

THE SACRED CURSE

**How Native American DNA Exposes
Mormonism's Lamanite Myth**



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Dedication

In honor of Fawn Brodie, Sandra Tanner and Sue Emmett, three pioneering women in a dreary sea of men.

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Preface

Members of the Church of Jesus Christ of Latter-day Saints, the 'LDS' or Mormon Church, believe ancient Israelites built boats, sailed to the Americas, and established large civilizations many centuries before the arrival of Columbus. In addition, millions of Indigenous American and Polynesian Mormons believe they are Lamanites; literal descendants of these early Israelite migrants, whose dark skin originated from a divine curse imposed on their ancestors. These views come from the sacred writings Mormons possess, in addition to the Bible, in particular the Book of Mormon. Members of the faith firmly proclaim special knowledge in this area of anthropology and have long resisted other evidence to the contrary.

Scientists have also formed views about human origins and the routes our various ancestors took as they colonized the earth. The comparatively recent colonization of the New World and the Pacific is a particularly active area of research. For well over a century the discoveries of anthropologists have led them to believe Indigenous peoples of the Americas and the Pacific are descended from Asian ancestors; the original founders of the Americas walking from Siberia across a land bridge in excess of 15,000 years ago, while the ancestors of the Polynesians sailed out of island Southeast Asia within the last 4,000 years. No reliable archaeological clues have been found of ancient Israelite immigrants, either in the Pacific or the Americas.

The global history of human migration has been brought into much sharper focus with the arrival of powerful new genomics technologies that allow scientists to trace ancestral ties between human populations with unprecedented accuracy. Whole genome studies have expanded the human family tree to include Neanderthal and Denisovan ancestors from over 50,000 years ago. This same DNA technology is touching human lives intimately by allowing us to trace the geographical locations of our more recent and closest

ancestors. It is also shedding considerable light on the origin, timing and route of the first human migrations into the Americas and the Pacific.

For the sake of disclosure, I was a fully active member of the Mormon Church for almost thirty years. I served a two-year LDS mission in Melbourne, married in the New Zealand temple, and served in numerous teaching and leadership positions including two years as an LDS bishop in Brisbane, Australia. I first encountered mitochondrial DNA research on Native Americans in 1998 while serving as a bishop. I resigned from my calling within days because I could not reconcile my religiously based views with the new science I had encountered.

Like all Mormon bishops, I held down a full-time day job. Professionally, I have spent most of my career researching in the field of plant molecular genetics. The plant and animal kingdoms are closely related on a molecular level, and the structure and language of DNA are remarkably conserved in both. Just as molecular biology helps researchers decode human origins, it is applied to other animals and plants to unravel genetic relationships and evolutionary origins.

A note about LDS Church structure. The Church hierarchy includes a president who is revered as a prophet of God. He and his two counselors act together as the First Presidency. Subordinate to the presidency is the Quorum of the Twelve Apostles, twelve men who are considered to be 'prophets, seers and revelators,' ranked in the order of the date of their ordination to the apostleship. Occasionally these men are referred to as 'the Brethren.' The next level of the hierarchy includes members of the Quorum (or Council) of Seventy, many of whom occupy positions in area presidencies throughout the world. All of the above positions are filled by men, and they are collectively known as the 'General Authorities.'

The LDS scriptural canon includes the Book of Mormon, within which are the following books in sequential order.

1 Nephi, 2 Nephi, Jacob, Enos, Jarom, Omni, Words of Mormon, Mosiah, Alma, Helaman, 3 Nephi, 4 Nephi, Mormon, Ether and Moroni.

The book of Ether in the Book of Mormon gives an account of the Jaredites, who migrated to the New World in 2000 BC. The remaining books give an account of the Lehites and Mulekites, who sailed to the Americas in 600 BC. Other LDS scriptures include the Doctrine and Covenants (D&C) and the Pearl of Great Price. The latter includes the books of Moses and Abraham and the Writings of Joseph Smith 1 and 2. The Church accepts the authorized King James Version of the Bible.

Over the years numerous scientists involved in New World and Pacific studies have shared helpful research findings and perspectives. These have included Peter Bellwood, Garrett Hellenthal, Andrew Merriwether, Dennis O'Rourke, Antonio Torroni, Theodore Schurr, David Glenn Smith. Most of

these scientists are, by-and-large, unaware of the theological implications of their research. I would particularly like to acknowledge the significant contribution of Gary Edmond, Professor of Law at the University of NSW, who specializes in the use of scientific evidence in legal proceedings. Sections of the book have drawn on jointly authored unpublished work. I would also like to acknowledge the friendship, interest and support of several non-Mormon and exmormon friends, some of whom have commented on various drafts of the manuscript, including: Kenley Butler, Mike Cable, Steven Clark, Gary Clark, John Dehlin, Randall Falkiner, Thomas Murphy, Mike Perritt, Kevin Thomson, Romy Thomson and Randy Wright. I would especially like to thank my wife Jane, my closest friend of 35 years, who has largely moved on from Mormonism, but who patiently supports my interest in it.

While I have benefitted from the work and assistance of others, I take full responsibility for this book, and its errors.



Introduction

In recent years the Church of Jesus Christ of Latter-day Saints (LDS or Mormon Church¹) has been faced with one of the more serious threats in its 200-year history. Discoveries in the field of human population genetics have challenged the historical validity of the Book of Mormon, widespread beliefs about contemporary Lamanite ancestry, and raised questions about the motives of the founding prophet, Joseph Smith. While evidence against the miraculous origins of the Book of Mormon has been steadily accumulating for more than a century, the singular power of DNA-based critiques has been perceived as particularly threatening. Modern biological techniques offer fresh and apparently incontrovertible evidence, that amplifies the problems identified by decades of anthropology, archaeology and linguistic study.

Traditionally, most Latter-day Saints have considered the Book of Mormon to be ‘an account of the former inhabitants of [the American] continent and the source from whence they sprang’. Native people throughout the Americas and the Pacific are believed to be the descendants of the House of Israel. The Book of Mormon was ‘written to the Lamanites’ that they ‘might come to a knowledge of their fathers’.² For almost two centuries the Church has conducted a mission to the Lamanites who, according to Mormon scripture, had ‘dwindled in unbelief because of the iniquity of their fathers’ (D&C 3:18-20).

The most problematic idea to emerge from the Book of Mormon is the racist notion that God would impose a physical curse on a race of people in punishment for unrighteousness. The very earliest LDS beliefs linking skin color with a divine curse—most visibly manifest in priesthood restrictions that were once imposed on members of African descent—are found within the pages of the Book of Mormon. While the original Israelite migrants to the

¹ Current Church President Russell M. Nelson has received revelation that God is displeased with the nicknames “Mormon” and “LDS” and discourages their use. As these nicknames are universally recognizable and there are no suitable brief alternatives I continue to use them.

² The testimony of the Prophet Joseph Smith, (ix) and Title Page (iii) in the Book of Mormon.

Americas were ‘white, and exceedingly fair and delightsome’, the Lord God imposed a ‘sore cursing’ upon the descendants of the rebellious Laman—a member of the original migrant party—in the form of a ‘skin of blackness’ that ‘they might not be enticing unto my people.’³

In recent decades, and largely in response to the mounting evidence against an ancient Middle Eastern presence, LDS apologists—a term used for scholars who defend the faith—began promoting more restricted models of early Israelite settlement and recognizing the long existence of non-Israelite peoples throughout the Americas. These more limited geographies (LG) centered on Mesoamerica, are largely based on the work of LDS scholars at Church-owned Brigham Young University (BYU). These models have insulated the Book of Mormon from some, though certainly not all, of the earlier criticisms. However, the prevailing view still dominant among ordinary Mormons, largely unaware of the LDS apologetics, locates the events in the Book of Mormon and the descendants of the Book’s peoples across the entire western hemisphere. LDS scholars commonly refer to this interpretation as the hemispheric geography (HG).

This book explores how population genetics research challenges widespread LDS beliefs, how LDS scholars have responded, and the implications of the science for the Mormon Church. Comprehensive mitochondrial DNA and whole genome studies on many thousands of living and ancient Native Americans from North, Central and South America have failed to uncover any trace of pre-Columbian Jewish DNA. Meanwhile, Mormon apologists have increasingly, and dramatically, resorted to limited geographical accounts in an effort to defend the Book of Mormon from the implications of the latest research in population genetics.⁴ Resorting to these restrictive geographical interpretations has, however, created deeper problems for apologists and their Church. These reactive models require harmonization with the text of the Book of Mormon, and a long tradition of authoritative hemispheric interpretation, that continues to motivate the ongoing mission to restore the Lamanites to a ‘knowledge of their fathers’. The emergence of population genetics has also coincided with the arrival of the Internet, which is providing unprecedented exposure to the human genetics research *and* related apologetic responses.

A. The ‘Google Apostasy’

The rapid uptake of the Internet around the turn of the century has intensified debates surrounding the historicity of the Book of Mormon.

³ 2 Nephi 5: 21. See also Jacob 3:5, 8-9; Alma 3:6-7, 9, 14-15, 18-19; 3 Nephi 2:15.

⁴ For a historical sketch of the development of limited geographies see: Thomas W. Murphy, *Imaging Lamanites: Native Americans and the Book of Mormon* (PhD dissertation, University of Washington, 2003), 200-229; available at <https://www.academia.edu/10367006/>.

During the 20th century few Latter-day Saints were exposed to secular criticism of LDS scripture or apologetic scholarship. Debates about historicity were restricted to a handful of scholarly journals, books and annual gatherings of intellectuals in centers with large LDS populations. Given the broad geographical footprint of the Church, relatively few members attended these gatherings of academically-minded Mormons or accessed their publications. Nowadays, a far greater proportion of the membership are being exposed to 'troubling Church issues', among which the historicity of the Book of Mormon features prominently.

The development of highly sophisticated search engines and smartphones, now gives members instant access to vast amounts of historical information about the Church. A member can learn more about Church history on their smartphone, while waiting for the bus, than in a lifetime of Church attendance. Typically this information, from both critical *and* apologetic viewpoints, does not align with the heavily 'correlated' LDS narrative taught in Sunday School, seminary and institute and by Church leaders at General Conferences. Heavily accessed websites such as [MormonThink](#), [CES letter](#) and [Mormon Stories](#) are now exposing members to a wide array of historical and doctrinal issues and many members are questioning their faith. The Church can no longer control its own narrative and the information its members consume.

When asked in 2011 if senior leaders were aware of these problems Elder Marlin K. Jensen responded: 'The fifteen men really do know, and they really care. And they realize that maybe since Kirtland, we never have had a period of, I'll call it apostasy, like we're having right now; largely over these issues.'⁵ [During the Kirtland apostasy of 1837-38 the Church lost about one third of the leadership.] In response to the recent wave of apostasy the Church began publishing a series of '[Gospel Topics Essays](#)' on its official website that are aimed at addressing challenging historical and doctrinal issues.⁶ Speaking to [seminary and institute teachers](#) in 2016, Elder M. Russell Ballard said it was crucial that teachers 'know the content in these essays like you know the back of your hand'.⁷ He counseled teachers to use them to 'inoculate your students by providing faithful, thoughtful, and accurate interpretation of gospel doctrine, the scriptures, our history, and those topics that are sometimes misunderstood'. Despite this counsel to a restricted audience, most members are unaware of the essays, and of the few who have read them, many have found them deeply troubling to their faith.

⁵ Marlin Jensen, Q&A with a Mormon Studies student group at Utah State University on November 11, 2011.

⁶ For academic responses to these essays see: Mathew L. Harris and Newell G. Bringham, eds., *The Mormon Church and its Gospel Topics Essays: The Scholarly Community Responds* (Salt Lake City, UT: Signature Books, forthcoming).

⁷ Marianne Prescott "An evening with a General Authority: Elder Ballard" *Deseret News* (27 February 2016).

For those questioning their faith the Internet also provides connectivity—and in many cases anonymity—via bulletin boards (e.g. [Exmormon reddit](#), [exmormon.org](#)), discussion groups (e.g. [Mormon Discussions](#)), Facebook groups, and podcasts ([Mormon Stories](#)), where members can share their thoughts, concerns and feelings. Many of these forums are very heavily accessed by questioning Mormons.⁸ A 2011 online survey of over 3,000 Latter-day Saints who have experienced a [faith crisis](#) revealed that a loss of faith in the Book of Mormon was among the four main reasons for a loss of belief in the Church.⁹ The primary reason given for their loss of faith in the Book of Mormon was DNA.

⁸ For example, the Exmormon reddit site has more members (140,000 Nov 2019) than the combined membership of all other religious recovery groups on reddit.

⁹ LDS scholar Terryl Givens has said ‘Not since Kirtland have we seen such an exodus of the Church’s best and brightest leaders’ Quoted in LDS Personal Faith Crisis, a report prepared by lay Mormons for President Dieter F. Uchtdorf in 2011. 31-32.



1. The Book of Mormon and the Lamanites

A. The Book of Mormon story

Joseph Smith claimed the Book of Mormon was a direct translation of ancient golden plates, which an angel named Moroni instructed him to recover and translate. The plates were buried in a hill near Manchester in New York State. First published in 1830, it remains one of the central and defining scriptures of the LDS Church. Smith described it as ‘the keystone of our religion’ and ‘the most correct book ever written’.¹⁰

The Book of Mormon describes three waves of Middle Eastern settlers who sailed to ancient America. The Americas are presented as a land of promise a ‘quarter where there never had man been’ (Ether 2: 5-7). The first group, the Jaredites, left Mesopotamia after the confusion of tongues inflicted at the Tower of Babel in about 2,200 BC (Figure 1). The Jaredites settled ‘all the face of the land’ and grew into a large civilization with a population in the millions (Ether 1: 33-34, 42; 2: 17; 7: 11; 15: 2). Due to their wickedness, God allowed the destruction of their populations in a series of battles between 279 and 130 BC. The final battle took place near Hill Ramah, which later became known as the hill Cumorah. A lone survivor of the entire Jaredite civilization, the elderly Coriantumr, was found by the second wave of settlers, the Mulekites, who arrived in the New World just after the turn of the sixth century BC. Mulek had fled Jerusalem when the Babylonians carried off his father, King Zedekiah.¹¹ The third and most important group were the Lehiters. They were a small band of settlers based around the family of Lehi.

¹⁰ Joseph Smith, *History of the Church of Jesus Christ of Latter-day Saints*, 7 Volumes, ed. B.H. Roberts 2nd edition (Salt Lake City: Deseret Book Co, 1978) 4: 461.

¹¹ 2 Kings 25. According to the account in 2 Kings, all of Zedekiah’s sons were executed in front of him. Mulek is not mentioned in the Old Testament.

The Lehites arrived in the New World at about the same time as the Mulekites and eventually assimilated with them.

Lehi and his family left Jerusalem, just before the Babylonian captivity, in about 600 BC. They travelled to the New World where they split into two separate nations, named after Lehi's eldest sons, Nephi and Laman. The Book of Mormon portrays the Nephites as a technologically advanced society, populated with light-skinned people and favored by God (2 Nephi 5: 13-17; 4 Nephi 1: 10). The Lamanites, cursed by God with a 'skin of blackness', were technologically and culturally inferior.¹² The Book of Mormon presents the Lamanites as full of iniquity, lazy, idolatrous and mischievous (2 Nephi 5: 24; Mosiah 9:12). During most of the thousand-year Lehite history, these light and dark-skinned peoples remained in continual conflict. A visit to the New World by the resurrected Christ, in about 33 AD, temporarily interrupted the conflict and reunited the two nations until about 200 AD (4 Nephi 1: 17). After this interval of peace the Nephites gradually descended into wickedness and in a show of divine retribution were wiped out by the Lamanites in around 421 AD (see Figure 1).

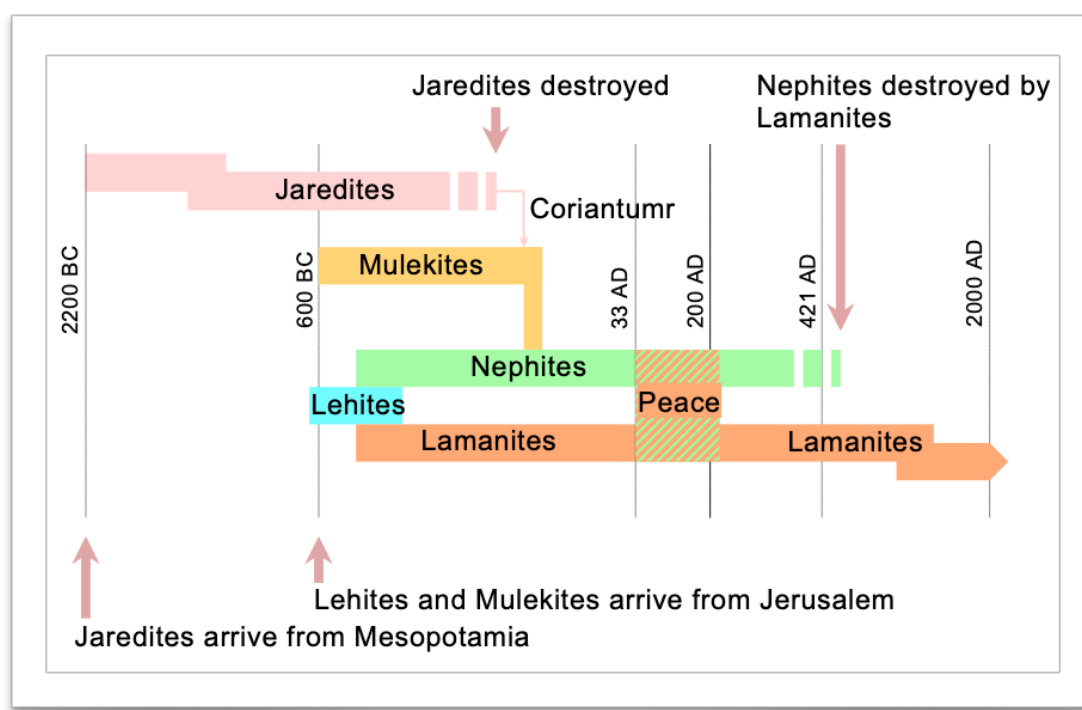


Figure 1. Basic Chronology of Book of Mormon civilizations.
Adapted from Southerton, *Losing a Lost Tribe* 6.

¹² Recently, apologists responding to the charge of racism in the Book of Mormon have questioned whether the 'mark' itself was part of the 'curse'. See John Tvedtnes, "The Charge of 'Racism' in the Book of Mormon," *The FARMS Review* 15 (2003): 183-197, 186-190. Smith's revision of the Book of Mormon in 1840 produced some minor textual alterations, which included replacing the expression 'they shall be a white and delightsome people' with 'pure and delightsome' (2 Nephi 30: 6).

While geographical features such as mountains, cities, rivers, seas and plains are mentioned in the Book of Mormon, the most conspicuous feature in the text is an 'hourglass' shape produced by a 'narrow neck of land' dividing 'the land northward' from 'the land southward'. This is described in the Book of Alma: 'the land of Nephi and the land of Zarahemla were nearly surrounded by water, there being a small neck of land between the land northward and the land southward' (Alma 22: 27, 32).¹³ The Jaredites, we are told, settled in the land northward (Omni 1: 22; Ether 10: 21). The Nephites and Lamanites lived in the land southward. That land was divided by a 'narrow strip of wilderness' that ran from the 'sea east' to the 'sea west'. The Nephites occupied the land just below the narrow neck and the Lamanites lived, though just how expansively is not revealed, in the land below them. Somewhat confusingly, according to Alma 22: 33 the Lamanites lived in the land of Nephi. The only named river, the Sidon, ran northward between the eastern and western wildernesses (Alma 22: 29).

Based on a straightforward understanding of the Book of Mormon, most Latter-day Saints believe the Lamanites now inhabit the entire Western Hemisphere (the Americas). Since its publication the Book of Mormon has traditionally been interpreted and presented as a historical account of the original settlement of the entire western hemisphere. In this setting the narrow neck of land is presumed to be the Isthmus of Panama, which divides the North and South American landmasses. The text does not suggest Book of Mormon peoples were: 'living in one small part of a vast continent.' Rather, 'Their thinking is continental, if not hemispheric.'¹⁴ The populations grew rapidly to 'cover the face of the whole earth, from the sea south to the sea north, from the sea west to the sea east' (Helaman 3: 8). According to the Book of Mormon, the voyaging Israelites arrived in a land 'kept as yet from the knowledge of other nations' (2 Nephi 1: 8-9). There are no (*direct*) references to non-Israelite peoples in the New World during the several millennia covered by the Book. At first the hemispheric orientation provided an explanation for the presence of peoples in the New World prior to European exploration. It also appeared to explain the origins of mounds and ruins whose construction most nineteenth century North Americans (of European descent) ethnocentrically believed were beyond the capabilities of the American Indians.

Polynesian members of the Church also believe they are descendants of the Lamanites. Mormon folklore links the Book of Mormon sailor Hagoth, who lived in about 54 BC, with the colonization of the Pacific. Hagoth's ships were launched into the West Sea to transport large numbers of men, women, and children and their provisions to lands northward (Alma 63:5). Curiously, the

¹³ Earl Wunderli, "Critique of a Limited Geography for Book of Mormon Events," *Dialogue: A Journal of Mormon Thought* 35 (2002): 161-197, 184.

¹⁴ Wunderli, "Critique of a Limited Geography," 179.

Polynesian-Lamanite connection does not align with the short Hagoth account. The Book of Mormon says the adventurer Hagoth, and the people who entered his ships, were in fact white-skinned Nephites. The story of the unique Polynesian links to the Book is told in Chapter 9.

B. Latter day Lamanites

There is abundant evidence that Joseph Smith believed Book of Mormon people inhabited the two hemispheres. He regularly used the term 'Lamanite' to describe North American indigenous peoples (See D&C 3, 10, 19, 28, 30, 32, 49, 54). On occasions when he summarized the Book and its content, Smith used the following terms:

The Book of Mormon is a record of the forefathers of our western tribes of Indians; having been found through the ministration of an holy angel and translated into our own language by the gift and power of God, after having been hid up in the earth for the last fourteen hundred years, containing the word of God which was delivered unto them (the ancestors of the American Indians). By it we learn that our western tribes of Indians are descendants from that Joseph who was sold into Egypt, and the land of America is a promised land unto them, and unto it all the tribes of Israel will come, with as many of the Gentiles as shall comply with the requisitions of the new covenant.¹⁵

I was also informed concerning the aboriginal inhabitants of this country, and shown who they were, and from whence they came; a brief sketch of their origin, progress, civilization, laws, governments and iniquity, and the blessings of God being finally withdrawn from them as a people was made known unto me.¹⁶

Joseph Smith also received divine revelations concerning the whereabouts of the Lamanites before commissioning missionaries to their labors. Speaking to Newel Knight in 1831 he said 'And thus you shall take your journey into the regions westward, unto the land of Missouri, unto the borders of the Lamanites' (D&C 54: 8, See also D&C 28:8-9; 30:6; 32: 2).¹⁷

One incident, regarding the *identification* of the Lamanite warrior-general 'Zelph', is particularly revealing as it captures the extent of Smith's geographical thinking. In June 1834, members of a Mormon expedition, which included Smith, excavated a mound approximately one mile south of what is now Valley City, Illinois. Inside the mound they found human

¹⁵ Smith, *History of the Church*, 1: 315.

