like a stopwatch, and I'm concerned that it's as precise as a sun dial,"* says Neil Howell, a geneticist at the University of Texas Medical Branch in Galveston...<sup>147</sup>

Perhaps Dr. David Stewart was right in his observation that "haplogroup X could have been introduced into the Americas as recently as one to two thousand years ago, far less than the ten to thirty-five thousand years under the Hardy-Weinberg assumptions."<sup>148</sup> For a more detailed discussion of this issue see *Rediscovering the Book of Mormon Remnant through DNA* by Rod Meldrum.<sup>149</sup>