¹⁶ Smith, *History of the Church*, 1: 431. In contrast, apologist Roper claims: 'Although clearly a popular theory among Latter-day Saints, it is less clear how much of this hemispheric view reflected Joseph Smith's ideas or, more important for Latter-day Saints, which, if any, were based on prophetic revelation.' Mathew Roper, "Limited Geography and the Book of Mormon: Historical Antecedents and Early Interpretations," *The FARMS Review* 16 (2004): 225-275, 232.

¹⁷ See Klaus Hansen, *Mormonism and the American Experience* (Chicago: University of Chicago Press, 1981) 9, 11; Terryl Givens, *By the Hand of Mormon: the American Scripture that Launched a New World Religion* (Oxford: Oxford University Press, 2002), 68.

remains; a few bones, a broken femur and an arrowhead. Several corroborating accounts of Smith's reaction to the recovery of the artifacts survive. The following excerpt is taken from the journal of Wilford Woodruff, a future President (1889-1898) of the Church:

Brother Joseph had a vision respecting the person. He said he was a white Lamanite. The curse [of dark skin] was taken from him or at least in part. He was killed in battle with an arrow. The arrow was found among his ribs. One of his thigh bones was broken. This was done by a stone flung from a sling in battle years before his death. His name was Zelph. ... He was a warrior under the great prophet /Onandagus/ that was known from the hill Cumorah /or east sea/ to the Rocky mountains. The above knowledge Joseph received in a vision.¹⁸

Smith's correspondence with his wife Emma, written the day after the recovery of Zelph, further reveals the expanse of his geographical views:

The whole of our journey, in the midst of so large a company of social honest and sincere men, wandering over the plains of the Nephites, recounting occasionally the history of the Book of Mormon, roving over the mounds of that once beloved people of the Lord, picking up their skulls and bones, as a proof of its divine authenticity, and gazing upon a country the fertility, the splendour and the goodness so indescribable, all serves to pass the time away unnoticed.¹⁹

According to Wunderli, Smith all but named the 'land southward' as South America. At one stage Smith *revealed* that Lehi's party landed at what is now Valparaíso in Chile. These references—like the more specific assertions that the Book of Mormon river Sidon is the Magdalena River in Columbia—all illustrate Smith's commitment to the events of the Book of Mormon occurring throughout the Americas.²⁰ Even after publications like Stephens' *Incidents of Travel in Central America, Chiapas, and Yucatan* (1841) popularized the discovery of ruins in Central America, appreciably heightening interest in that region, Smith, and *all* Church leaders who have followed him, continued to identify *all* indigenous peoples of the Americas and Polynesia as (descendants of the) Lamanites.²¹

Today, most Native American and Polynesian Latter-day Saints throughout the world regard the Israelite Lehi to be a blood relative. These genealogical

¹⁸ Quoted in Kenneth Godfrey, "What is the Significance of Zelph in the Study of Book of Mormon Geography?" *Journal of Book of Mormon Studies* 8 (1999): 70-79, 75; Roper, "Limited Geography," 240. Roper argues that 'there is some justification for believing that this geographical point was merely an early interpretation rather than part of a revelation about Zelph.' Notably, the great prophet Onandagus is not mentioned in the Book of Mormon.

¹⁹ Godfrey, "What is the Significance of Zelph," 72.

²⁰ John Clark, "Evaluating the Case for a Limited Great Lakes Setting," *FARMS Review of Books* 14 (2002): 1-59, 36. Clark argues that Smith's ongoing speculation suggests uncertainty over the precise location of the Book of Mormon lands and, implicitly, makes Book of Mormon geography an open question.

²¹ LG apologists emphasize Smith's input into *Times and Seasons* editorials linking Catherwood's Central American discoveries with the Book of Mormon. See Matthew Roper, P.J. Fields, and A. Nepal *Journal of the Book of Mormon and Other Restoration Scripture* 22 (2013): 84-97.

bonds with father Lehi are reinforced in institutionalized blessings, known as patriarchal blessings, that are given to adult members of the Church.²² Like Jews, Mormons believe they are God's chosen people, adopted into the ecclesiastical kingdom of Israel upon baptism into the Church. The patriarchal blessing generally promises good fortune for the recipient, then reveals which tribe of the House of Israel the person belongs to, either through adoption or literal blood ties. Most Mormons belong to the tribes of Ephraim or Manasseh in reference to the sons of Joseph whom Jacob predicted would grow into 'a fruitful bough ... whose branches run over the wall' (Gen. 49:22). The vast majority of non-Lamanite Mormons are told they belong to the tribe of Ephraim. Native American and Polynesian Mormons, however, are more often identified as members of the tribe of Manasseh, through which Lehi traced his ancestry (Alma 10:3).

In recent decades LDS Church Presidents have perpetuated the Lamanite belief in public statements; particularly at the dedication of temples in 'Lamanite' lands. The revered Book of Mormon prophet Lehi has only ever been mentioned in Temple Dedicatory prayers in Central and South American and Polynesian countries. The following are examples of recent statements by Church leaders.

Honduras: 'Our hearts are filled with gratitude for Thy blessing of the sons and daughters of Lehi. Thou hast heard their cries and seen their tears. Thou hast accepted their righteous sacrifices.' (President Dieter F. Uchtdorf's dedicatory prayer) in *LDS Church News* (17 March 2013).

Mexico: 'We invoke Thy blessings upon this nation of Mexico where so many of the sons and daughters of Father Lehi dwell' (President James E. Faust's dedicatory prayer) in *LDS Church News* (18 March 2000).

Ecuador: President Gordon B. Hinckley noted that 'it has been a very interesting thing to see the descendants of Father Lehi in the congregations that have gathered in the temple. So very many of these people have the blood of Lehi in their veins ...' in *LDS Church News* (7 August 1999).

New Zealand: 'We express gratitude that to these fertile Islands Thou didst guide descendants of Father Lehi' (President David O. McKay's dedicatory prayer, 20 April 1958)

The current prophet, President Russell M. Nelson, clearly believes the Lamanites were occupants of both hemispheres. Speaking to 22,000 Latter-day Saints gathered in Guatemala City in August 2019, the first leg of a five-country tour of Latin America, President Nelson said:

²² Southerton *Losing a Lost Tribe* 37-38.

The lands of Central America and South America are studded with ruins—remnants—of ancient civilizations, ... One wonders what life must have been like among those people.

Add to that the message on the title page of the Book of Mormon, that it is 'written to the Lamanites, who are a remnant of the house of Israel,' we not only learn more about those ancient inhabitants, but we learn that the Lord cares for His children in this hemisphere, both in ancient times, and in modern times.²³

From its founder Joseph Smith through to its current prophet President Russell M. Nelson, all LDS prophets have consistently taught that the Indigenous peoples of the New World are descendants of the Book of Mormon Lamanites. Consequently, popular Mormon thought about the Lamanite ancestry of all Native Americans is deeply implanted in modern Latter-day Saint culture. Millions of Latin American Mormons hold fast to their Lamanite heritage. The belief is swept along through generations attending weekly Sunday School, Seminary and Institute classes (formal religious instruction for youth and young adults respectively) and by proselyting missionaries preaching throughout the world. Church leaders seem reluctant or powerless to contain this belief which is so intricately woven into the fabric of the faith.

²³ Sarah Weaver "Latin America Ministry Tour: President Nelson asks Guatemalan Latter-day Saints to remember this simple advice" *LDS Church News* (24 Aug 2019).



2. Problems with Book of Mormon history

A. Contemporary influences

From a scientific perspective, the Book of Mormon's origin is best situated in early nineteenth century America, and Lamanite genesis can only be traced historically to ca. 1828. The term Lamanite is a modern social and political designation that lacks a verifiable biological or historical underpinning linking it to ancient American Indians. The Book of Mormon emerged from an antebellum perspective, out of a frontier American people's struggle with their god, and not from an authentic American Indian perspective.²⁴

Many scholars have looked beyond frontier American prophets, angelic visitors, and gold plates to deduce the origins of the Book of Mormon. The Book's descriptions of the degraded Lamanite race mirror Indian stereotypes that were widely accepted in Joseph Smith's community.²⁵ Fortunately, our present-day understandings of the Indigenous founders of the New World have been liberated from the prevailing opinions of earlier centuries.

For most of the nineteenth century North Americans believed Native Americans were responsible for exterminating an enlightened race of 'Mound Builders' who had once inhabited the Ohio and Mississippi valleys.²⁶ As early settlers cleared land west of the Appalachian Mountains they encountered thousands of mounds hidden under centuries of forest regeneration. Grave digging for artifacts, especially in the more elaborately adorned mounds, became a popular pastime. The artifacts—decorated pipes, jewelry,

²⁴ Thomas Murphy, 'Lamanite Genesis, Genealogy, and Genetics' in *American Apocrypha: Essay on the Book of Mormon* eds D. Vogel and B. Metcalfe (Salt Lake City, Signature Books, 2002) 47-77, 68.

²⁵ Fawn M. Brodie *No Man Knows My History: The Life of Joseph Smith, the Mormon Prophet*, 2nd ed. (New York: Knopf, 1971).

²⁶ Southerton *Losing a Lost Tribe* 17-31.

breastplates, and ornaments—were crafted from native copper and occasionally coated in gold and silver, clearly indicating that a nation of skillful artisans had once inhabited the land. Caleb Atwater, an early surveyor of antiquities of Ohio, concluded in 1820 that the tumuli ‘owe their origin to a people far more civilized than the Indian but far less so than Europeans’.²⁷ It was soon widely believed that a civilized race from the Old World had built the mounds.

Compelling evidence for the cultural superiority of the Mound Builders was their alleged level of skill in metallurgy. Atwater’s observations reflected the conventional wisdom that the Mound Builders had been skilled in the mining and smelting of iron, copper, gold, and silver. It would be many decades before it was discovered that the copper originated from unusually pure natural deposits in Michigan, that the gold and silver had originated in alluvial deposits, and that artifacts once thought to be made of steel were likely made of meteoric iron.



Figure 2. The Mound Builders warring with the Indians

This classic illustration of an ‘ancient American battle-mound’ is from the *Traditions of De-Coo-Dah* by William Pidgeon (1858).

Frontier antiquarians speculated wildly about the origins and mysterious disappearance of the Mound Builders (Figure 2). Many assumed the mounds were built by descendants of the Lost Tribes of Israel who had made their

²⁷ Caleb Atwater (1820) “Description of the Antiquities Discovered in the State of Ohio and other Western States”. Transactions and Collections of the American Antiquarian Society.

way across the ocean after their dispersal by the Assyrians. For those who subscribed to the Lost Tribe theory, the cause of the disappearance of the enlightened race and cessation of mound building was simply attributed to the local Indians.

Some deep national need was fulfilled by the myth of the Mound Builders, and debunkers were unpopular. The dream of a lost prehistoric race in the American heartland was profoundly satisfying; and if the vanished ones had been giants, or white men, or Danes or Toltecs, or giant white Jewish Toltec Vikings, so much the better. The people of the United States were then engaged in undeclared war against the Indians who blocked their path to expansion, transporting, imprisoning, or simply massacring them; and as this century-long campaign of genocide proceeded, it may have been expedient to conjure up a previous race whom the Indians had displaced in the same way. Conscience might ache a bit over the uprooting of the Indians, but not if it could be shown that the Indians, far from being long established settlers in the land, were themselves mere intruders who had wantonly shattered the glorious Mound Builder civilization of old.²⁸

In the haste of colonization, most of the mounds were leveled and their contents plundered. However, in the latter half of the nineteenth century, the Smithsonian Institution and Harvard University's Peabody Museum undertook less speculative studies. Increasingly, scholars opposed the prevailing Mound Builder hypothesis, arguing instead that the earthworks contained the deceased ancestors of the surviving Indigenous tribes. Cyrus Thomas of the Smithsonian Institution effectively demolished the myth in 1894. Thomas published a monumental work that presented all of the bureau's data on the mounds, essentially ending an era of speculation among professional archaeologists.²⁹ The large burial mounds, elaborate mortuary practices, and geometric earthworks of the Ohio and Illinois Valleys were the handiwork of Native Americans who practiced what are now known as the Adena and Hopewell cultural traditions.

Joseph Smith was raised in western New York, a region rich in Indian relics, where hundreds of mounds dotted the countryside. The Smith home, near the town of Palmyra, was located within a few miles of at least eight mounds. Newspapers, including those in Smith's hometown, buzzed with speculation about who the 'mound builders' were and how they came by their refined culture. The Smith family, in particular Joseph, fell under the spell of the mounds and could not resist the lure of buried riches. Residents in eighteen locations around Manchester, South Bainbridge, Colesville, and Windsor in New York State and Harmony, Pennsylvania, were witnesses to

²⁸ Robert Silverberg *Mound Builders of Ancient America: The Archaeology of a Myth*. (Athens, Ohio: Ohio University Press, 1968). 57-58.

²⁹ Gordon R. Willey and Jeremy A. Sabloff, *A History of American Archaeology*, 2nd ed. (San Francisco: W. H. Freeman and Company, 1980).

Smith family treasure quests.³⁰ When Joseph Smith was twenty years old, he admitted using a 'seer' or 'peep' stone to assist him 'locate hidden treasures in the bowels of the earth'. This extraordinary confession was elicited during a trial in Bainbridge in March 1826 when he had been charged with being disorderly and an impostor in consequence of his 'money digging' activities. Eighteen months later, Joseph Smith came into possession of the gold plates from which the Book of Mormon was translated.

Most secular historians would agree with Klaus Hansen's assessment of Book of Mormon origins: 'The virtually innumerable parallels between the historical climate and Smith's own ideas are simply too strong to allow them to be dismissed as being coincidental.'³¹ Scholars think it is highly likely that Joseph Smith was familiar with Ethan Smith's *View of the Hebrews* (1823), which presents thematic similarities with the Book of Mormon narrative.³² One obvious connection with *View of the Hebrews* is through Oliver Cowdery, whose family attended the congregation led by Ethan Smith from 1821 to 1826. This was just before Cowdery joined Smith to work on what became the Book of Mormon.³³ This excerpt from *View of the Hebrews* reveals its close parallels with the central narrative of the Book of Mormon.

The probability then is this; that the ten tribes, arriving in this continent with some knowledge of the acts of civilized life; finding themselves in a vast wilderness filled with the best game, inviting them to chase; most of them fell into a wandering idle hunting life. Different clans parted from each other, lost each other, and formed separate tribes. Most of them formed a habit of this idle mode of living, and were pleased with it. More sensible parts of this people associated together, to improve their knowledge of the arts; and probably continued thus for ages. From these the noted relics of civilization discovered in the west and south were furnished. But the savage tribes prevailed; and in process of time their savage jealousies and rage annihilated their more civilized brethren. And thus, as a holy vindictive Providence would have it, and according to ancient denunciations, all were left in an "outcast" savage state. This accounts for their loss of the knowledge of letters, of the art of navigation, and of use of iron. ... It is highly probable that the more civilized part of the tribes of Israel, after they settled in America, became wholly separated from the hunting and savage tribes of their brethren; ... [and] that tremendous wars were frequent between them and their savage brethren, till the former became extinct. (*View of the Hebrews* 1825, 172-73)

The prevalence of ideas about an early presence of lost Israelite tribes in the Americas, beliefs about an extinct race of technologically advanced mound

³⁰ Dan Vogel, *Indian Origins and the Book of Mormon: Religious Solutions from Columbus to Joseph Smith*. (Salt Lake City: Signature Books, 1986); Dan Vogel "The Locations of Joseph Smith's Early Treasure Quests," *Dialogue: A Journal of Mormon Thought* 27 (1994):197-231.

³¹ Hansen, *Mormonism and the American Experience*, 14-15.

³² Another contemporary text with overlapping themes is James Adair, *History of the American Indians* (1775). Though, the idea of an Israelite presence dates back at least to Gregorio Garcia, *Origins of the Indians of the New World* (1607).

³³ Ethan Smith was not (closely) related to Joseph Smith.

builders, along with Smith's preoccupation with buried treasure cast doubt on the originality and authenticity of the Book of Mormon.³⁴ To this cultural milieu can be added the recollections of Smith's mother. Lucy Mack Smith wrote of a young Joseph regaling the family with detailed stories about the ancient Americas, prior to the recovery of the golden plates.

During our evening conversations, Joseph could occasionally give us some of the most amusing recitals that could be imagined. He would describe the ancient inhabitants of this continent, their dress, mode of travelling, their buildings, with every particular; their mode of warfare; and also their religious worship. This he would do with as much ease seemingly, as if he had spent his whole life among them.³⁵

There is one additional episode which deserves consideration in as much as it sheds light on Smith's credibility, particularly as it relates to his ability to translate ancient writings. In 1966 Egyptian papyri, once owned by Smith and *translated* into parts of the Mormon scriptural canon (the book of Abraham) were recovered along with the receipt of sale from Smith's widow. When the papyri used in the production of these Mormon scriptures were examined by Egyptologists from the Universities of California and Chicago, these specialists found that they bore no resemblance to Smith's translations. Rather, the papyri were common funeral texts from the Book of the Dead; specifically the *Breathing Permit of Hor*.³⁶

B. Racial theology

The questionable notion that God would punish his rebellious children with a dark skin first appears with the Book of Mormon Lamanites (2 Nephi 5: 21). However, Joseph Smith soon received further revelations that would mire the Mormon Church in racial controversy for most of its history. In 1830 Smith produced a revised Genesis account—the canonized book of Moses—into which he inserted a prophecy of Enoch explaining that the 'seed of Cain were black' (Moses 7: 22). In a follow up revelation—the canonized book of Abraham—Smith reveals how the 'curse of Cain' was transmitted through the Flood, since only Noah and his family survived. According to the book of Abraham, the lineage of Ham, the oldest of Noah's sons, 'preserved the curse in the land' (Abraham 1: 24). We also learn that Ham's grandson, Pharaoh,

³⁴ For more on Smith's preoccupation with 'money-digging' see Givens, *By the Hand of Mormon*, 18-19. Richard Bushman, *Joseph Smith and the Beginnings of Mormonism* (Chicago: University of Illinois Press, 1984) 74-76;

³⁵ Lavinia Fielding Anderson ed., *Lucy's Book: A critical Edition of Lucy Mack Smith's family Memoir* (Salt Lake City: Signature Books, 2001).

³⁶ Stan Larson, "Thomas Stuart Ferguson and the Book of Mormon Archaeology," in *Mormon Mavericks: Essays on Dissenters*, eds John Sillito and Susan Staker (Salt Lake City: Signature Books, 2002) 243-283, 255-258.

who settled in Egypt after the flood waters had receded, was ‘of that lineage by which he could not have the right of the Priesthood’ (Abraham 1: 26).

Until 1978 the LDS Church denied the Mormon priesthood to Africans based largely on the authority of the book of Abraham. This meant African men could not hold callings or serve missions and their families were denied temple rites that Mormons believe bind families together for eternity and are essential for salvation. This institutional racism has sparked some of the most severe criticism the Church has experienced. Finally, in 1978 the Prophet Spencer W. Kimball announced he had received revelation allowing all worthy male members of the Church to hold the priesthood (D&C Official Declaration 2).

In its 2014 ‘[Race and the Priesthood](#)’ essay the Church attempted to downplay the role the book of Abraham played in the priesthood ban. The essay states the policy ‘echoed the widespread ideas about racial inferiority’ of the time. While the Church is attempting to distance itself from ‘theories advanced in the past that black skin is a sign of divine disfavor or curse’, the Church still stands behind the problematic scriptures that once provided its theological foundation. The Church recently conceded that ‘None of the characters on the papyrus fragments mentioned...any of the events recorded in the book of Abraham.’ Rather, ‘they catalyzed a process whereby God gave to Joseph Smith a revelation about the life of Abraham’.

C. Book of Mormon anachronisms

The more we learn, the more inconclusive the Book of Mormon version of ancient America becomes.³⁷

The Book of Mormon records the presence of numerous plants and animals, familiar to those raised in a Western culture, which do not correspond with the archaeological record of the ancient Americas. For example, the Book refers to wheat, barley, figs, grapes, asses, bulls, calves, cattle, cows, goats, horses, oxen, sheep, sows and elephants, whose presence is inconsistent with what is known about the New World.³⁸ Evidence of New World horses, and the closest relatives of elephants (mammoth and mastodons), disappears from the archaeological record—along with about 30 other large mammals—between 13,800 and 11,400 years ago.³⁹ Equally surprising, there are no

³⁷ Dan Vogel and Brent Lee Metcalfe, “Editors’ Introduction,” in *American Apocrypha: Essay on the Book of Mormon*, eds D. Vogel and B. Metcalfe (Salt Lake City: Signature Books, 2002) vii-xvii, vii.

³⁸ Thomas Murphy, “Simply Implausible: DNA and a Mesoamerican Setting for the Book of Mormon,” *Dialogue: A Journal of Mormon Thought* 36 (2003): 109-131, 124. Murphy explains that barley found in Arizona, Illinois and Oklahoma is a New World strain not found elsewhere on the two continents.

³⁹ J. Tyler Faith and Todd A. Surovell “Synchronous extinction of North America’s Pleistocene mammals” *Proceedings of the National Academy of Sciences USA* 106 (2009): 20641–20645.

textual references to, or metaphors drawn from, known New World staples such as cocoa, beans, squash, potatoes, tomatoes, peppers, avocados, or sapodilla.

Apparently Book of Mormon people were skilled metallurgists with ‘bellows, brass, breastplates, chains, copper, engravings, gold, hilts, iron, ore, ploughshares, silver, steel, tools and swords’. Few of these are supported by archaeological evidence. Thomas Murphy explained the Book’s unfavorable position:

Evidence of pre-Columbian metalworking—shaping metals like gold, silver, and copper by cold hammering—is found in Peru by about 1000 B.C. for gold and silver and by 500 A.D. for copper, but not in Mesoamerica until the ninth century A.D. Evidence for pre-Columbian iron metallurgy, which requires temperatures of 700° to 800°, is absent from the entire New World.⁴⁰

The Book of Mormon describes chariots, bows and arrows, swords and great battles between armies comprising hundreds of thousands of soldiers (e.g. Ether 7: 9, 9: 27, 13: 18). To date, no metal swords or Book of Mormon battlefields have ever been identified. Bow and arrow technology—a relatively recent North American innovation—did not reach Central Mexico until after 500 AD and the Maya until 900 AD.⁴¹ Additionally, apart from a few small artifacts—which may have been toys—there is no evidence that the wheel was used prior to the arrival of Europeans.

With respect to linguistics, evidence for the influence, or even presence, of Hebrew and Egyptian scripts is lacking throughout the New World. No personal name or Book of Mormon place names have been discovered: ‘the deciphering of Mayan hieroglyphics has not produced the name of a Nephite or a Book of Mormon worldview.’⁴²

There is no identification in the Book of Mormon of a city, a sea, or any other place with a counterpart on a modern map. ... Nor are there, apparently, any names of places in the Book of Mormon surviving in the archaeological record to date.⁴³

Writing in the 1970s, prominent Yale archaeologist Michael Coe—one of few non-Mormon scholars to have read the Book—summarized the position:

The bare facts of the matter are that nothing, absolutely nothing, has ever shown up in any New World excavation which would suggest to a dispassionate observer that

⁴⁰ Murphy, “Simply Implausible,” 124. Compare Wm. Revell Phillips, “Metals of the Book of Mormon,” *Journal of Book of Mormon Studies* 9 (2000): 36-41.

⁴¹ Steve Allely and Jim Hamm *Encyclopedia of Native American Bows, Arrows & Quivers: Volume I: Northeast, Southeast, And Midwest*. (Lyons Press, New York 1999).

⁴² Vogel and Metcalfe, “Editors’ Introduction,” vii.

⁴³ Wunderli, “Critique of a Limited Geography,” 172.

the Book of Mormon, as claimed by Joseph Smith, is a historical document relating to the history of early migrants to our hemisphere.⁴⁴

More than two decades later Coe echoed his earlier comments, characterizing the Book of Mormon as 'a fanciful creation by an unusually gifted individual living in upstate New York in the early nineteenth century.'⁴⁵ Mormon apologists have dismissed Coe's claims because they are based on the 'unfortunate assumption that the Book of Mormon account is about events involving American Indians throughout the entire New World'.⁴⁶

Despite the considerable array of seemingly corrosive evidence spanning every relevant research discipline, most Latter-day Saints have maintained their commitment to the Book of Mormon as an authentic translation and continue to consider Native Americans and Polynesians as Lamanites. The majority of the 4 million Mormons in Latin America and Polynesia hold fast to their Lamanite heritage. However, Latter-day Saint belief in genetic ties to ancient Book of Mormon Israelites have been seriously challenged in recent years by research in the burgeoning field of human population genetics.

⁴⁴ Michael D. Coe, "Mormons and Archaeology: An Outside View," *Dialogue: A Journal of Mormon Thought* 8 (1973): 40-48, 46.

⁴⁵ Cited in Richard Ostling and Joan Ostling, *Mormon America: The Power and the Promise* (San Francisco: Harper, 1999).

⁴⁶ John L. Sorenson, "Digging into the Book of Mormon: Our hanging Understanding of Ancient America and Its Scripture", *Ensign*: 27, September 1984.



3. DNA genealogy

Population genetics is providing the latest and most compelling evidence that essentially all of the ancestors of Native Americans originated in Asia. This technology has been used to establish the fact that the genomes of pre-Columbian Native Americans are unquestionably far more similar to the genomes of Asians than any other population on earth. Given the number of studies carried out to date, no amount of future research will change this fact. The objective power of DNA analysis stems from the fact that it is grounded in well-established principles of mathematics. The degree of relatedness between people and populations is calculated by counting up the number of differences seen in their DNA. The more closely related two groups are, the fewer differences are seen in their DNA. The more recent whole genome studies are particularly powerful because of the richness and scale of the genealogical information they are uncovering.

Molecular genealogists are able to track prehistoric human migrations around the globe by tracing the DNA linkages of extant populations back to their ancestral origins. Human genealogy is made possible because DNA accumulates mutations, commonly referred to as 'markers', and does so at a relatively stable rate over long periods of time.⁴⁷ People and populations who share these rare DNA markers are clearly descended from common ancestors.

A. Mitochondrial and Y chromosome DNA

Most human DNA resides on the chromosomes, which undergo complex rearrangements each generation. The enormous size of the genome, combined

⁴⁷ The most common type of markers are single nucleotide polymorphisms (SNPs, pronounced 'snip')

with this generational shuffling, thwarted early attempts to use it to trace ancestral history. Consequently, the first human molecular genealogists focussed on DNA that is less challenging to work with. Y chromosome DNA is passed intact from father to son and can be studied to reveal paternal ancestries. Female ancestries are followed by tracing the inheritance of mitochondrial DNA (mtDNA) which is located in the mitochondria, small compartments in our cells that generate energy (Figure 3). Mitochondria are passed from mothers to their offspring via the egg cell, and the mtDNA they contain can be used to reveal maternal ancestries.

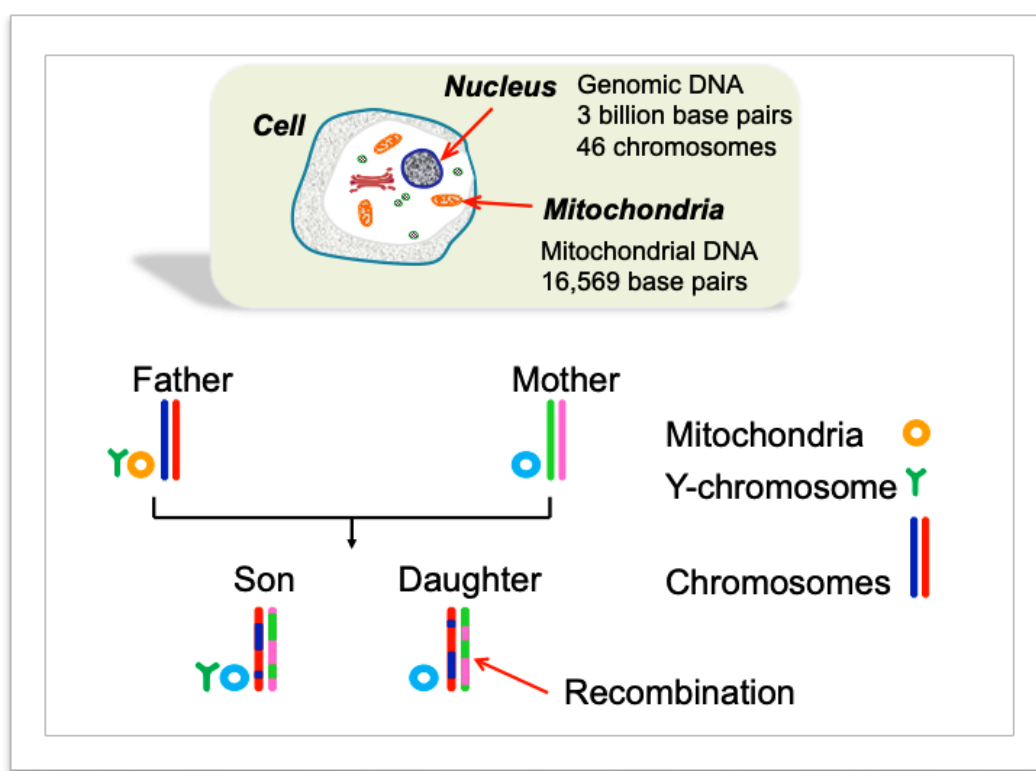


Figure 3. The location and inheritance of human DNA.

All of the billions of cells in the human body have an identical copy of our DNA. Over 99.9% of the DNA is found in the chromosomes, which are located in the nucleus. A small proportion of human DNA is located in small energy-producing compartments known as mitochondria. Genomic DNA is passed down each generation as shuffled rearrangements (due to recombination) of matching parental chromosomes. MtDNA is passed from mothers to offspring and Y chromosome DNA is passed from father to son.

DNA markers are used to define specific DNA lineages, and family trees of related lineages have been constructed for paternal and maternal DNA. Virtually all human mitochondrial lineages, for example, can be classified into one of about 25 large lineage families or 'haplogroups'; each denoted by a letter of the alphabet. Scientists have now examined DNA variation in Y

chromosome and mtDNA from tens of thousands of individuals from many global populations. They have observed that individuals from related populations frequently share common DNA lineages (Figure 4).

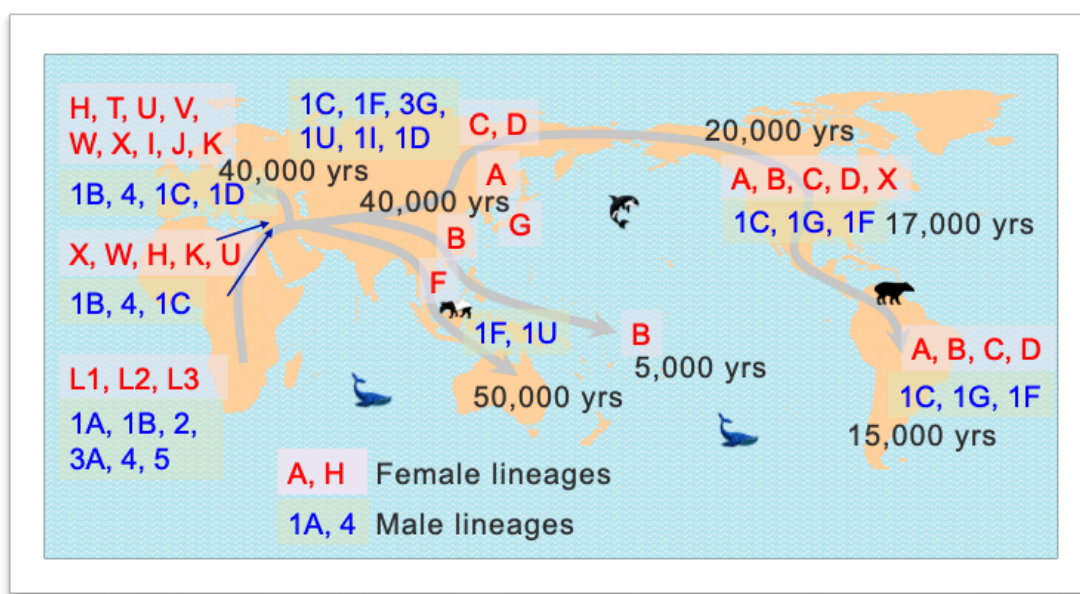


Figure 4. Global distribution of human mitochondrial and Y DNA haplogroups.
Adapted from Southerton, *Losing a Lost Tribe* 69.

New mutations arise in mtDNA and Y-DNA at a relatively constant rate. Consequently, the number of DNA differences observed between different lineages can be used to estimate how long ago these lineages shared a common ancestor. The distribution of mtDNA and Y-DNA lineages throughout the world, and the time depths to common ancestral lineages, have enabled scientists to track prehistoric paths of human migration across the globe from our ancestral homeland in Africa (Figure 4). This research has also been particularly informative in regions most recently settled by humans; such as the New World and Polynesia.

B. Unlocking the genome

Major technological advances since the turn of the century are now allowing molecular anthropologists to tap the genealogical riches of the entire human genome (3 billion bases). This included sequencing the entire human genome, and soon afterwards, the development of highly efficient and inexpensive methods for identifying the millions of genetic markers it contains.⁴⁸ Large subsets of genomic markers, numbering in the tens of thousands, are unique to particular populations, allowing anthropologists to trace ancestry using the

⁴⁸ Entire issues of *Nature* ([Volume 409, 15 February 2001](#)) and *Science* ([Volume 291 15 February 2001](#)) were devoted to the publication of the human genome.

whole genome. Human genealogy companies like Ancestry DNA and Family Tree DNA routinely use the same technology to reveal where our more recent ancestors came from around the globe.

The application of whole genome technology has also led to some extraordinary genealogical revelations among our more distant ancestry. In 2010, researchers succeeded in sequencing the genome of Neanderthals, an archaic human species who lived in Eurasia until about 40,000 years ago.⁴⁹ When they compared the Neanderthal and human genomes scientists discovered that humans living outside of Africa contained between 2.5 and 4 percent Neanderthal DNA, a legacy of breeding between humans and Neanderthals about 50,000 years ago. Two years later scientists were more surprised to discover another distant relative lurking in our DNA, after they sequenced the genome of an archaic human who once inhabited the Denisova Cave in the Altai Mountains of Central Asia. Analysis showed 'Denisovans' were more closely related to Neanderthals but that modern human genomes contained Denisovan DNA; ranging from 0.2% in mainland Asia to as high as 5% in Papua New Guinea and Australia.⁵⁰ Thus, at least two distinct human groups, Neanderthals and the related Denisovans, inhabited Eurasia when modern humans emerged from Africa about 60,000 years ago.

A powerful feature of the whole genome technology is that it can reveal approximately *when* ancestral populations began mixing with each other. The chromosomes a parent passes to their children contains chunks (or tracts) from each of their parents' chromosomes due to a process called 'recombination'. This generational chopping reduces the size of intact chromosomal chunks derived from a particular ancestor in succeeding generations (Figure 5). By measuring the average size of the chunks researchers can estimate how many generations have passed since the ancestral populations first mixed. The length of intact chromosomal tracts can be measured using thousands of DNA markers scattered all along the chromosomes. Ancestry tract length (or tract) analysis has been used to estimate when European groups first 'admixed' with Native American populations (see Chapters 4C and 7B).

⁴⁹ Richard E. Green et al. "A draft sequence of the Neandertal genome" *Science* 328 (2010) 710–722.

⁵⁰ Matthias Meyer et al. A high-coverage genome sequence from an archaic Denisovan individual. *Science* 338 (2012): 222–226 and Kay Prufer et al., "The complete genome sequence of a Neanderthal from the Altai Mountains" 505 (2014): 43–49.

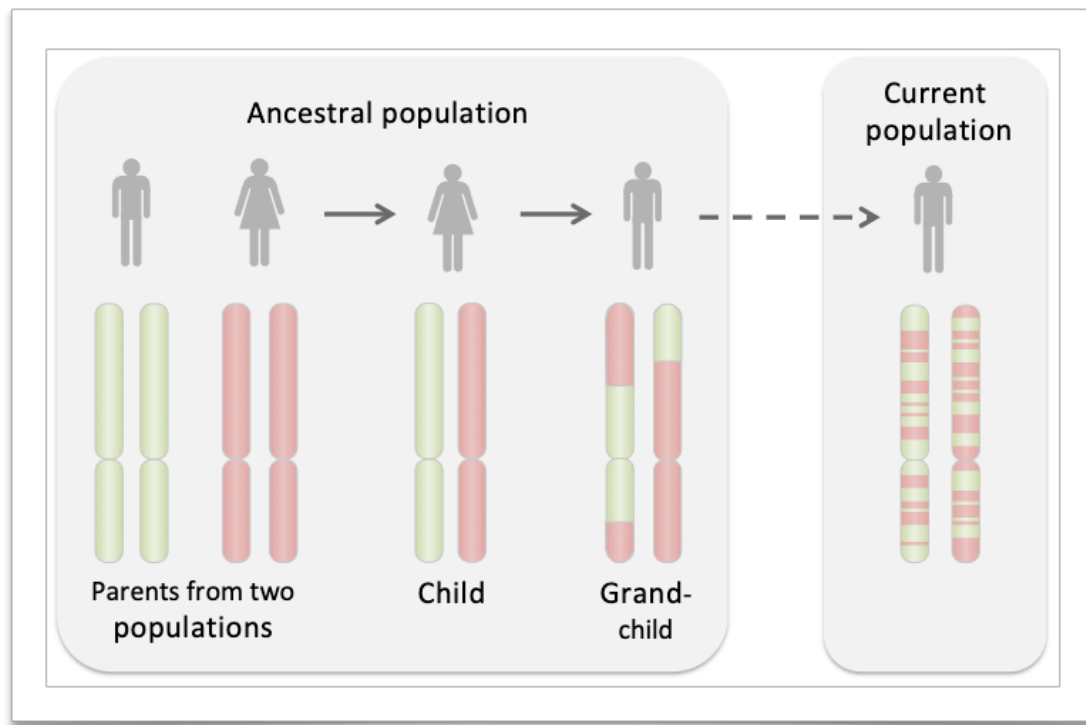


Figure 5. Estimating the date of ancestral mixing between populations by tract analysis

The diagram illustrates the entry of a European (green chromosome) into an Indigenous American's (red) family tree. Children inherit one set of chromosomes from each parent. In later generations that DNA is cut into smaller and smaller chunks by the process of recombination. Researchers can estimate how many generations have passed since ancestral populations mixed by measuring the average size of the chunks.

Unlocking the human genome is allowing researchers to overcome some of the limitations of mtDNA and Y-DNA research. Due to their unique pattern of inheritance, mtDNA and Y-DNA can each only tell us about one line in our family history. For example, they can both only tell us about one female and one male among our 1,024 ancestors from just ten generations ago. Whole genome analysis, on the other hand, can reveal the nature of the DNA we inherit from all 1,024 ancestors. The various contributions of mtDNA, Y-DNA and whole genome studies to our understanding of the ancestry of Native Americans is considered in the next chapter.



4. Origin of Indigenous Americans

The recent emergence of DNA-based ancestry studies on Native Americans has refined, rather than dramatically altered, the findings of generations of anthropologists, archaeologists and linguists regarding the colonization of the Americas.⁵¹ These earlier studies have demonstrated that virtually, and most likely, all American peoples living before the arrival of Europeans in 1492 were the descendants of ancient Asian migrants. The powerful synergies between population genetics and anthropology is reflected in the fact that DNA research is increasingly performed in biological anthropology departments at many universities. A brief sketch of the broader picture of New World anthropological research will help situate the contribution being made by the more recent DNA research.

A. New World anthropology

There has been a century-long consensus that the Americas were first settled by people migrating out of Asia, from the environs of Lake Baikal in southern Siberia, across an ice age exposed land bridge between 30,000 and 13,000 years ago. At the peak of the Wisconsin Ice Age, 18,000 years ago, world sea levels were more than 300 feet (91 meters) below their present levels, exposing a wide, flat land known as Beringia that linked Siberia and Alaska. The drop in sea levels occurred as large amounts of the earth's water became trapped in polar ice sheets. Most scholars consider that the first immigrants were family groups of nomadic Siberian hunters who followed herds of bison and mammoth across the bleak 1,000-kilometer-wide wilderness that joined the two continents. It is unlikely they were aware they were entering a

⁵¹ Dorothy Nelkin and Susan Lindee, *The DNA Mystique: The Gene as a Cultural Icon* (New York: Freeman, 1995).

continent where mankind had never before set foot. About 10,000 years ago, as the earth was warming, the land bridge was resubmerged and the two continents became detached.⁵² Since then, the Bering Strait has hindered movement between the continents, but it is not an absolute barrier. In the most severe winters, ice forms between the two continents that is solid enough to walk on.

The most striking evidence of the widespread early colonization of the Americas is the discovery of thousands of 13,000-year old fluted Clovis spear points scattered all across North America (Figure 6).⁵³ These early Americans, known as the Clovis people, were highly skilled hunters who pursued Ice Age megafauna over much of North America. Within a few millennia of the arrival of the Clovis people, many of the larger mammals they harvested began to disappear, including the mammoth, mastodon, saber-toothed cat, horse, several species of camel, giant sloths, and other animals.⁵⁴ Some argue that climatic changes at the end of the Ice Age contributed significantly to the decline of these species, but the fact that these beasts had previously survived numerous Ice Ages by walking to warmer climes, and the close correlation with the entrance of man, suggest human predation contributed significantly to their extinction.⁵⁵ In Australia and the Pacific, the demise of large animals also coincided with the arrival of man, but not with the end of the Ice Age.

For many years most scholars were convinced the Clovis people were the first Americans. Alaska was thought to have been cut off from North America by continental ice sheets until about 13,000 years ago, making migration south virtually impossible. However, recent discoveries have seriously challenged that dogma. The first major challenge was the reliable dating of about 30 fragments of wood, charcoal and ivory at about 14,500 year before present at Monte Verde in Chile by Tom Dillehay.⁵⁶ Among the growing number of claims of an earlier presence is the discovery in 2019 of 16,000-year-old pre-Clovis stone projectile points on the Salmon River in western Idaho.⁵⁷ Its location on a major tributary of the Columbia River points to the probable route early Americans took from the Pacific coast to the interior of North America. Most scientists now believe the earliest migrations from Alaska took place down a 'kelp highway,' along the Pacific northwest coast,

⁵² Brian M. Fagan *The Great Journey: The Peopling of Ancient America*. (New York: Thames and Hudson, 1987).

⁵³ Recent evidence of pre-Clovis unfluted stemmed projectile points has been found in Idaho. Davis et al., "Late Upper Paleolithic occupation at Cooper's Ferry, Idaho, USA, ~16,000 years ago" *Science* 365 (2019): 891-897. <https://science.sciencemag.org/content/365/6456/891>

⁵⁴ Donald K. Grayson "Death by Natural Causes," *Natural History* 5 (1987.): 8-13.

⁵⁵ Jared M. Diamond *Guns, Germs, and Steel: The Fates of Human Societies*. (New York: W. W. Norton, 1997).

⁵⁶ Tom D. Dillehay "Monte Verde, A Late Pleistocene Settlement in Chile: Vol. 2, The Archaeological Context and Interpretation". (Washington D. C.: Smithsonian Institution Press, 1997).

⁵⁷ Davis et al., "Late Upper Paleolithic occupation at Cooper's Ferry, Idaho, USA, ~16,000 years ago" *Science* 365 (2019): 891-897. <https://science.sciencemag.org/content/365/6456/891>

as early as 17,000 years ago. Recent dating of the age when rocks along the coast were first exposed to cosmic radiation after glaciation (cosmogenic ^{10}Be exposure dating) has revealed that the Pacific coastal corridor was navigable by humans, and had sufficient food resources, as early as 17,000 years ago.⁵⁸

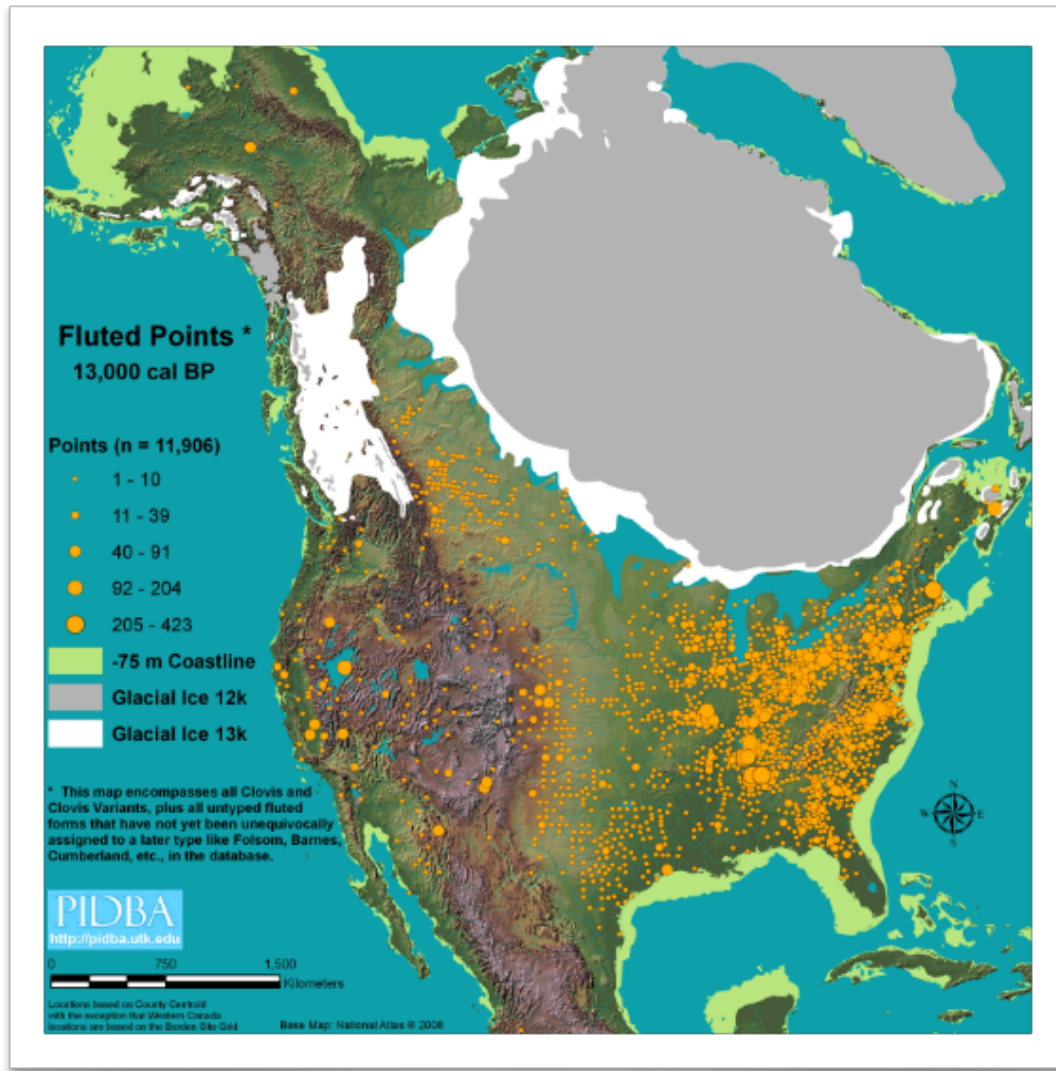


Figure 6. Archaeological evidence of the Clovis people. The map shows the distribution and abundance of 13,000-year-old Clovis fluted spear points across North America. <http://pidba.utk.edu/main.htm>

B. Maternal and paternal genealogy

The maternal and paternal DNA genealogies of Native Americans are almost exclusively tied to Asia. MtDNA lineages for over 16,000 American Indians from hundreds of populations widely dispersed across the Americas have now been published. Over 99 percent of these lineages fall into one of five

⁵⁸ Lesnek et al., "Deglaciation of the Pacific coastal corridor directly preceded the human colonization of the Americas" *Science Advances* 2018; 4:eaar5040.

lineage families: A, B, C, D and X (Table 1). All of these lineages also occur in Asia. The X lineage additionally occurs in Europe, North Africa and the Middle East, however, the X lineage family is very old and these widely separated lineages are distantly related.⁵⁹

Table 1: Maternal DNA lineages of Native Americans†

Population	Mitochondrial DNA lineage (no. of individuals)						
	A	B	C	D	X	Eur/Afr	TOTAL
North America	2019	1100	781	668	163	29	4760
Central America	1512	640	550	154	0	20	2876
South America	1975	2699	2268	1388	0	89	8419
TOTAL	5495	4432	3405	2208	163	138	16055
Percentage	34	28	22	14	1	1	100

† This table includes data on 7,317 individuals published in Southerton *Losing a Lost Tribe* 213-222. Source literature is listed in [Appendix A](#).

The development of methods for the recovery of DNA from ancient remains, such as bones and teeth, has allowed scientists to determine the mtDNA lineages of numerous pre-Columbian individuals. MtDNA is easier to recover from ancient materials because it is far more abundant in each cell in the first place. The lineages of over 1,200 pre-Columbian individuals from North, Central and South America are shown in Table 2. Only the five major founding DNA lineages are found in ancient individuals. To date, the X lineage has not been observed in Central or South America.

The amount of DNA sequence diversity within all five founding mitochondrial haplogroups has revealed that each lineage was present in the earliest migratory parties entering the New World. The most recent estimates of the time when American peoples shared a common ancestor suggest that the initial migration to the Americas took place about 19,000 years ago.⁶⁰ This

⁵⁹ Maere Reidla et al., "Origin and Diffusion of mtDNA Haplogroup X," *American Journal of Human Genetics* 73 (2003): 1178-1190. The X lineage is believed to have originated over 30,000 years ago.

⁶⁰ Alessandro Achilli et al., The phylogeny of the four Pan-American mtDNA haplogroups: implications for evolutionary and disease studies. *PLoS ONE* 3(2008): e1764. Nelson Fagundes et al., Mitochondrial population genomics supports a single pre-Clovis origin with a coastal route for the peopling of the Americas. *American Journal of Human Genetics* 82 (2008): 583-592.

timeframe is broadly consistent with archaeological evidence of the earliest appearance of human habitation in the New World.

Table 2: Maternal DNA lineages of ancient Americans[†]

Population	Mitochondrial DNA lineage (no. of individuals)						
	A	B	C	D	X	Eur/Afr	TOTAL
North America	168	195	158	104	15	0	640
Central America	59	13	54	17	0	0	109
South America	47	140	153	141	0	0	481
TOTAL	274	348	365	262	15	0	1230
Percentage	22	28	30	21	1	0	100

[†] Source literature is listed in [Appendix B](#).

Y chromosome DNA studies have revealed that about 90% of male Native Americans carry Y-DNA lineages occurring in Asian populations. European and African lines make up the balance, occurring at roughly 10-15 percent in North America and 5-10 percent in South America. The significantly higher male-driven admixture in Native American populations makes it more difficult to infer prehistoric population events using Y-DNA.⁶¹

Asian lineages related to Amerindian male and female lineages occur at their highest frequency in Siberian populations that trace their migratory history to the region surrounding Lake Baikal. The local Altaians share the highest frequency of male and female lineages with Amerindians. Other groups tied to Lake Baikal are shown in Figure 7, including the Kets, Buryats, and Tuva.

⁶¹ Ripan S. Malhi et al., Distribution of Y chromosomes among Native North Americans: A study of Athapaskan population history. *American Journal of Physical Anthropology* 137 (2008): 412-424.



Figure 7. Asian origin of Native American DNA. Central Siberian populations with the highest frequency of DNA lineages found in Native Americans are identified in blue. Adapted from Southerton, *Losing a Lost Tribe* 95.

C. Whole genome genealogy

Garrett Hellenthal, from University College London, published a pioneering whole genome study of human populations in 2014. His team screened 474,491 markers across 1490 individuals from 95 worldwide human groups. In their paper entitled 'A Genetic Atlas of Human Admixture History,' the researchers were able to detect and date over 100 admixture events that occurred during the last 4,000 years. Five Native American populations were included in the study, including the Pima from northern Mexico, the Maya from Mesoamerica, and three remote South American populations. Hellenthal et al. identified a single admixture event in the Maya between 1642 and 1726 AD and one in the Pima between 1698 and 1810 AD. The sources of this admixture were primarily the Iberian Peninsula and Africa. The authors also generated an interactive global map that can be used to illustrate past admixture events (Figure 8).

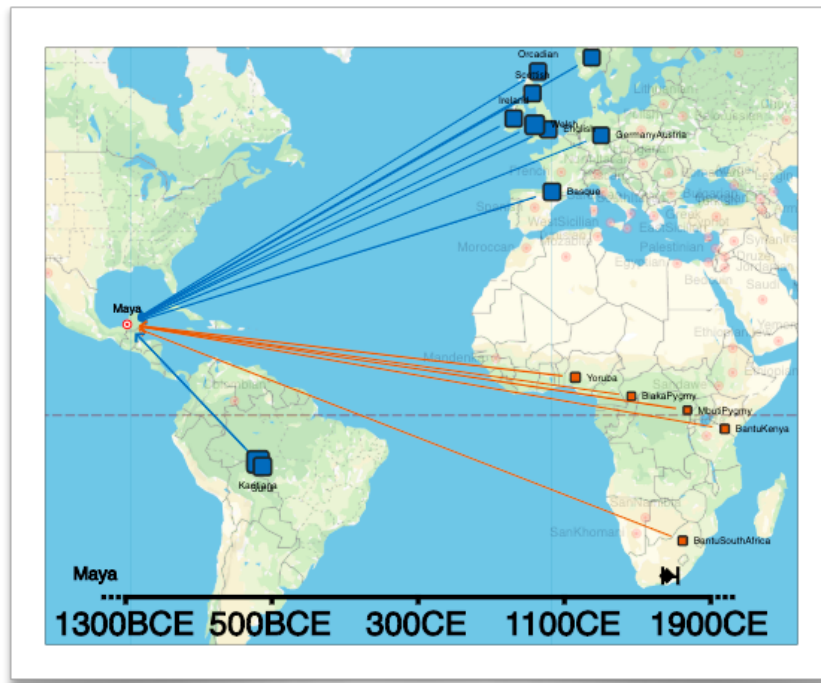


Figure 8. European and African admixture in the Maya.

Whole genome studies of the Maya revealed an admixture event between 1642 and 1726 AD (CE). The admixture was predominantly derived from Europe, while a small amount came from sub-Saharan Africa. Most of the European admixture came from the Iberian Peninsula (data not shown). The figure was generated using interactive admixturemap software developed by Hellenthal et al. (2014) and can be accessed at the following website.

<http://admixturemap.paintmychromosomes.com/>

A large genomic study of admixture in Latin American populations was published in 2018.⁶² The study is effectively a high-resolution investigation of the one percent of European and African DNA seen in the mitochondrial research (Table 1). The authors screened over 500,000 genomic markers across each of 6,589 Latin Americans from Brazil, Chile, Colombia, Mexico and Peru. Unsurprisingly, they detected high rates of admixture (30-83%) derived from the Iberian Peninsula. Within this admixture they detected small amounts of Sephardic/Mediterranean ancestry: Brazil (1%), Chile (4%), Colombia (3%), Mexico (3%) and Peru (2%). Using ancestry tract length analysis, the authors found that the Sephardic/Mediterranean DNA had arrived at the same time DNA from Portugal and Spain had arrived. Clearly, the Middle Eastern DNA had arrived after Columbus.⁶³ This research is discussed in greater detail in Chapter 7.

⁶² Juan-Camilo Chacón-Duque et al., "Americans show wide-spread Converso ancestry and imprint of local Native ancestry on physical appearance" *Nature Communications* 9 (2018): 5388.

⁶³ See Sijia Wang et al., "Genetic variation and population structure in Native Americans." *PLoS Genet* 3(11) (2007): e185. David Reich et al., "Reconstructing Native American population history" *Nature* 488 (2012): 370-375. Hellenthal et al., "Genetic Atlas of Human Admixture History" *Science* 343 (2014): 747-751.

The power of genomic studies to unlock the genealogical secrets in the genome is illustrated by the discovery of trace amounts of ancient admixture in Native Americans that had not previously been detected in mitochondrial or Y-DNA studies. Clear evidence of Australasian DNA (Onge and Australians) has been found in some Amazonian and adjacent populations (Figure 9).⁶⁴ The analysis suggested this DNA was present in the genomes of the earliest migrants entering the New World. Interestingly, this finding is consistent with earlier research on the skulls of some prehistoric South Americans which had found some exhibited Australoid features. In addition to possessing about 2% Neanderthal DNA, Native Americans have also been found to share about 0.2% of their ancestry with Denisovans, an archaic human species found in Siberia.⁶⁵ Both the Australoid, Neanderthal and Denisovan genes are believed to have accompanied the original founders, as they entered the New World over 15,000 years ago.

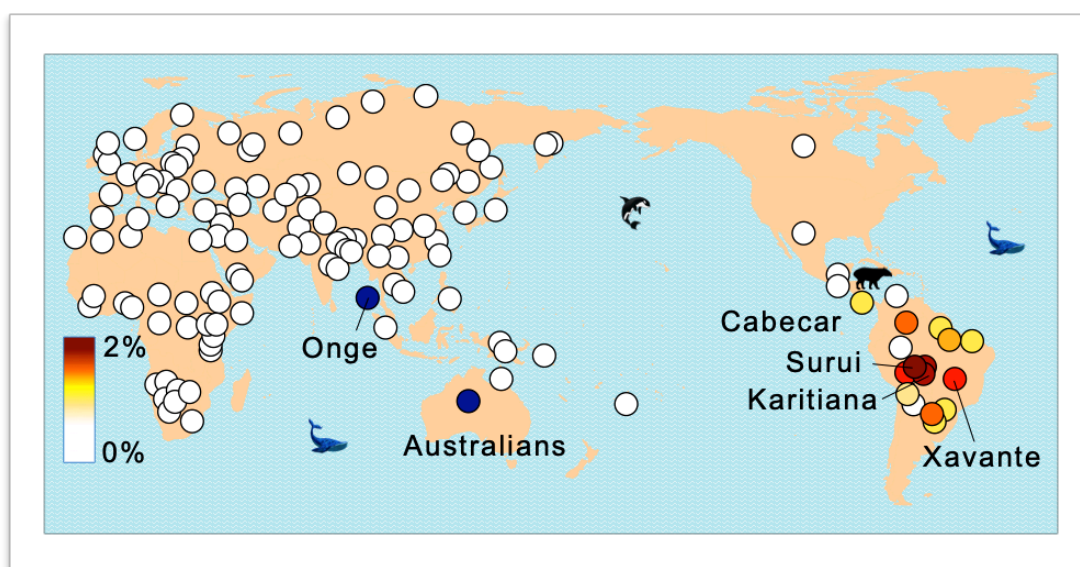


Figure 9. The discovery of Australasian DNA in the Amazon.

Whole genome studies have revealed up to 2% Australasian DNA in several isolated Amazonian tribes. Each circle represents a population. The color scale indicates from zero (white) to 2% (dark red) Australasian DNA. Two Australasian populations are represented by dark blue circles. These include the Onge, indigenous people of the Andaman Islands, and Australian Aboriginals. Source: Adapted from Figure 1d in Skoglund et al. 2015.

The Latin American and Australasian studies are among the first of many whole genome studies on Native Americans that will be soon be published. While the human genome is a wonderful genealogical resource, the drive to sequence it, and study the genetic variation it contains, is largely motivated

⁶⁴ Pontus Skoglund et al., "Genetic evidence for two founding populations on the Americas" *Nature* 525 (2015): 104-108.

⁶⁵ Kay Prufer et al., "The complete genome sequence of a Neanderthal from the Altai Mountains" 505 (2014): 43-49.

by a desire to understand the genetic basis of human disease. Hiding among the millions of genetic variants it contains are numerous markers that control susceptibility to a wide range of diseases including cancer, heart disease, stroke, diabetes, arthritis, osteoporosis, eye disorders, mental illnesses etc. In a research strategy known as ‘association studies’, researchers compare the genomes of thousands of disease sufferers with a large number of healthy controls. Markers significantly more common in individuals with the disease are frequently located in genes conferring susceptibility. The [UK Biobank](#) illustrates the scale of these genomic endeavors. The Biobank is following the health of 500,000 volunteer participants who have all been genotyped for in excess of 500,000 markers. A recent study on same-sex attraction used data from 477,522 individuals in the Biobank.⁶⁶ Large-scale association studies are being carried out in all major ethnic groups, including Native Americans. The vast amounts of genomic information revealed in these studies will inevitably be probed for its genealogical information since most of the previous human DNA genealogy research was published by scientists involved in medical research.

D. Racial implications and the credibility of Joseph Smith

Scientists not associated with BYU or LDS apologetics, and willing to comment publicly on the subject, support the general synthesis of population studies described above. Stephen Whittington, Director of the Hudson Museum at the University of Maine and co-editor of *Bones of the Maya* observed that: ‘Archaeologists and physical anthropologists have not found any evidence of Hebrew origins for the people of North, South and Central America.’⁶⁷ Michael Crawford, a biological anthropologist at the University of Kansas has stated ‘I don’t think there is one iota of evidence that suggests a lost tribe from Israel made it all the way to the New World. It is a great story, slain by ugly fact’.⁶⁸ David Glenn Smith of the University of California at Davis believes: ‘There is no compelling evidence for a connection between Jewish populations and Native American populations based on genetics.’⁶⁹

Contemplating the Book of Mormon narrative, Trent Stephens, an LDS professor of anatomy and embryology at Idaho State University, observed:

⁶⁶ Andrea Ganna et al., “Large-scale GWAS reveals insights into the genetic architecture of same-sex sexual behavior” *Science* 365, eaat7693 (2019) DOI: 10.1126/science. aat7693

⁶⁷ Cited in “[DNA vs. the Book of Mormon](#),” (Brigham City, UT: Living Hope Ministries, 2003)

⁶⁸ In Dan Egan, “BYU Gene Data May Shed Light on Origin of Book of Mormon’s Lamanites,” Salt Lake Tribune (30 November 2000). Crawford is the author of *The Origins of Native Americans: Evidence from Anthropological Genetics* (New York: Cambridge University Press, 1998).

⁶⁹ Cited in “[DNA vs. the Book of Mormon](#)”

No genetic evidence specifically supports the hypothesis that Native Americans descended from Middle Eastern populations. Furthermore, there is little reason to assume that additional data will reverse the current conclusions.⁷⁰

Ugo Perego, an LDS scientist who has published work on Native American mtDNA, has stated ‘the DNA of Lehi and his party has not been detected in modern Native American populations’ but that this ‘does not demonstrate that this group of people never existed’.⁷¹

A number of serious racial issues emerge from the Book of Mormon and associated LDS traditions. Given the complete absence Jewish DNA in pre-Columbian Indigenous Americans, is it right for Mormons to continue perpetuating the Lamanite myth? Several critics express concern about the racist implications of the Book of Mormon and the longstanding mission to the ‘Lamanites’.⁷² According to Murphy, Mormons ‘have a moral and ethical obligation to discontinue this view of Native American origins and publicly disavow the offensive teaching that a dark skin is a physical trait of God’s malediction.’⁷³ Not only have American Indians and African Americans suffered the stigma of ‘God’s curse’ and a long and sordid history of (mis)treatment by the Mormon Church, uncertainty around the true identity of the Lamanites raises questions about the Church’s ongoing missionary activities and the credibility of scriptural prophecy.⁷⁴

There is also growing uneasiness among scholars acquainted with the accomplishments and history of development of New World civilizations. The Book of Mormon asserts the migratory parties contributed substantial technology, plant and animal domesticates and knowledge to New World populations and that they led large civilizations for a thousand years. The racist implications of this diffusionist view of New World history are deeply unsettling:

But this whole idea of a white people coming to the New World is basically made out of whole cloth. It was propaganda — first set up by the Spaniards, then picked

⁷⁰ Trent Stephens, “Now What?” *Sunstone* (March 2004): 26-29, 26. See also Jeffrey Meldrum and Trent Stephens, “Who are the Children of Lehi?” *Journal of Book of Mormon Studies* 12 (2003): 38-51, 42: ‘There has been little if any evidence seriously considered by the mainstream scientific community that would indicate a Middle East origin, or any other source of origin, for the majority of contemporary Native Americans. What are the implications of this lack of accepted empirical support for the claim of the Book of Mormon?’

⁷¹ Ugo A. Perego, “The Book of Mormon and the Origin of Native Americans from a Maternally Inherited DNA Standpoint,” in *No Weapon Shall Prosper: New Light on Sensitive Issues*, ed. Robert L. Millet (Provo, UT: Religious Studies Center, Brigham Young University, (2011), 171–217. Perego is now employed by the Church in an educational role in Rome.

⁷² Thomas Murphy, “From Racist Stereotypes to Ethnic History: Instrumental Uses of Mormon Racist Doctrine.” *Ethnohistory* 46 (1999): 451-480; Southerton, *Losing a Lost Tribe*, 8-12, 17-32, 48-51.

⁷³ Murphy, “Lamanite Genesis, Genealogy, and Genetics,” 68; Thomas Murphy, “Laban’s Ghost: On Writing and Transgression,” *Dialogue: A Journal of Mormon Thought* 30 (1997): 105-126.

⁷⁴ Cardell Jacobson, “Black Mormons in the 1980s: Pioneers in a White Church,” *Review of Religious Research* 33 (1991): 146-152.

up by European racists who didn't want to accept the idea that dark-skinned people could have built temples and huge mounds across the middle part of this country. It couldn't have been the Inca. It all had to be somebody from elsewhere with white skin.⁷⁵

The substantial body of genetic evidence assembled against the Book of Mormon is compelling evidence against its historicity.⁷⁶ The complete absence of corroborating evidence has encouraged some to treat the Book of Mormon as pseudepigrapha or inspired fiction.⁷⁷ Alternatively, some Book of Mormon critics have adopted a more skeptical reading, where the 'Book of Mormon is nineteenth century fiction' and 'Smith was attempting to deceive people'.⁷⁸ A number of Latter-day Saint scholars, however, continue to defend the historicity of the Book of Mormon in the face of the adverse science.

⁷⁵ John Dehlin's interview with Michael Coe, *Mormon Stories*, 12 August 2011. [Interview transcript](#).

⁷⁶ Hans Gadamer, *Truth and Method* (London: Sheed & Ward, 1975).

⁷⁷ Dan Vogel, "Is a 'Paradigm Shift' in Book of Mormon studies possible?" *Sunstone* (March 2005): 69-74, 72-73.

⁷⁸ Thomas Murphy, "Dealing with the evidence," in "DNA vs. The Book of Mormon" (available at http://www.mormonchallenge.com/dna_sci.htm); Brent Lee Metcalfe, "Reinventing Lamanite Identity," *Sunstone* (March 2004): 20-25, 23; Southerton, *Losing a Lost Tribe* 27-31, 33-37.



5. Defending the Book of Mormon

A. Book of Mormon archaeology

We who have a different heritage should be filling in the gaps, linking up real past and real present—concretely, believably, and truthfully—and not just continuing to construct stories and pageants that we then label “Lamanite.” If Latter-day Saints believe the Book of Mormon is real, as they say, they should treat its setting as reality.⁷⁹

Latter-day Saint scholars were once actively engaged in archaeological research in support of the Book of Mormon. Among the better-known early Mormon archaeologists was Thomas Ferguson, a man who devoted much of his life to locating the ruins of cities described in the Book of Mormon. A lawyer by profession, Ferguson established the New World Archaeological Foundation (NWAf) in 1952. He spearheaded its first expedition to Mexico in January 1953, accompanied by two BYU graduate students. In 1954 Ferguson successfully petitioned Church authorities for \$250,000 in support of NWAf research. Mesoamerican archaeology in particular has benefitted tremendously from the work of the NWAf which is still located at BYU.⁸⁰

While the NWAf was growing in scientific stature, being incorporated into BYU in 1961, Ferguson was quietly becoming discouraged. He had been

⁷⁹ John L. Sorenson *An Ancient American Setting for the Book of Mormon*. (Salt Lake City: Deseret Book, 1985).

⁸⁰ See Stan Larson *Quest for the Gold Plates: Thomas Stuart Ferguson's Archaeological Search for the Book of Mormon* (Salt Lake City: Freethinker Press, 1996). See also Lizzie Wade [“How a Mormon lawyer transformed archaeology in Mexico—and ended up losing his faith”](#) *Science News* Jan. 18, 2018.

hoping to find evidence for objects mentioned in the Book of Mormon that archaeologists hadn't yet found in Mesoamerica; namely horses, wheeled chariots, steel swords, and, most important, Hebrew or Egyptian script. However, the deeper the NWAFF dug, the more they confirmed that Mesoamerican civilization sprang up from entirely New World origins. After years of failing to locate archaeological remains that could be linked to the Book of Mormon, Ferguson concluded 'you can't set Book of Mormon geography down anywhere because it is fictional and will never meet the requirements of the dirt-archaeology'.⁸¹

A number of Fergusons colleagues trod a similar path. Michael Coe observed in 1973 that the history of Book of Mormon archaeology is littered with apostasy, as numerous gifted scholars have been swayed by the lack of evidence and the views of their Gentile colleagues.⁸² Ray Matheny, a former BYU professor of anthropology, concluded that the scientific evidence does not support the Book of Mormon. After working in Mesoamerican archaeology for twenty-two years, he concluded that the existence of people and events chronicled in the Book of Mormon, whether in Central America or anywhere in the western hemisphere, cannot be supported by scientific evidence⁸³.

Several of Ferguson's colleagues, unfazed by the lack of progress, became obsessed with particular artifacts and native traditions that they interpreted through a Book of Mormon lens. After becoming a General Authority in 1945, Elder Milton R. Hunter pursued his interest in Mesoamerican archaeology alongside Ferguson, publishing *Archaeology and The Book of Mormon* in 1956 and *Great Civilizations and the Book of Mormon* in 1970. Hunter used the platform of General Conference to widely publicize his belief that the feathered serpent Quetzalcoatl, observed throughout Mesoamerica, was a representation of Jesus Christ. Leading Mesoamerican archaeologists, however, disagreed with this interpretation, having observed the feathered serpent legend reaching deep into the Olmec era, as early as 1200 BC (Figure 10).⁸⁴

⁸¹ Thomas Stuart Ferguson, letter to Mr. & Mrs. H.W. Lawrence, February 20, 1976.

⁸² Coe "Mormons and Archaeology: An Outside View".

⁸³ Ray T. Matheny. "Book of Mormon Archaeology," an address delivered at the Sunstone Theological Symposium. (Provo, Utah: Special Collections, Harold B. Lee Library, Brigham Young University, 1984).

⁸⁴ Jacques Soustelle, *The Olmecs: The Oldest Civilization in Mexico*. (New York: Doubleday, 1984). Michael D. Coe, Dean Snow, and Elizabeth Benson. *Atlas of Ancient America* (Oxford: Equinox, 1986).

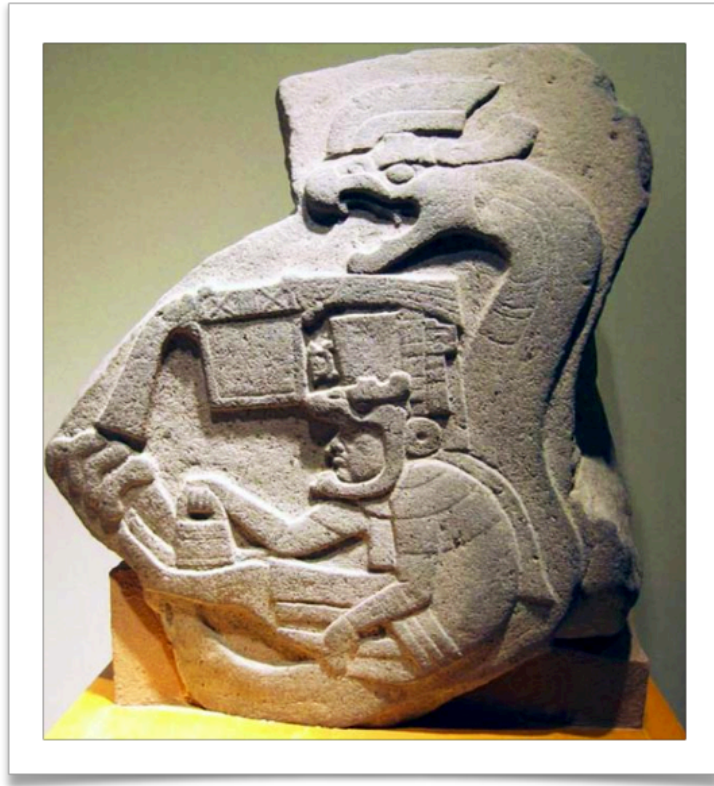


Figure 10. The earliest representation of a feathered serpent in Mesoamerica. The earliest documented worship of the feathered serpent, Quetzalcoatl, occurs in Teotihuacan in the first century BC, however, clear links to the principal Olmec deity the Jaguar god have been identified (Coe et al. 1986). Olmec Monument 19, from La Venta, Tabasco. National Museum of Anthropology, Mexico City. Photo by Xuan Che.

Wells Jakeman, founder of the Department of Archaeology at BYU, declared another artifact—a stone relief at Izapa near Chiapas, Mexico—to be especially significant. Now widely known by Mormons as Stele 5, the stone carving depicts a complex scene of richly dressed figures seated and standing on either side of a tree, a scene depicted elsewhere in Mesoamerica. Jakeman thought the stone depicted the ‘Tree of Life’ dream that Lehi experienced in the Book of Mormon (1 Nephi 8), a representation of the trials and temptations the faithful must overcome in order to earn their eternal reward (Figure 11). Later generations of LDS scholars are less convinced by the dozens of parallels Jakeman saw between the monument and the dream.⁸⁵ But Hunter and Jakeman placed great faith in this and in the heavily Christianized accounts of pre-Columbian history recalled by native writers several decades after Pizarro’s conquests of Mexico. Most scholars distrust these accounts because they appear to have been molded to please early Christian missionaries.

⁸⁵ Larson, *Quest for the Gold Plates*.



Figure 11. Stele 5 stone relief from Izapa Mexico.

Stele 5 was once widely touted by Mormon scholars to contain striking parallels with the tree of life in Lehi's dream (1 Nephi 8). Most LDS scholars have now distanced themselves from these claims. Madman2001 created the drawing in 2008 (creative commons).

Gradually the bold claims of evidence for the Book of Mormon have faded. Evidence of steel swords and iron metallurgy in the Jaredite and Lehite periods has eluded LDS scholars. No Hebrew or Egyptian scripts have been sighted and the wheel, another technology familiar to Book of Mormon peoples, was never used in ancient America. There are no archaeological remains of Old World plants such as wheat or barley or animals such as elephants, sheep or horses.

Contemporary Mormon scholars now recoil from the enthusiastic excesses of earlier generations. John L. Sorenson was one of the PhD students who accompanied doubting Thomas Ferguson on his first archaeological digs in Mexico. He became the founding Professor of Anthropology at BYU in 1971 and has been a dominant figure in Book of Mormon research to this day. Sorenson dismantled the two most widely cited archaeological evidences used in support of the Book of Mormon—the Izapa stele and the legend of the bearded white god Quetzalcoatl—in a paper pointing out the two-edged nature of some evidences. Sorenson acknowledges that these earlier 'proofs' were based on highly subjective interpretations of Mesoamerican myths and artifacts. Quetzalcoatl's less divine attributes were simply overlooked because

it would not have been faith promoting to link them with Jesus Christ.⁸⁶ Sorenson has been particularly scathing of LDS scholars who, in his assessment, have overstepped their ability in interpreting archaeological evidence:

Two of the most prolific are Professor Hugh Nibley and Milton R. Hunter; however, they are not qualified to handle the archaeological materials their work often involves ... As long as Mormons generally are willing to be fooled by (and pay for) the uninformed, uncritical drivel about archaeology and the scriptures which predominates, the few LDS experts are reluctant even to be identified with the topic.⁸⁷

Other prominent Mormon scholars have acknowledged the scarcity of archaeological evidence that can be linked to the Nephite or Jaredite cultures. John Clark, Professor of Anthropology at BYU and the current director of the NWAFA, authored the chapter 'Book of Mormon Geography' in the *Encyclopedia of Mormonism*.⁸⁸ Clark observed that 'of the numerous proposed external geographies, none has been positively and unambiguously confirmed by archaeology' and should 'at best, be considered only intellectual conjectures'. David Johnson, who authored the chapter 'Archaeology' said any evidence 'is indirect and cannot be linked to a single person, place or thing mentioned in the text'.⁸⁹ His inference is that no New World archaeological findings can be solidly connected with the people, events, or locations described in the Book of Mormon. The descendants of the Book itself are also missing. Dee Green suggested 'Another myth which needs dispelling is our Lamanite syndrome. Most American Indians are neither descendants of Laman nor necessarily of Book of Mormon peoples'.⁹⁰

Somewhat paradoxically, LDS scholars in recent years have claimed the first archaeological evidence for the Book of Mormon is not found in the New World after all, but on the Arabian Peninsula. The Book of Mormon records that during Lehi's journey into the deserts south of Jerusalem they stopped at a place named Nahom to bury Ishmael (1 Nephi 16: 34). In 1978 apologists noticed a place named 'Nehhm' on an eighteenth century map, in the region through which Lehi's party may have travelled. In the 1990s an altar was

⁸⁶ John L. Sorenson "The Book of Mormon in Ancient America," FARMS Book of Mormon Lecture Series typescript. (Provo, Utah: Foundation for Ancient Research and Mormon Studies, 1995).

⁸⁷ John L. Sorenson, "Some Voices from the Dust." Review of *Papers of the Fifteenth Annual Symposium on the Archaeology of the Scriptures*, in *Dialogue: A Journal of Mormon Thought* 1 (1966):144-49.

⁸⁸ John E. Clark, "Book of Mormon Geography," in the *Encyclopedia of Mormonism*, ed. Daniel H. Ludlow. New York: Macmillan, 1992, 1: 178). See also Bruce W. Warren, Review of F. Richard Hauck, *Deciphering the Geography of the Book of Mormon: Settlements and Routes in Ancient America*, and John L. Sorenson, *An Ancient American Setting for the Book of Mormon*, in *BYU Studies* 30 (1990):127.

⁸⁹ David J. Johnson, "Archaeology," in the *Encyclopedia of Mormonism*, ed. Daniel H. Ludlow. New York: Macmillan, 1992, 1: 62).

⁹⁰ Dee F. Green "Book of Mormon Archaeology: The Myths and the Alternatives," *Dialogue: A Journal of Mormon Thought* 4 (1969):71-80. 78.

discovered, near San'a in Yemen, with an inscription referring to the tribe of Nihm. In Arabic only consonants are written, so the inscription NHM could refer to a number of different words, however, this has not deterred apologist Terryl Givens from declaring the NHM inscription 'the most impressive find to date corroborating Book of Mormon historicity.'⁹¹ Such a claim merely underscores the failure of LDS scholars to find credible historical evidence for the Jaredite and Lehite *civilizations* that existed for about two thousand years. The sorry state of Book of Mormon archaeological research is now symbolized by the image of a Native American riding a tapir, an animal proffered by the most deeply invested apologist, John Sorenson, as a possible substitute for the missing horses.⁹²

B. Book of Mormon cultural anthropology

In 1969 a roundtable entitled 'The Prospects for New World Archaeology' was held at BYU to chart a new path for Book of Mormon archaeological research. Green and Sorenson were joined by Cyrus Gordon, a non-Mormon scholar from Brandies University, who believed Jews, Phoenicians, and others crossed the Atlantic to the Americas in antiquity. Gordon's beliefs were largely based on questionable archaeological discoveries including the Tennessee Bat Creek stone, the Paraiba inscription from Brazil, and the Los Lunas Decalogue Stone from New Mexico.⁹³ Green bluntly summarized the problem the roundtable was faced with:

The first myth we need to eliminate is that Book of Mormon archaeology exists. Titles on books full of archaeological half-truths, dilettanti on the peripheries of American archaeology calling themselves Book of Mormon archaeologists regardless of their education, and a Department of Archaeology at BYU devoted to the production of Book of Mormon archaeologists do not insure that Book of Mormon archaeology really exists. If one is to study Book of Mormon archaeology, then one must have a corpus of data with which to deal. We do not. ... Biblical archaeology can be studied because we do know where Jerusalem and Jericho were and are, but we do not know where Zarahemla and Bountiful (nor any other location for that matter) were or are.

According to Green the way forward was to view the Book of Mormon against the full picture of New World cultural history drawn from the *entire* discipline of anthropology. 'Singling out archaeology, a sub-discipline of anthropology, to carry the burden, especially in the naive manner employed by our "Book of Mormon Archaeologists," has resulted in a lopsided promulgation of archaeological myth.' Green was convinced the identification

⁹¹ Givens, *By the Hand of Mormon*, 120-121.

⁹² John L. Sorenson "Digging into the Book of Mormon: Our Changing Understanding of Ancient America and Its Scripture, Part 2" *Ensign* Oct. 1984.

⁹³ Cyrus Gordon, "Diffusion of Near East Culture in Antiquity and in Byzantine Times," *Orient* 30-31 (1995): 69-81.

of parallels between the cultural history of the Book of Mormon and the cultural history of the New World 'will tip the scales in our favor'.⁹⁴

In the final presentation at the roundtable, Sorenson lays out a research strategy he has exploited throughout his career—parallelomania. The failure of archaeology to identify a *single* solid piece of evidence for the Book of Mormon, could be obscured by assembling large numbers of far weaker cultural similarities between the Near East and Mesoamerica. Sorenson especially noted that 'The persuasive power of comparisons increases with the number.' He then listed 200 cultural parallels that 'paint in the background' of Near Eastern and Mesoamerican cultures. Based on such a long list, Sorenson boldly concluded 'No historical claim of the cultural independence of the two areas from each other is credible.'⁹⁵

For the last 50 years Sorenson has made extensive use of parallelomania to build a case for trans-oceanic movement of plants, animals and other cultural items in pre-Columbian times, and to support his view of close ties between Mesoamerican and Middle Eastern cultures. In his 'magnum opus', *Mormon's Codex*, Sorenson believes he has 'identified some [420 correspondences](#) that position the Book of Mormon in the picture of ancient Mesoamerican civilization constructed by archaeologists and other researchers'.⁹⁶ However, few modern scholars find this research approach to be reliable. Dorian Fuller, Professor of Archaeobotany, University College London, has criticized Sorenson's use of parallelomania to support his belief in the pre-Columbian diffusion of plant and animals across the Pacific:

Much of the evidence in the book appears to have been compiled rather uncritically, with an unswerving belief (in prehistoric Pacific contacts) trumping what should be the three key major concerns in the historical geography of crops and animals: accuracy of taxonomic identification, securely dated archaeological contexts of recovery (and preferably direct radiocarbon dating of the remains themselves), and accurate inference of the biogeographic origins of the taxa involved.⁹⁷

Criticism of Sorenson's obsession with parallels, or what he now calls 'correspondences', is not limited to secular scholars. LDS apologists Brant Gardner and Mark Wright have grown weary of Sorenson's approach to research, which they regard as a 'fundamentally flawed methodology'.⁹⁸ In

⁹⁴ Green "Book of Mormon Archaeology: The Myths and the Alternatives," 78-79.

⁹⁵ John L. Sorenson "Ancient America and the Book of Mormon resisted" *Dialogue: A Journal of Mormon Thought* 4 (1969): 80-94, 84.

⁹⁶ John L. Sorenson "Reading Mormon's Codex" *12th annual FairMormon Conference*, 2-3 August 2012.

⁹⁷ Dorian Q. Fuller, A review of John L. Sorenson and Carl L. Johannessen "World Trade and Biological Exchanges Before 1492" (New York: iUniverse, Inc., 2009) in *Journal of Latin American Geography*, 12 (2013): 245-254, 247. See also John L. Sorenson and Martin Raish "Transoceanic Culture Contacts Between the Old and New Worlds in Pre-Columbian Times: A Comprehensive Annotated Bibliography" (Provo, Utah: Foundation for Ancient Research and Mormon Studies, 1988).

⁹⁸ Brant A. Gardner and Mark Alan Wright 'John L. Sorenson's Complete Legacy: Reviewing *Mormon's Codex*' *Interpreter: A Journal of Latter-day Saint Faith and Scholarship* 14 (2015): 209-221, 214-215, 217.

their view, ‘there is a reason that in the four decades Sorenson has been describing such parallels that they have not been widely accepted. It is a methodology that too easily leads to false positives.’ The hunt for parallels is inevitably prone to being influenced by the personal opinions and beliefs of the individual (i.e. confirmation bias). It is also an approach that is predisposed to overlooking a notably large number of likely true negatives. A bizarre numerical illustration of this problem can be seen in a recent Bayesian analysis based on Sorenson’s Maya parallels.⁹⁹ Bruce and Brian Dale (father and son) estimated, using 131 positive (parallels) and *only* 18 negative correspondences, ‘*that the likelihood that the Book of Mormon is fictional is about 1.03×10^{-111} , [or] less than one in a thousand, billion, billion, billion, billion, billion, billion, billion, billion, billion.*’

Despite these criticisms, parallelomania has proven to be highly effective with Mormon audiences, for the same reason that Gish Galloping is an effective debating technique. Named after the Creationist Duane Gish, the technique involves overwhelming your opponent with as many arguments as possible without regard for the accuracy or validity of each argument. Critics of the Book of Mormon are thwarted because it is far easier to make numerous weak claims than it is to properly refute each one. Mormon audiences, unfamiliar with New World research, are often impressed by the sheer number of claims. Consider these words of endorsement of Sorenson's *Mormon's Codex* from the Deseret Books website:

Are we to simply suppose that mere coincidence can account for similarities of this magnitude? The parallels are too striking and too sweeping to answer in the affirmative. Even the greatest savant of the early 19th century—let alone a marginally literate frontier farm boy—could not possibly have produced a volume as rich in Mesoamerica as the Book of Mormon.¹⁰⁰

Human genetics is exposing the weakness of assembling exhaustive lists of cultural similarities, which can arise purely by chance. On the basis of abundant solid archaeological evidence scientists have concluded New World civilizations emerged independently and in complete isolation from the Old World. Another level of certainty has been added to these theories by population genetics. How could a race of people, who failed to leave a genetic trace in the New World, have been able to exert the kinds of influence over New World civilizations that the apologists claim? The far greater revelatory power of population genetics is making it clear that Sorenson's obsession

⁹⁹ Bruce E. Dale and Brian Dale “Joseph Smith: The World’s Greatest Guesser (A Bayesian Statistical Analysis of Positive and Negative Correspondences between the Book of Mormon and The Maya)” *Interpreter: A Journal of Latter-day Saint Faith and Scholarship* 32 (2019): 77-186.

¹⁰⁰ Prominent LDS apologists Richard Bushman, Terryl Givens and Daniel Peterson provide glowing endorsements of [Mormon's Codex](#) on the Deseret Books website.

with parallels is more of an abuse of archaeological methodology than a reliable method for identifying what really happened.

C. Book of Mormon apologetics

Two apologetic organizations feature prominently in defenses of the Book of Mormon. The Foundation for Ancient Research and Mormon Studies (FARMS) and the Foundation for Apologetic Information and Research (FAIR, now FairMormon). FARMS was established in 1979 as a private research organization. In 1997 it was incorporated into BYU where it was sponsored by the Church. In 2006, FARMS was absorbed into the Neal A. Maxwell Institute for Religious Scholarship before being dissolved in 2010. FARMS operated 'on the conviction that the Book of Mormon and other ancient scriptures are authentic historical documents written by prophets of God.' This commitment guided the production of major sources of Mormon apologetics, *The Journal of Book of Mormon Studies* (JBOMS) and *The FARMS Review* (now *Mormon Studies Review*). According to its former website, the work of FARMS 'conforms to established canons of scholarship, is peer reviewed, and reflects solely the views of individual authors and editors.' In 2012 the Maxwell Institute fired senior FARMS apologist Daniel Peterson, the editor of the *FARMS Review*, and other FARMS scholars. This led to the establishment of the *Interpreter: A Journal of Latter-day Saint Faith and Scholarship*, which is edited by Peterson.

Although 'not owned, controlled or affiliated' with the Mormon Church, [FairMormon](#), 'provides faithful answers to criticisms of the LDS Church' with similar grounding assumptions to those espoused by FARMS. In consequence, FairMormon produces a range of pro-Mormon brochures on controversial issues. Scholars and associates affiliated with FairMormon, FARMS and *Interpreter* tend to be active, and frequently prolific, contributors to LDS scholarly publications and other pro-Mormon websites.

Although the Church is clearly discouraging anything resembling official apologetics at BYU, it is strongly encouraging members to step up to defend the Book of Mormon. On assignment from the First Presidency, Elder Kevin Pearson delivered this message at the 2018 annual FairMormon conference:

Independent voices are needed in reaching out to those among us who are struggling to find and sustain faith, and in responding to those who unfairly criticize, misrepresent, distort, and demean the history, doctrine, and leadership of The Church of Jesus Christ of Latter-day Saints.

Book of Mormon Central (BMC), which carries the old FARMS logo, epitomizes the modern Latter-day Saint approach to defending the faith. They comprise 'ardent students of the Nephite scripture working together to share the wonders of this inspired masterpiece with the world.'

Rather than being dominated by scholars, BMC is staffed by ‘archivists, researchers, writers, editors, reviewers, illustrators, narrators, audio engineers, video engineers, web designers, web and mobile developers, graphic artists, and social media publishers in addition to support personnel.’ Clearly its focus is communication, rather than professional scholarship. According to career apologist, Daniel Peterson, its key role will be to make accessible ‘a vast amount of scholarly material and insight [which] has been generated with respect to the Book of Mormon’ which ‘many Latter-day Saints are scarcely aware...exists’.¹⁰¹

Peterson, a professor of Arabic at BYU, is a polarizing figure for Latter-day Saints going through a faith crisis. This may partly stem from his reluctance to acknowledge any valid criticisms of the Church. In 2017 he said ‘Ultimately, you see, there can never be proof that something that is true is actually false.’¹⁰² Peterson is among a number of LDS scholars who have been drawn to chat rooms and blogs where they can actively defend the historicity of the Book of Mormon and the Church. This has frequently resulted in the exposure of ordinary Mormons, who have only known the authoritative hemispheric tradition, to radical LG apologetics in an impersonal online setting. Many experiencing a faith crisis have been more shocked by LG apologists than by the critics themselves. The hostility and increasingly personal nature of the attacks, by both critics and BYU apologists, may have prompted the Church to distance itself from the whole apologetic enterprise.

¹⁰¹ Daniel Peterson, “A massive new resource for students of the Book of Mormon” *Deseret News* (January 6, 2016).

¹⁰² Daniel C. Peterson “Can there be any valid criticisms of the Church?” *Sic et Non* September 4, 2017. Similar sentiments have been expressed by Kerry Muhlestein, a strident defender of the book of Abraham: “I start out with an assumption that the Book of Abraham and the Book of Mormon, and anything else that we get from the restored gospel, is true. Therefore, any evidence I find, I will try to fit into that paradigm.” Quoted in Erica Palmer “BYU professor speaks on unnoticed assumptions about the Book of Abraham” *Deseret News* (Aug. 12 2014).



6. Limited geography apologetics

The first rule of historical criticism in dealing with the Book of Mormon or any other ancient text is, never oversimplify. For all its simple and straightforward narrative style, this history is packed as few others are with a staggering wealth of detail that completely escapes the casual reader. The whole Book of Mormon is a condensation, and a masterly one; it will take years simply to unravel the thousands of cunning inferences and implications that are wound around its most matter-of-fact statements. Only laziness and vanity lead the student to the early conviction that he has the final answers on what the Book of Mormon contains.¹⁰³

Science isn't "anti-Mormon." It cannot be. The hallmark of anti-Mormonism is an agenda, whether covert or openly expressed, of combating the faith of the Latter-day Saints and opposing their church. But such agendas have nothing at all to do with science.¹⁰⁴

For almost two centuries since the publication of the Book of Mormon, most Latter-day Saints and their leaders have believed the descendants of the Lamanites inhabit the entire Western Hemisphere and much of the Pacific. In recent decades, however, most Book of Mormon apologists, recognizing the impossibility of defending these beliefs, have shrunk the geographical region inhabited by Book of Mormon peoples. These apologists often attribute their interpretive shift to a *serious* or *proper* or *rigorous* understanding of the Book of Mormon. Their appeals to the strength of these textual 'clarifications', however, disguise the role played by overwhelming scientific evidence—and

¹⁰³ Hugh Nibley, 1952, *The Collected Works of Hugh Nibley*, Vol. 5: *Lehi in the Desert / The World of the Jaredites / There Were Jaredites* Deseret Book/FARMS, 1988, 237.

¹⁰⁴ Daniel Peterson, "Of 'Galileo Events,' Hype, and Suppression: Or, Abusing Science and Its History," *The FARMS Review* 15 (2003): ix-lxi, xxx.

Book of Mormon critics—in the decision to abandon hemispheric beliefs. Indeed, the strength of the recent findings in population genetics seems to have contributed to the rapid abandonment of hemispheric thinking amongst virtually all actively publishing Mormon scholars.

A. Sorenson's Mesoamerican limited geography

One would expect Book of Mormon civilizations to leave obvious signs of their presence. They were remarkably advanced in writing, agricultural practices, the mining and use of metals and they built temples and large cities to accommodate populations in the tens of thousands. In contrast, the land adjacent to the Isthmus of Panama, the traditional hemispheric narrow neck of land, lacks the remains of any large, complex civilization. John Sorenson, became convinced early in his career that the only location capable of accommodating the events contained in the Book of Mormon is within the region encompassing southern Mexico and Guatemala. Perhaps more crucially, it fits comfortably with Sorenson's diffusionist worldview, since Mesoamerica is 'where the highest level of ancient cultural development in the hemisphere occurred'.¹⁰⁵ Sorenson's LG has enjoyed almost universal support among Book of Mormon scholars at BYU for almost half a century.¹⁰⁶

In his influential *An American Setting for the Book of Mormon* (1985), Sorenson combines a restricted geographical interpretation of the Book of Mormon story with an actual physical location.¹⁰⁷ He dismisses all earlier attempts to map Book of Mormon geography, some involving Mesoamerica, as 'incomplete and inconsistent' or 'fatally flawed'.¹⁰⁸ Within Mesoamerica, Sorenson draws parallels between the Jaredites and the Olmec civilization, which was located in the tropical lowlands on the Gulf of Mexico. He believes the descendants of Lehi were contemporaries of the Maya, who inhabited the Yucatan Peninsula, and the highlands of the Sierra Madre, running from southeastern Mexico through Guatemala to El Salvador.

Today, Sorenson's LG represents the orthodox geography for Mormon scholars and particularly apologists, being 'the only one to have gained a following'.¹⁰⁹ In this model the Isthmus of Tehuantepec assumes the role of 'the narrow neck' (Figure 12). Significantly, and perhaps conveniently, the

¹⁰⁵ Sorenson, "Digging into the Book of Mormon".

¹⁰⁶ There are dozens of alternative geographies, such as the Malay Peninsula, Baja California and even the Holy Land, but none of them have gained a significant following. The only significant alternative is the Heartland model discussed in Chapter 8.

¹⁰⁷ John L. Sorenson, *An Ancient American Setting*

¹⁰⁸ Sorenson, *An Ancient American Setting*, 5 and Sorenson "Reading Mormon's Codex". For an overview of earlier proposals—many drawing on Sorenson's unpublished work—see John Sorenson, *The Geography of Book of Mormon Events: A Source Book* (Provo, UT: FARMS, 1992). See also David A. Palmer, *In Search of Cumorah: New Evidences for the Book of Mormon from Ancient Mexico* (Bountiful, UT: Horizon, 1981); Richard Hauck, *Deciphering the Geography of the Book of Mormon* (Salt Lake City: Deseret Book Co, 1988). Palmer, and several others, had access to early drafts of Sorenson's work.

¹⁰⁹ Wunderli, "Critique of a Limited Geography," 161.

Jaredite, Mulekite and Lehite influence on the Americas is significantly reduced. Rather than being a nation in their own right, the Lehtes are transformed into 'ruling lines' that are 'nearly invisible to archaeology'.¹¹⁰ While Sorenson claimed that his *plausible* Mesoamerican interpretation is based on a rigorous reading of the Book of Mormon, like all Book of Mormon scholars, he was acutely sensitive to decades of corrosive evidence assembled against the hemispheric geography and Book of Mormon historicity.



Figure 12. Sorenson's Mesoamerican limited geography.
Adapted from Southerton, *Losing a Lost Tribe* 158.

Recognizing that most Latter-day Saints didn't have access to the writings of LDS apologetics, Sorenson eventually succeeded in publishing the first, and only, widely available defense of his Mesoamerican LG work in the *Ensign* in 1984.

The purpose of this article and the one to follow is to sketch a few vivid examples of changes in how some Latter-day Saint scholars view the Book of Mormon in the light of new theories and discoveries about the past.¹¹¹

To help ordinary members adjust to the geographical retreat, Sorenson told readers 'the sciences that study ancient civilizations have undergone

¹¹⁰ Sorenson, "Digging into the Book of Mormon".

¹¹¹ Sorenson, "Digging into the Book of Mormon". Sorenson discusses his frustrated attempts, between 1975 and 1983, to publish his research in the *Ensign* in Sorenson *An Ancient American Setting*, xiii.

significant changes’ and that ‘much of what earlier generations thought about pre-Columbian American civilizations has been superseded’.

B. The limited geography ‘tradition’

As Mathew Roper demonstrates, convincingly in my view, the limited geography model emerged before the turn of the [20th] century and was derived from a careful reading of the Book of Mormon text itself, not a desire to escape challenges from science or anthropology. It has been rather widely taught and accepted by those who have carefully considered the text.¹¹²

Sorenson’s LG model became widely accepted in the apologetic community soon after its publication because it resisted some of the overwhelming force of the adverse anthropological, archaeological and linguistic evidence. It has also been particularly useful for dealing with the implications of population genetics. However, the swift ascendancy of Sorenson’s geography and its much greater visibility due to the Internet created a significant challenge for apologists. Most Mormons encountering the LG model have only ever been exposed to a long tradition of hemispheric interpretations.

In order to shore up Sorenson’s LG, apologists have invented a long tradition of LG thought, and portrayed generations of Church leaders as geographically ambivalent.¹¹³ By appealing to a tradition, apologists can claim that they have handled evidence and interpretation responsibly and rationally, and were not forced into adopting Sorenson’s LG by critical assaults on the Book of Mormon. Roper identified several 19th century Church leaders, including Joseph Smith, Parley P. Pratt, John Taylor, Orson Hyde and several others who he believes were sympathetic to LG ideas.¹¹⁴ Stephen’s *Incidents of Travel*—and the illustrations it contained of Mesoamerican ruins by artist Frederick Catherwood—undeniably captivated all of these men, including Joseph Smith. But even where early Latter-day Saints concentrated their attention on the impressive ruins in Central America, they still maintained a commitment to the hemispheric implications of the Book of Mormon. After all, commitment to a predominantly Central American setting does not preclude a hemispheric interpretation of the Book of Mormon or subsequent population dispersion.

The first serious LDS scholarship aimed at limiting the geographical extent of the Book of Mormon apparently emerged in the 1930s with the Washburns,

¹¹² Ostler, “DNA Strands in the Book of Mormon,” 68.

¹¹³ Eric Hobsbawm and Terence Ranger, *The Invention of Tradition* (Cambridge: Canto, 1992); Edward Shils, *Tradition* (Chicago: University of Chicago Press, 1981); Richard Handler and Jocelyn Linnekin, “Tradition, Genuine or Spurious,” *Journal of American Folklore* 97 (1984): 273-90.

¹¹⁴ Mathew Roper, “Limited Geography and the Book of Mormon: Historical Antecedents and Early Interpretations,” *The FARMS Review* 16 (2004): 225-275, 232.

M. Wells Jakeman and Fletcher Hammond.¹¹⁵ However, these early exponents were not always committed to the kinds of geography, or population assumptions, promoted by modern limited geographers.¹¹⁶ As noted earlier, Sorenson has dismissed all geographies published before 1985 as ‘fatally flawed’.¹¹⁷ In the meantime a scriptural review committee, under the direction of the Quorum of the Twelve, took a hemispheric approach with a new introduction to the 1981 edition of the Book of Mormon, proclaiming Lamanites as ‘the principal ancestors of American Indians’. On balance, there seems to be little evidence early LDS leaders and scholars supported the kind of geographical models or population implications embraced by modern Mormon apologists when they refer to a limited geographical setting.

Despite its debatable provenance, the value of the Mesoamerican geography for deflecting recent Book of Mormon critiques is not in dispute. Consider Daniel Peterson’s comments:

The most important thing to bear in mind is that if it is true, *as serious scholarship on the Book of Mormon has contended for decades*, that Lehi and his party (and other migrations mentioned in the text) were but small groups, living, after their arrival, in a limited geographical area surrounded by others, *scientific theories about the original peopling of the Americas are irrelevant to the truth claims of the Book of Mormon*.¹¹⁸

Such claims by limited geographers downplay the fact that ‘serious’ textual reinterpretations were essential in their creation. The controversy merely provides an opportunity to remind faithful LDS of the need to pay attention to the *real* meaning of their scriptural texts. More problematic is the need for Latter-day Saints to overlook widely held beliefs of generations of Church leaders, including the prophet Joseph Smith. Secure in their Mesoamerican setting, and overlooking the clear statements of Mormon prophets and scriptures quoted above (Chapter 1), widespread hemispheric interpretations are now depicted as egregious and anachronistic by apologists.

It is very common among long-time Latter-day Saints who were born into the Church to assume that the Book of Mormon describes the origin of all of the American Indians. That it is common, however, does *not mean that it squares with what the Book of Mormon actually says. In fact, it does not. ... We may correctly conclude from the evidence that the popular opinion long held among Latter-day Saints that the Book of Mormon explains the origins of all Native American populations is mistaken. We may*

¹¹⁵ Sorenson, *The Geography of Book of Mormon Events*.

¹¹⁶ Roper, “Limited Geography,” 232-253.

¹¹⁷ Sorenson “Reading Mormon’s Codex”.

¹¹⁸ Peterson, “Of ‘Galileo Events,’ Hype, and Suppression,” xlvii (italics added).

not conclude from that same evidence, however, that the Book of Mormon is incorrect (*italics added*).¹¹⁹

*A superficial consideration of the Book of Mormon account has led to misconceptions about its scope and context. A tradition apparently has persisted in the Latter-day Saints community, from the time the Book of Mormon first appeared in print in the 19th century, that all Native Americans are Lehi's direct descendants. This assumption seems to have been held by many early members of the Church of Jesus Christ of Latter-day Saints and is still held by most today (italics added).*¹²⁰

Peterson goes one step further, apparently welcoming the evidence from population genetics as it might:

show us that certain folk notions about Book of Mormon populations are not true. That's fine. I'm perfectly willing to accept that; I think that's great. These are views I've already held, and it's nice to be vindicated by DNA. I've already held these views for years, anyway, before the DNA became an issue. So to the extent that DNA knocks out the views of people who disagree with me, I'm not sad at all!¹²¹

The previous comments, by Peterson, Gardner, Meldrum and Stephens reveal the underlying tensions between the views of LG apologists and those held by the LDS faithful and Church leaders, currently engaged in a scripturally-based ministry to Native Americans and Polynesians.

One of the consequences of the rise of Sorenson's LG, is that it risks undermining the authority of Joseph Smith.¹²² Most apologists have felt compelled to save the scriptures by suggesting that Smith's *erroneous* claims and interpretations were "'doctrinal overbeliefs" or presumptions that are subject to revision'.¹²³ This reduces Smith to the status of a (mere) translator who is incapable of providing an especially insightful interpretation of his own text.¹²⁴

¹¹⁹ Brant Gardner, 'The Tempest in a Teapot: DNA studies and the Book of Mormon' (FAIR, 2004); Similar sentiments are found in John Sorenson and Mathew Roper, "Before DNA," *Journal of Book of Mormon Studies* 12 (2003): 6-23, 10; Daniel Peterson, "Prolegomena to the DNA Essays," *The FARMS Review* 15 (2003): 25-34, 30; Peterson, "Of 'Galileo Events,' Hype, and Suppression," lii-liii; Blake Ostler, "Assessing the logical structure of DNA arguments against the Book of Mormon," *Sunstone* (December 2004): 70-72, 71. In a follow-up article, Ostler said that 'it has always seemed reasonable to me to look for the Nephites in an islands setting rather than on the continental mainland.' Ostler, "DNA strands in the Book of Mormon," 65, 69, 70.

¹²⁰ Meldrum and Stephens, "Who are the Children of Lehi?" 40. According to Meldrum and Stephens, there is apparently only a hemispheric tradition.

¹²¹ Daniel Peterson, "[Random Reflections on the Passing Scene](#)," FAIR (2003).

¹²² Clark, "Evaluating the Case for a Limited Great Lakes Setting," 36. Clark recognises that every 'local geography ... makes an implicit claim that Joseph Smith did not understand Book of Mormon geography.'

¹²³ Ostler, "DNA Strands in the Book of Mormon," 66.

¹²⁴ Clark, "Evaluating the Case for a Limited Great Lakes Setting," 18.

However, if we adopt the view of those who accept the limited geography model, that Joseph Smith may have been uninformed in his beliefs about the Book of Mormon geography, then arguments about what Joseph Smith believed are beside the point.¹²⁵

C. Apologetic response to DNA-based criticism

DNA evidence has achieved a level of certitude that has prompted the most resolute LDS apologists to become very actively engaged in a remarkably short period of time. While most apologetic responses to DNA research are intended to: ‘debunk the myth that the Book of Mormon has been proved false by modern DNA evidence’, apologists are apparently grateful for its contribution to debunking hemispheric interpretations of Book of Mormon geography.¹²⁶ But, as one LDS scientist firmly committed to the LG *tradition* contends, the Mesoamerican geography and its consequent population implications may be more resilient. After all, ‘it is extraordinarily difficult, if not impossible, to use DNA sequence information to track the lineage of any group of organisms that has a historical population dynamic similar to that of the Nephites and Lamanites.’¹²⁷

The apologist’s ranks have swelled recently to include reputable LDS geneticists and biologists, who invariably embrace modern science and laud its many accomplishments. These pro-science credentials enable apologists to claim critics have exaggerated the capabilities of genetic techniques, and deliberately avoided targeting their critiques at limited geographies. Typically DNA-motivated critics are presented as amateurish meddlers who dishonestly target hemispheric geographies.

Daniel Peterson has deflected Southerton’s criticisms on the basis that they unfairly address the hemispheric interpretation of the book. He appears unacquainted with the contents of *Losing a Lost Tribe* where considerably more attention was focussed on the LG model than on hemispheric beliefs. Peterson has made frequent use of an observation Southerton made in 2005:

In a very real sense, this debate is (or should be) over. Just two or three years ago, the Signature Books Web page still featured an admission from Simon Southerton, an Australian plant geneticist and former Latter-day Saint who is now the most vocal critic of the Book of Mormon on DNA grounds, that ‘In 600 BC there were probably several million American Indians living in the Americas. If a small group of Israelites, say less than thirty, entered such a massive native population, it would be very hard to detect their genes today.’ This confession effectively concedes a major portion of

¹²⁵ Ostler, “DNA Strands in the Book of Mormon,” 66, 68.

¹²⁶ Michael Whiting, “DNA and the Book of Mormon: A Phylogenetic Perspective,” *Journal Book of Mormon Studies* 12 (2003): 24-35, 25.

¹²⁷ Whiting, “DNA and the Book of Mormon,” 26. David McClelland, “Detecting Lehi’s Genetic Signature: Possible, Probable, or Not?” *The FARMS Review* 15 (2003): 35-90, 89: McClelland accepts that Book of Mormon peoples violate ‘almost all the assumptions of Hardy-Weinberg equilibrium’.

what several in this volume argue regarding Amerindian DNA and the Book of Mormon.¹²⁸

At the time Southerton made this comment, the first draft of the human genome had just been published. Few could have imagined the exponential increase in genomics capacity we have witnessed over the last decade, closely tracked by a dramatic increase in the power of computing technology and statistical software. Vanishingly small proportions of admixture can now be detected using hundreds of thousands of markers across the genome. Perhaps more significant than the detection of minute traces of Neanderthal, Denisovan, Australasian and Spanish converso DNA, is the complete failure of scientists to detect pre-Columbian Israelite DNA in any Native Americans. The extraordinary power of this technology to detect trace amounts of admixture is illustrated for Native Americans in Chapters 4C, 7B and 7C and Polynesians in Chapter 9D.

In crafting their defenses of the Book of Mormon, most apologists draw upon Sorenson's Mesoamerican geography and the likelihood that the Book of Mormon peoples interbred with 'others'—originally from Asia—to problematize critiques of the Book of Mormon. Most of the apologetic highlights technical limitations and the uncertainty and inconclusiveness of the DNA research. They also suggest the absence of Middle Eastern DNA might be explained on the basis of genetic introgression, drift, the founder effect, or a range of additional confounding factors:

For instance, how has mutation obfuscated the identification of the original genetic signature (a process called multiple hits)? How does the shuffling of genetic markers affect your results (a process called recombination)? How do you account for the effects of groups of genes being inherited in a pattern that is not concordant with lineage history (a process called lineage sorting)? How do you deal with well-established observation that genetic markers almost never give a single unambiguous signal about an organism's ancestry, but are rather a deluge of signals of varying strengths (a concept called homoplasy)? How do you know that your gene genealogy reflects organismal genealogies (a concept called gene tree versus species tree)? Researchers who use DNA to infer ancestry continually worry whether the genetic markers selected are tracking the individual's history or the gene's history, since one does not necessarily follow from the other.¹²⁹

Typically, apologists dismiss the work of Book of Mormon critics on the basis of mistaken results, exaggerated or 'unsupportable misinterpretations of genetic data', scientific incompetence, failure to adhere to proper scientific

¹²⁸ Daniel Peterson, Introduction, "The Book of Mormon and DNA Research: Essays from The FARMS Review and the Journal of Book of Mormon Studies". Neal A. Maxwell Institute for Religious Scholarship, xii.

¹²⁹ Whiting, "DNA and the Book of Mormon," 34. See also Michael Ash, "Is an Historical Book of Mormon Incompatible with DNA Science?" (FAIR 2004).

norms and methods and ulterior motives.¹³⁰ Apologetic responses are portrayed as pro-science, cautious, skeptical and knowledgeable.

these critics have not given us anything that would pass the muster of peer review by scientists in this field, because they have ignored the real complexity of the issues involved. Further, they have overlooked the entire concept of hypothesis testing in science and believe that just because they label their results as “based on DNA,” they have somehow proved that the results are accurate or that they have designed the experiments correctly. At best, they have demonstrated that the global colonization hypothesis is an oversimplified interpretation of the Book of Mormon. At worst, they have misrepresented themselves and the evidence in the pursuit of other agendas.¹³¹

Adherence to Sorenson’s geography provides apologists with additional benefits. The pre-existence of American Indians removes the need to attribute the evolution of more than 1500 Amerindian languages from Hebrew (and/or Egyptian) within an impossibly short time frame. It can also be used to account for incredible population growth, since the Lehites and Jaredites soon interbred with these Asian ‘others’.

D. Scriptural issues raised by limited geography

While the LG has proven to be a popular buffer against many of the hostile scientific findings, conceding that the Jaredites, Mulekites and Lehites arrived on a heavily populated continent creates considerable difficulties for apologists and LDS believers. There are numerous scriptural passages for which the simplest, and traditional, interpretation strongly supports hemispheric beliefs. A good example of the type of textual problems apologists have grappled with is Lehi’s prophecy from 2 Nephi:

8 And behold, it is wisdom *that this land should be kept as yet from the knowledge of other nations*; for behold, many nations would overrun the land, that there would be no place for an inheritance.

9 Wherefore, I, Lehi, have obtained a promise, that inasmuch as those whom the Lord God shall bring out of the land of Jerusalem shall keep his commandments, they shall prosper upon the face of this land; *and they shall be kept from all other nations, that they may possess this land unto themselves.* And if it so be that they shall keep his commandments they shall be blessed upon the face of this land, and there shall be none to molest them, nor to take away the land of their inheritance; and they shall dwell safely forever. . (2 Nephi 1: 8-9; italics added)

Nephi then warned that if his descendants ‘dwindle in unbelief’ and ‘reject’ God:

¹³⁰ Stewart, “DNA and the Book of Mormon”; Gardner, “The Tempest in a Teapot,” 1, 5; Peterson, Peterson, “Of ‘Galileo Events,’ Hype, and Suppression,” xxvii..

¹³¹ Whiting, “DNA and the Book of Mormon,” 35.

11 Yea, he will bring *other nations* unto them, and he will give unto them power, and he will take away from them the lands of their possessions, *and he will cause them to be scattered and smitten.* (2 Nephi 1: 11; italics added)

Traditionally, Latter-day Saints have believed this prophecy describes the New World as an uninhabited 'promised land' preserved for Lehi's descendants as long as they were righteous. The eventual disobedience of the Lehitites would lead to the conquest of the Americas by Europeans (others). The magnitude of God's promise is significantly diminished in the revisionist LG interpretation. The land 'kept as yet from the knowledge of other nations' is now an unknown segment of Mesoamerica where Lehi's descendants lived alongside and interbred with indigenous Americans.¹³²

One of the difficulties this new interpretation creates is that populations, large or small, living alongside Book of Mormon peoples are never explicitly mentioned within its pages. The magnitude of the challenge of incorporating 'others' into the Book of Mormon narrative was articulated by Gardner.

The Book of Mormon never specifically tells us that they joined with other peoples, but everything that the Book of Mormon tells us indicates that they had to have joined with other peoples.¹³³

Apologists have speculated that the Lehitites never explicitly mentioned their non-Israelite neighbors on the basis that the Book of Mormon is purely a 'dynastic' or 'lineage' history. However, if we consider the Middle Eastern Israelites, the Old Testament records numerous references to Babylonians, Egyptians, Philistines, Hittites and so on.¹³⁴ Sorenson argues that 'the status and origin of these peoples is never made clear because the writers never set out to do any such thing; they had other purposes'. He then goes on to say 'we cannot understand the demographic or cultural history of Lehi's literal descendants without taking into account those other groups'.¹³⁵ Roper believes the surrounding Native American tribes were not mentioned because

¹³² John Sorenson, "When Lehi's Party Arrived in the New World, Did They Find Others there?" *Journal of Book of Mormon Studies* 1 (1992): 1-34, 8. See also Ostler, "DNA Strands in the Book of Mormon," 69: 'Isn't this scripture better seen as no more than a promise that God has granted the descendants of Nephi a choice parcel of land in a very limited area, and that if they are faithful, they will get to keep it in peace forever.'

¹³³ Peter Johnson *Journey of Faith: The New World* (Provo, Utah; Neal A. Maxwell Institute 2007). According to the BYU website "This stunning film continues the journey into the Book of Mormon's thousand-year span. Thirty-two scholars offer insight into this sacred text. Mormon's description of the land, religious history, culture, and traditions creates a fascinating mosaic. Beautiful images filmed on location in Guatemala and Mexico, combined with the art of Joseph Bruckey, illuminate the rich history of the Book of Mormon."

¹³⁴ Sorenson, *An Ancient American Setting*, 50-56; Michael Quinn, "The Ancient Book of Mormon as Tribal Narrative," *Sunstone* (May 2005) 67.

¹³⁵ Sorenson, "When Lehi's Party Arrived" 8, 34.

they did not yet merit description as ‘nations’.¹³⁶ In Quinn’s view, the failure of the Nephite record keepers to mention others may have been because they ‘couldn’t have cared less about anyone else roaming the Western Hemisphere’.¹³⁷

Book of Mormon descriptions also create difficulties for the physical features of the limited geographies. The ‘narrow neck’ was ‘*only* the distance of a day and a half’s journey’ (Alma 22: 32; italics added). At 120 miles wide, the Gulf of Tehuantepec appears to be insufficiently narrow. Sorenson postulates these journeys were achieved using staging posts of trained messengers travelling at speed for many hours each, or highly skilled lone runners travelling up to five miles per hour for more than a day.¹³⁸

Another challenge the LG creates is the need for an additional Hill Cumorah in Mesoamerica and the transportation of the gold plates to a hill in New York. The Hill Cumorah mentioned in the Book of Mormon is near the narrow neck of land (Ether 9: 3, see also Figure 12) and appears to be near the site of the final Lehite (and Jaredite) battles. Most Latter-day Saints holding hemispheric views believe the Hill Cumorah located in New York State, and the Book of Mormon Hill Cumorah, are one and the same. Proponents of the Mesoamerican LG have had to explain how and why the gold plate record travelled from Mesoamerica to New York State (some 3000 miles) after the final conflagration at Hill Cumorah in 421 AD.¹³⁹

E. Claims of Middle Eastern DNA in Native Americans

Given the lack of archaeological, anthropological, linguistic and now population genetics evidence for the Book of Mormon, LDS apologists have felt considerable pressure to find some positive stories to tell. Recently, in less formal settings, LG apologists have shown far less restraint in claiming positive DNA evidence to defend the Book of Mormon. In 2008 FairMormon produced a DVD entitled *The Book of Mormon and New World DNA*, containing interviews with numerous LG scholars and scientists. Keith Crandall, then professor of biology at BYU, features prominently in the DVD, repeatedly claiming that Middle Eastern DNA has been found among the Maya.¹⁴⁰

¹³⁶ Mathew Roper, “Nephi’s Neighbors: Book of Mormon Peoples and Pre-Columbian Populations,” *The FARMS Review* 15 (2003): 91-128, 114-15.

¹³⁷ Quinn, ‘The Ancient Book of Mormon’ 67.

¹³⁸ Sorenson, *An Ancient American Setting*, 17.

¹³⁹ Sidney Sperry, “Were there Two Cumorahs?” *Journal of Book of Mormon Studies* 4 (1995): 260-268. See also Roper, “Limited Geography,” 254.

¹⁴⁰ Segments of *The Book of Mormon and New World DNA* are freely available on Youtube; [Part 1](#), [Part 2](#), [Part 3](#).

Crandall joined BYU in 1996 and converted to the LDS faith in 2004. He was Chair of the BYU Department of Integrative Biology from 2006 until 2012, when he resigned to take up a position at George Washington University in Washington D.C.

The most recent DNA evidence that I've seen, in terms of peopling of the Americas, shows this Middle Eastern haplotype at greatest frequencies in the Mayan people; so if that's your perception of where Lehi and company set up shop then the DNA evidence would be consistent with that.

the fact is, based on this paper by Noah Rosenberg from the University of Michigan that there are in fact Middle Eastern haplotypes in where we as Latter-day Saints would expect them to be; in the Mayan population, as opposed to across all North and South America.

when you look at the data from North and South America its clear that the majority of those populations have mixed Asian/European ancestry; although there is an interesting bit of data that probably only an LDS scientist would pick up...[chuckle] ...which shows for the Mayan people and maybe one or two other cultures close geographically to the Yucatan area...there's actually a nice infusion of Middle Eastern...what they call Middle Eastern genotypes in those populations.

The paper Crandall is referring to is the work of Sijia Wang, Noah Rosenberg and others, who compared Native Americans with Africans, Europeans, Siberians and East Asians (Figure 13).¹⁴¹ The authors do not claim Middle Eastern haplotypes were found among the Maya. It is not possible for Crandall's claims to be correct because the authors do not compare Native American DNA with Middle Eastern DNA. The most that can be concluded from the paper is that African and *European* admixture is common in many Native American populations. All subsequent whole genome studies (see Chapters 4C, 7B and 7C) have also failed to find evidence of pre-Columbian Middle Eastern or Hebrew DNA in any Native American populations.

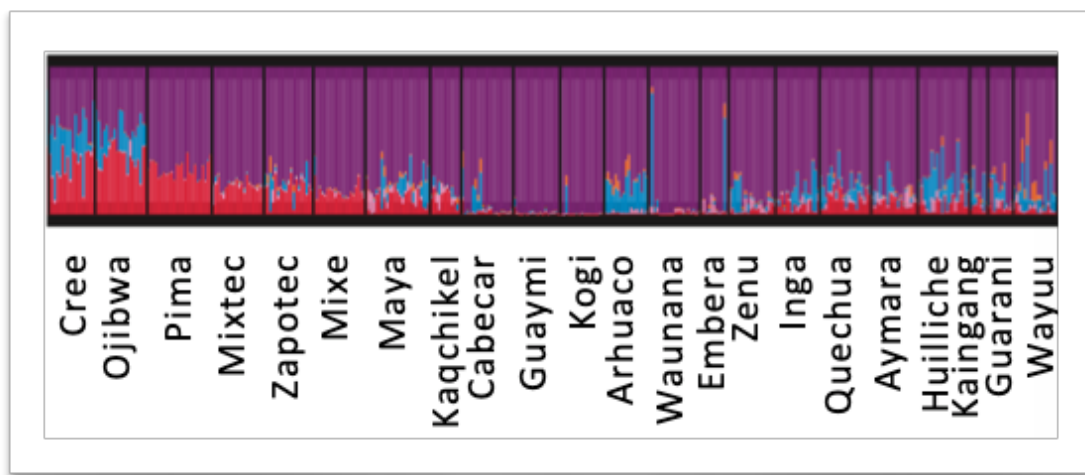


Figure 13. Admixture in twenty-two Native American populations. The Native American populations are arranged left to right in order of their distance from the Bering Strait. The Maya population (21 individuals) has about 10% European/African admixture. The image is an assembly of vertical lines, one for each individual tested in each population. The colored proportion of each

¹⁴¹ Wang et al "Genetic Variation and Population Structure in Native Americans"

line corresponds with America (purple), Siberia (red), East Asia (pink), Europe (blue) and Africa (orange). Source: Adapted from Figure 6 in Wang et al. 2007.

The FairMormon DVD goes to considerable lengths to expose the critic's lack of understanding of population genetics, singling out Southerton by reference to a 'plant geneticist'.¹⁴² Crandall, who by any measure is an accomplished scientist, was particularly forthright:

The real issue is that these guys don't actually look at the population genetic literature; they don't understand the population genetic literature because they're not population geneticists; so they couldn't interpret these kinds of data. It's a very tricky kind of literature and a tricky kind of data to wrap your brain around. But it's pretty patently obvious when you look at their data in this one figure in particular. If that's what you're looking for it's there.¹⁴³

Given Crandall's warning about the 'tricky' nature of population genetics, it is ironic that he allowed himself to be tricked by the data in Rosenberg's paper.

John Tvedtnes—who is not a population geneticist nor a scientist—appears frequently in the FairMormon DVD making several unsubstantiated claims about the DNA science. In his eagerness to defend the LG and identify DNA links with the Middle East, Tvedtnes claimed the X lineage—found also in Europe and the Middle East—had been found in Mesoamerica. However, the X lineage has not been detected in Central or South America (see Table 3). He made similar claims about an alleged haplogroup 'N' found in Great Basin natives. It turns out the authors simply used 'N' to denote samples of mtDNA that belonged to 'None' of the four major (A, B, C and D) founding lineages. This error should have been picked up earlier because Ryan Parr, the lead author of the Great Basin research, also appears in the DVD. When Southerton drew Tvedtnes' attention to these errors he directed FairMormon to remove his 'problematic' statements from the DVD. The DVD is still available in its original form in spite of the fact that *all* of its positive DNA claims are unfounded.¹⁴⁴

¹⁴² Population genetics is the study of changes in the frequencies of genes and alleles in populations over space and time. Southerton has published several papers in this field in international peer-reviewed journals. See S Dillon, R McEvoy, DS Baldwin, S Southerton, C Campbell, Y Parsons, "Genetic diversity of *Eucalyptus camaldulensis* Dehnh. following population decline in response to drought and altered hydrological regime". *Austral Ecology* 40 (2015): 558-572; S Dillon, R McEvoy, DS Baldwin, GN Rees, Y Parsons, S Southerton, "Characterisation of adaptive genetic diversity in environmentally contrasted populations of *Eucalyptus camaldulensis* Dehnh. (River Red Gum)". *Plos One* 9 (2014): e103515; SK Dillon, MF Nolan, P Matter, WJ Gapare, JG Bragg, SG Southerton, "Signatures of adaptation and genetic structure among the mainland populations of *Pinus radiata* (D. Don) inferred from SNP loci". *Tree Genetics & Genomes* 9 (2013): 1447-1463; Southerton "The human colonization of the Americas: Population genetics",

¹⁴³ FairMormon DVD "The Book of Mormon and New World DNA"

¹⁴⁴ Shipments of the problematic DVD include directions to the FairMormon [Errata page](#) where Tvedtnes' 'clarifications' can be found.

Even more problematic apologetic claims of positive evidence are those made by Ugo Perego, who has published mtDNA research on Native Americans. Perego has a bachelors and masters degree from BYU and completed his PhD (2010) in genetics and biomolecular sciences (University of Pavia, Italy) while working at the Sorenson Molecular Genealogy Foundation in Salt Lake City. Between 2008 and 2010 Perego published three papers that demonstrated *all* five of the major founding mitochondrial lineages (A, B, C, D and X; 99% of lineages) found in contemporary Native Americans were present in the New World in excess of 15,000 year ago.¹⁴⁵ In 2011 Perego stated 'Lehi's group could have belonged either to a typical Middle Eastern lineage or to a rare one, including some that might have had a close Asian affinity.'¹⁴⁶ The reference to lineages with 'close Asian affinity' could lead readers to incorrectly conclude the mtDNA of Lehi's party may be found among the five major founding lineages which are of Asian origin. Perego made even more dubious claims in 2014 when he stated 'It is possible that the DNA of Lehi's group is one of the most prominent lineages in the American continent but that we do not recognize it as such due to lacking knowledge of their mtDNA profile.'¹⁴⁷ Perego's own published work has shown this cannot be the case; all prominent lineages are of Asian origin and they entered the Americas over 12,000 years before the Book of Mormon period.

¹⁴⁵ Achilli et al., "The Phylogeny of the four Pan-American mtDNA haplogroups"; Ugo A. Perego et al., Distinctive Paleo-Indian migration routes from Beringia marked by two rare mtDNA haplogroups. *Current Biology*. (2009)19:1-8; Ugo A. Perego et al., The initial peopling of the Americas: a growing number of founding mitochondrial genomes from Beringia. *Genome Research*. (2010) 9:1174-9.

¹⁴⁶ Perego, "The Book of Mormon and the Origin of Native Americans from a Maternally Inherited DNA Standpoint,"

¹⁴⁷ Ugo A. Perego and Jayne E. Ekins, "Is Decrypting the Genetic Legacy of America's Indigenous Populations Key to the Historicity of the Book of Mormon?" *Interpreter: A Journal of Latter-day Saint Faith and Scholarship* 12 (2014): 237-279.



7. Looting the Maya

A. Mesoamerican apologetics

Two Mesoamerican civilizations, the Olmec and Maya, merit closer attention because, for decades, Mormon archaeologists and apologists have associated these civilizations with the Book of Mormon. The Jaredites (2200 to 600 BC) and Nephites (600 BC to 400 AD) coincide with the Olmec and Mayan civilizations respectively.¹⁴⁸ The Olmec farmed the fertile, Nile-like, levees in southern Veracruz and the neighboring state of Tabasco from about 1500 BC until their decline in 400 BC (Figure 14). They are most famous for the colossal stone heads—multi-ton portraits of their kings—that they carved from basalt imported from great distances. The Olmec civilization relied heavily on maize, which subsequently contributed about four-fifths of the nourishment of Mesoamericans.¹⁴⁹ An important development that may have nudged the Olmec civilization into prominence was a process for cooking maize known as ‘nixtamalization’; a method invented by Olmec housewives to soften the grain’s hard exterior.¹⁵⁰ The Olmec, who in addition to bringing maize to prominence, can also be thanked for domesticating *Theobroma cacao*—the chocolate tree.

¹⁴⁸ Southerton *Losing a Lost Tribe* 80-83; Sorenson, *An Ancient American Setting*, 18-19. Sorenson, “When Lehi’s Party Arrived” 23.

¹⁴⁹ Maize is a domesticated form of teosinte, a wild Mexican grass. DNA studies have revealed that the teosinte varieties most closely related to modern maize grow in the Balsas River basin in southwestern Mexico, suggesting this is where it was domesticated. See Rong-Lin Wang et al., “The Limits of Selection during Maize Domestication” *Nature* 398 (1999): 236-39; Southerton *Losing a Lost Tribe* 80-81.

¹⁵⁰ Sophie D. and Michael D. Coe, 1996. *The True History of Chocolate*. (London: Thames and Hudson, 1996).



Figure 14. Location of the Olmec and Mayan civilizations in Mesoamerica.
The Olmec flourished from 2000 to 400 BC and the Maya from 2000 BC to 900 AD. The locations of several Mayan cities established between 750 and 500 BC are shown. Mayan cultural developments first appeared in Kaminaljuyu located in the southern highlands of modern day Guatemala.

The Mayan civilization spread across southeastern Mexico, Guatemala, Belize, and western Honduras and El Salvador (Figure 14). This region broadly comprises the northern lowlands encompassing the Yucatán Peninsula, the highlands of the Sierra Madre and the narrow lowlands along the Pacific coast. The Maya established the most complex civilization in pre-Columbian America, with a highly developed writing system and sophisticated agriculture, architecture, mathematics and calendar. The first Maya cities appeared around 750 BC and by 500 BC these cities had sizable populations, monumental architecture and large temples.¹⁵¹ The Mayan developmental phase of most interest to Latter-day Saint scholars is the pre-Classic period (2000 BC to 250 AD).

For several decades Sorenson has believed ‘The city of Nephi was probably the archaeological site of Kaminaljuyu, which is now incorporated within suburban Guatemala City; the land of Nephi in the broader sense constituted the highlands of southern Guatemala.’¹⁵² Evidently most LDS apologists now share this view. In the 2007 BYU documentary *Journey of Faith: The New World*, Mesoamerican apologists Sorenson, Gardner and Peterson and several other BYU academics contend that within 30 years of Lehi’s arrival in the New

¹⁵¹ Coe, Michael D. *The Maya* (7th ed.). London: Thames & Hudson, 2005).

¹⁵² Sorenson *An Ancient American Setting* 47.

World, Nephi assumed leadership of the local Maya and established the city of Kaminaljuyu.¹⁵³

Sorenson is committed to Kaminaljuyu because it is where the earliest developments of Mayan language and culture have been found. Through his diffusionist lens, Sorenson sees the arrival of the Lehites playing a critical role in accelerating the development of the Maya civilization. In the BYU DVD Sorenson said:

Kaminaljuyu was in fact the seedbed of civilization in southern Mesoamerica and that is the picture we get for the city of Nephi in many ways. ... the sudden development is what I would expect of an immigrant party with a high level of skill; technologically; but maybe more intellectually and culturally, being inserted into a place and building in a new environment a new manifestation of civilization.

Alejandro Gonzalez, an LDS native Mesoamerican and Director of the Teotihuacan Archaeological Zone in Mexico, is also convinced vital cultural advances among his own ancestors relied on the superior technology introduced by the Lehites.

The influence of who dominates whom; the small arriving culture or the existing culture, is the one with more success. Who has more success in technological matters, in agricultural matters and in constructing buildings?

The Book of Mormon account gives no details of this momentous union of Old and New World cultures. About 40 years after their arrival in the Americas, Nephi is warned by God to take his family, several of his brothers and their families and his sisters into the wilderness.¹⁵⁴ The establishment of the city of Nephi is described in these terms:

7 And we did take our tents and whatsoever things were possible for us, and *did journey in the wilderness for the space of many days*. And after we had journeyed for the space of many days *we did pitch our tents*.

8 And my people would that we should call the name of the place Nephi; wherefore, we did call it Nephi.

11 And the Lord was with us; and we did prosper exceedingly; for we did sow seed, and we did reap again in abundance. And we began to raise flocks, and herds, and animals of every kind.

15 And I did teach my people to build buildings, and to work in all manner of wood, and of iron, and of copper, and of brass, and of steel, and of gold, and of silver, and of precious ores, which were in great abundance. (See 2 Nephi 5: 7-15, italics added)

¹⁵³ Kaminaljuyu was primarily occupied from 1500 BC to AD 1200. The ruins lie under modern day Guatemala City, which is located in a highly fertile valley in the Guatemalan highlands (alt 2000m) surrounded by volcanoes. Major settlements began to appear in 900–800 BC and by 400 BC there were dense populations found in the city and numerous surrounding towns.

¹⁵⁴ The wilderness Nephi walked through was apparently the Valley of Guatemala, a broad fertile plain that has been populated for almost 10,000 years. In 600BC it would have been dotted with Mayan villages sustained by maize, bean, squash and chili cropping and orchards of sapodilla and avocado.

The apologists believe Nephi encountered indigenous Maya at Kaminaljuyu—the most densely populated city in the Americas at the time—and quickly took control of the city. Virginia Pearce, who appears briefly in the DVD, believes this astonishing power transition was achieved because Nephi was a ‘can do kinda guy’.¹⁵⁵ Gardner elaborates on Nephi’s talents:

For someone to not only be able to gather large numbers of people together, but to coordinate; to get them to live in the same area; to get them to have the same basic beliefs; to get them to have the same economic system; to get them working together rather than working separately—and Nephi’s able to do that—pull them together.

Not unexpectedly, non-Mormon scientists intimately aware of the achievements of the Maya find such Latter-day Saint views deeply disturbing. Mormon beliefs rob the Maya of their own identity in the same way the looting of Maya antiquities robs them of their cultural history.¹⁵⁶ Michael Coe, who spent his entire research career studying the Maya, recently lamented the theft of Maya heritage that derives from Mormon beliefs originating with the Book of Mormon.

You’re dealing with a native New World culture that is mainly, 99.9% autochthonous that is; it rose up by itself. These people, these Mayans, and Aztecs, and all these people did this stuff under their own steam, and [the Mormon] approach takes away from them a heritage which belongs to them—and not to Europeans or Hebrews, or ancients out of the near East, or anybody.¹⁵⁷

B. Mesoamerican and Maya population genetics

Considerable molecular research has been focussed on the genetic background of Mesoamerican populations including the Maya. MtDNA lineages for 2670 native Mesoamericans have now been published, including 633 individuals of Maya ancestry (Table 3). The X lineage is noticeably absent in Mesoamerica. Of 23 non-Asian lineages found in Mesoamericans, 13 are African and 10 are European. A similar picture is seen among the Maya, where lineages not belonging to the four major founding lineages include three Sub-Saharan African lineages and one European lineage. The mitochondrial research failed to find any evidence of Middle Eastern or Hebrew DNA in Mesoamericans or Mayans.¹⁵⁸

¹⁵⁵ Virginia Pearce is an author and former member of the LDS Young Women General Presidency.

¹⁵⁶ Erik Vance “Losing Maya Heritage to Looters” *National Geographic* (10 August 2014)

¹⁵⁷ [Interview of Michael Coe by John Dehlin](#) August 2011. Michael Coe passed away 25 September 2019 at age 90. His [New York Times obituary](#) notes his major contribution to deciphering the Maya language.

¹⁵⁸ Four unclear Mesoamerican lineages are excluded as they were from early research when lineage identification was less reliable.

Table 3: Maternal DNA lineages of Mesoamericanst

Population	Mitochondrial DNA lineage (no. of individuals)							
	A	B	C	D	X	Eur	Afr	TOTAL
Mesoamerica	1405	590	501	151	0	10	13	2670
Maya	373	122	96	38	0	1	3	633

[†] Source literature is listed in [Appendix C](#) (Mesoamerican) and [Appendix D](#) (Maya).

The largest genomic study of Native Americans to date, published by Chacón-Duque and co-authors in 2018, was focussed on Latin Americans.¹⁵⁹ In contrast to all of the mitochondrial studies discussed above, which were exploring the pre-Columbian ancestry of Native Americans, the Latin American study was specifically designed to explore admixture. The authors were particularly interested in where the European DNA detected in the mitochondrial research (Table 1 and 3) was derived from, and when it arrived in the New World. The astonishing power of whole genome research to answer these questions is revealed in this unique Latin American study.

All of the 6,589 Latin Americans included in the study were screened for over half a million genomic markers. The genomic DNA of each individual was then compared to the genomes of individuals in a reference group of 117 populations scattered across Europe, the Mediterranean, Sub-Saharan Africa, East Asia and the Americas. These comparisons revealed high rates of admixture (30-83%), most of which was derived from Europe (Figure 15).¹⁶⁰

¹⁵⁹ Chacón-Duque et al., “Americans show wide-spread Converso ancestry”

¹⁶⁰ Chacón-Duque et al., “Americans show wide-spread Converso ancestry” 3-4.

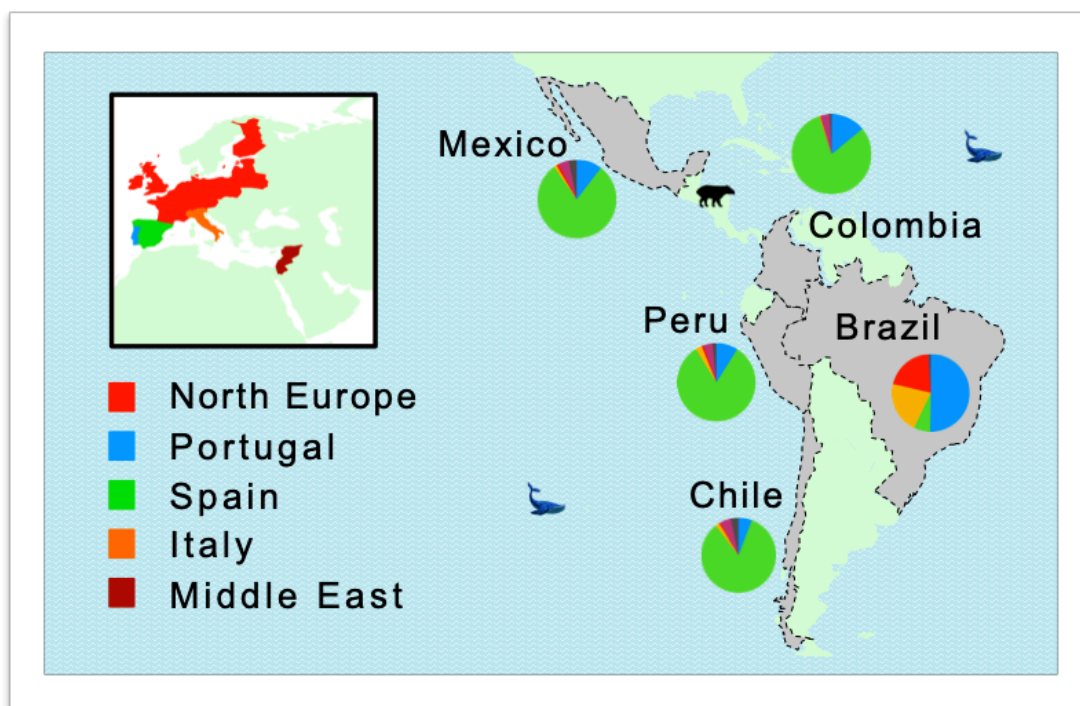


Figure 15. European and Middle Eastern admixture in Latin Americans.

Each American population is represented by a pie chart. The different colored slices in each pie represent the regions in Europe and the Middle East where admixture was derived from. Note the high Portuguese, Italian and Northern European ancestry in Brazil and high Spanish ancestry in Mexico and along the east coast of South America. Note: African admixture is excluded. Adapted from Chacón-Duque et al. 2018, supplementary Tables 10 and 11.

Small amounts (about 1-8%) of Middle Eastern ancestry were detected in all Latin American populations tested.¹⁶¹ About half of the Middle Eastern admixture was derived from Sephardic populations, indicating Hebrew ancestry.¹⁶² The different proportions of Middle Eastern and Sephardic DNA are shown in Figure 16. Individuals with Sephardic ancestry were detected across all Latin American populations studied, however, many more were observed in regions with the highest rates of Spanish ancestry.

¹⁶¹ Chacón-Duque et al., “Americans show wide-spread Converso ancestry” 4-5.

¹⁶² Sephardic Jews previously lived around the Mediterranean, predominantly in Spain and Portugal. Most now live in Israel with a similar number of Ashkenazi Jews, who previously lived in northeastern Europe, predominantly in the Rhineland. They have close genetic ties. See Southerton *Losing a Lost Tribe* 119-129.

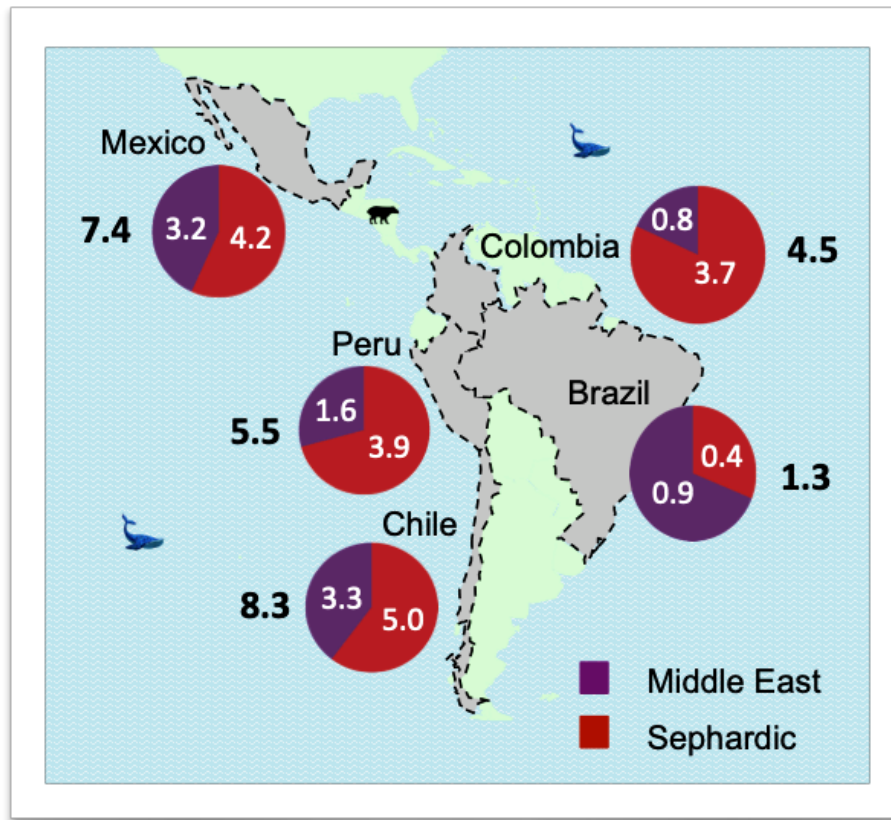


Figure 16. Middle Eastern and Sephardic admixture in Latin Americans. Each population is represented by a pie chart. The different colored slices in each pie represent the Middle Eastern and Sephardic admixture as a proportion of the total admixture in each population. The number next to each pie is the proportion of Middle Eastern DNA present in the total admixture (African admixture is excluded). Adapted from Chacón-Duque et al. 2018, supplementary Tables 10 and 11.

Using ancestry tract analysis (see Chapters 3B and 4C), Chacón-Duque et al. estimated when the different sources of admixture arrived in the Americas.¹⁶³ The first wave of admixture arrived about 10 generations ago from the Iberian Peninsula (Spain and Portugal). Non-Iberian European admixture, from Northern Europe and Italy, arrived 2-3 generations later, which is consistent with the more recent arrival of Germans and Italians. When the authors examined the Eastern Mediterranean/Sephardic admixture they found it had also reached the New World about 10 generations ago; the same time DNA from Portugal and Spain had arrived. This strongly suggests the Sephardic DNA, scattered across Mesoamerica and South America, had arrived after Columbus. The authors conclude the Sephardic DNA was carried by Iberian Conversos, immigrant Jews who had 'converted' to Christianity in Spain and Portugal in the 14th and 15th century to avoid persecution (or execution). As with all other genomic studies, the authors

¹⁶³ Chacón-Duque et al., "Americans show wide-spread Converso ancestry" 5-6.

failed to detect any evidence of pre-Columbian Middle Eastern or Hebrew DNA in Native Americans.¹⁶⁴

C. 'Candidate' Lamanites among the Maya

Mormon LG apologists have focussed virtually all of their attention on the Maya because no other New World societies meet the criteria demanded of the Book of Mormon civilizations. The Maya satisfy the three most essential criteria. They had (1) a sophisticated written language, (2) built and lived in large cities and (3) they flourished during the time period of the Book of Mormon.

Based on the origins of the DNA of the indigenous Maya, we can roughly calculate the number of 'candidate' Lamanites that *may* be among them. For the purposes of this theoretical exercise it is assumed candidate Lamanites are among the Europeans and Middle Easterners (non-Africans) who entered New World populations. MtDNA studies on 633 Maya revealed a single individual with DNA derived from Europe (Table 3). This is equivalent to 1,580 candidate Lamanites per million Maya.

$$1,000,000 / 633 = \mathbf{1,580}$$

The work of Chacón-Duque et al. revealed that about 4% of the European + Middle Eastern admixture among Latin Americans is Jewish in origin (see 16 above).¹⁶⁵ The proportion of candidate Lamanites among the Maya is therefore:

$$0.04 \times 1,580 = \mathbf{63}$$

By excluding Europeans and focussing on Jewish admixture, only 63 candidate Lamanites remain per million Maya. However, this estimate is unduly optimistic given the overwhelming evidence that any Jewish DNA in the Maya came from Spain after Columbus, and the fact that it is spread at low frequency across Central and South America (summarised in Figure 17). It is clear from the recent genomic studies on the Maya, and the living descendants of the Aztec and Inca empires, that if there were once Lamanites, their DNA has vanished.

¹⁶⁴ See Wang et al., "Genetic variation and population structure in Native Americans."; Reich et al., "Reconstructing Native American population history"; Hellenthal et al., "Genetic Atlas of Human Admixture History".

¹⁶⁵ Chacón-Duque et al., "Americans show wide-spread Converso ancestry" Supplementary Table 11.

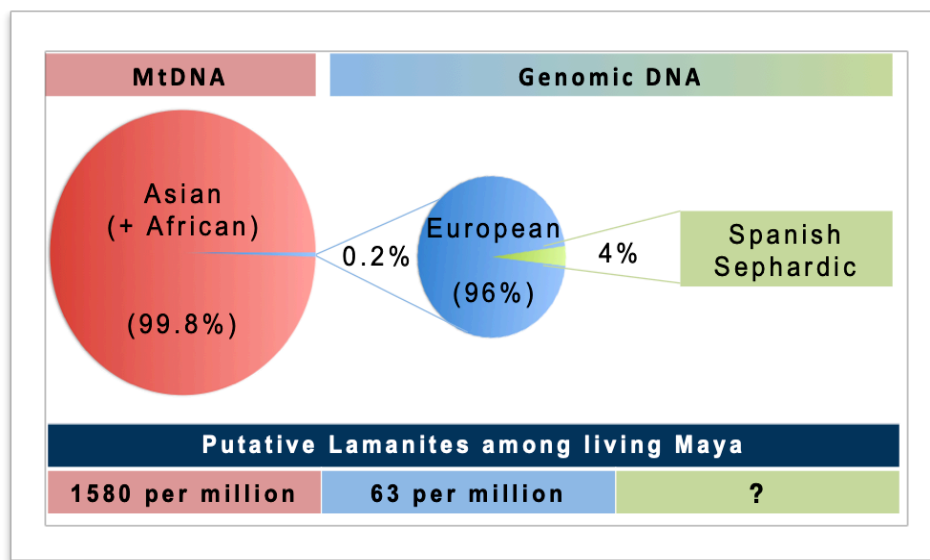


Figure 17. The origin of genomic admixture among the Maya

Mitochondrial DNA studies revealed 0.2% of European admixture in the Maya. Whole genome studies have revealed that about 4% of this European admixture is of Jewish origin; roughly equivalent to 63 Jews per million Maya. Ancestry tract length studies subsequently revealed that the Jewish DNA arrived at the same time as Spanish DNA.

If Lehi's descendants 'multiplied exceedingly' and went on to lead a major New World civilization, as the Book of Mormon clearly describes, there is no reason to believe their DNA would escape detection. Even if we were to assume the Lehtes became an elite ruling class, as the LG apologists have argued, we would still expect to see clear traces of their DNA. They ruled for a thousand years. The millennial coexistence of the Lehtes and the indigenous population would have inevitably resulted in a steady transfer of DNA between the two groups. The complete extinction of this foreign DNA in native populations would be virtually impossible.



8. The rise of Heartland pseudoscience

A. The Heartland movement

Smith's demotion by Mesoamerican LG apologists has proven too much of a stretch for some Mormons at the scientific fringe, who interpret the text literally and engage the science superficially. The population genetics research, and LG apologetic responses to it, has spawned what has become known as the [Heartland movement](#), an assembly of amateur 'scholars,' led by the creationist Rodney Meldrum, who believe Book of Mormon events took place in North America.¹⁶⁶ Meldrum—a salesman with no scientific training beyond high school—once identified himself as a 'senior scientific researcher on a natural sciences textbook'. He first became aware of claims that 'DNA proved the Book of Mormon false' in 2004. He knew this claim was wrong since 'the theories of men, put forward through science, will eventually conform to the truths of the gospel, not the other way around'.¹⁶⁷ Meldrum may have been more shocked to discover most Mormon scholars had retreated to Mesoamerica to defend the Book of Mormon, than by the DNA research itself. In his mind, the setting of the Book of Mormon was indisputably the heartland of North America.

Meldrum soon discovered he was not alone in his pursuit of Jewish DNA in North American Indians. Donald Panther-Yates runs his own company named '[DNA Consultants](#)' that provides a 'Cherokee test' and a 'Jewish Fingerprint Plus' test. Before DNA genealogy appeared, Yates, who converted to Judaism in 2002, was convinced the Cherokee have Jewish ancestry. Yates

¹⁶⁶ In 2008 Meldrum published the DVD '*DNA Evidence for Book of Mormon Geography: New scientific support for the truthfulness of the Book of Mormon; Correlation and Verification through DNA, Prophetic, Scriptural, Historical, Climatological, Archaeological, Social, and Cultural Evidence*' and in 2009 published *Rediscovering the Book of Mormon Remnant through DNA*. (Honeoye Falls, NY: Digital Legend Press).

¹⁶⁷ Introduction, *Rediscovering the Book of Mormon Remnant*.

has a PhD in classical literature and has primarily worked in public relations. DNA Consultants does not employ any molecular geneticists; rather, they outsource all molecular work to third parties and provide ‘analysis’ of these results for their clients. Not unexpectedly, lack of scientific training, commercial interests and the expectations of their clients, undoubtedly influence their interpretations of the DNA data.

Several commercial DNA labs for years have been trying to identify a pattern of DNA markers that would prove Cherokee ancestry. The reason is that perhaps over a million Americans claim Cherokee ancestry. There is big money to be had in people who think that their great-grandmother was a Cherokee Princess.¹⁶⁸

In his quest for evidence to support his beliefs Meldrum has aligned himself with like-minded Mormon mavericks. The natural science research Meldrum was engaged in was on Dean Sessions’ ‘[Universal Model](#)’, fundamentalist pseudoscience that is foundational to Meldrum’s creationist beliefs and his rejection of evolution and climate change science.¹⁶⁹ Meldrum and Sessions attended the same congregation in Tucson Arizona in the late 1980s. Sessions believes we are currently living in a ‘Scientific Dark Age’ and his Universal Model will ‘restore truth and order in science by identifying new natural laws that help describe and explain nature so that it can be understood and comprehended more clearly’.¹⁷⁰ Another Mormon with similar leanings is Wayne May, publisher, since 1993, of [Ancient American](#); a quarterly magazine recycling archaeological fakes and forgeries that have plagued the American archaeology community for many decades. May believes there has been a prolonged scientific cover-up of evidence of pre-Columbian contact with Native Americans. The magazine’s editorial position ‘stands firmly on behalf of evidence for the arrival of overseas visitors to the Americas hundreds and even thousands of years before Columbus’.¹⁷¹

Meldrum is the founder and president of the FIRM Foundation (Foundation for Indigenous Research and Mormonism), which now holds biennial expos and conferences on Book of Mormon evidence supporting the Heartland model. Attendance at these conferences regularly exceeds 7,000, and—along with brisk sales of books, DVDs and tours—has ensured the

¹⁶⁸ <https://www.accessgenealogy.com/native/cherokee-dna.htm>

¹⁶⁹ Meldrum was researching for the 800-page ‘textbook’ *Universal Model: A New Millennial Science*, Vol. 1, *Earth System* by Dean Sessions. The pseudoscience behind the Universal Model was heavily criticized by staff and students of BYU’s Department of Geological Sciences in the student newspaper the [Daily Universe](#), April 4, 2017.

¹⁷⁰ Universal Model Q&A [webpage](#).

¹⁷¹ May believes the research published in his magazine will lead to ‘virtually a total revision of American antiquity’. May has authored five books (and numerous DVDs) on the subject of Book of Mormon Archaeology in North America. They are entitled; *This Land: Zarahemla and the Nephite Nation* (2002); *This Land: Only One Cumorah* (2004); *This Land: They Came from the EAST* (2004); *This Land: America 2,000 B.C. to 500 A.D* (2009); *Book of Mormon Evidences and The Mound Builders of North America* (2015). [Website](#). For a critique of May and Goble’s 2002 book see: Murphy, *Imagining Lamanites*, 220-228.

Heartland movement is financially well resourced. In 2014 the Heartlanders (Zarahemla Holdings) paid \$300,000 for 13.8 acres of Iowa farmland directly across the Mississippi River from Nauvoo Illinois where they carried out 'bulldozer' archaeological research aimed at discovering the remains of the Book of Mormon's Temple of Zarahemla (Mosiah 1: 18; Figure 18). The dig was apparently unsuccessful and all mentions of the failed project have been erased from Heartland websites.¹⁷²



Figure 18. Heartland archaeological dig near Nauvoo Illinois in 2015

The picture shows Wayne May using dowsing rods during an excavation aimed at discovering the Book of Mormon Temple of Zarahemla. A large bulldozer was eventually used to excavate the site before the hole was filled in and the dig abandoned.

B. The X lineage

The central evidence Meldrum presents in his case for the Book of Mormon is his misguided conviction that the mitochondrial X lineage, found among natives of North America, predominantly among Algonquin peoples, is derived from Middle Eastern Jews. Haplogroup X is a widely dispersed and ancient haplogroup that has since been divided into several subhaplogroups. Native Americans carry subhaplogroup X2a, which is not found in Jewish or any other population outside of the Americas.

Perhaps the most compelling evidence the X lineage entered the Americas at the same time as the four major founding lineages, is the amount of genetic

¹⁷² Andrew White is an archaeologist and anthropologist at the University of South Carolina. He maintains a website, [Andy White Anthropology](http://andywhiteanthropology.com), where he tracks the often destructive activities of amateur archaeologists including the unprofessional excavations of [Heartland Mormons](http://heartlandmormons.com).

variation observed in North American X lineages. When Native Americans became isolated from their Asian ancestors, their genes began steadily accumulating new mutations (markers). The number of mutations each founding lineage accumulated can be used to estimate approximately how long ago the lineage entered the Americas. This research has consistently shown that the X2a lineage arrived in the Americas at about the same time as the other four founding lineages (Table 4).

Table 4. The age of the major New World mitochondrial DNA haplogroups[†].
The most accurate estimates of the time to the most recent common ancestor for each of the five Native American mtDNA founding lineages. Note: One of the authors of this research, Ugo Perego, is LDS and also rejects Meldrum's claims.

Haplogroup	Perego et al. 2009	Fagundes et al. 2008
A2	15,000	20,500
B2	16,500	20,300
C	17,000	17,200
D1	16,300	21,600
X2a	17,000	18,000
All lineages	15,500	19,500

[†] Source: Perego et al. *Current Biology* 19 (2009):1-8 and Fagundes et al. *American Journal of Human Genetics* 82 (2008): 583-592

The discovery of the X2a lineage in the 9,000-year-old bones of [Kennewick man](#), recovered from the banks of the Columbia River near Kennewick Washington, should have settled the matter.¹⁷³ However, Meldrum is impervious to these awkward facts because of his unwavering belief in the Universal Model which, rather conveniently, asserts all current scientific dating methods are flawed.

C. Apologists attacking apologists

The embarrassing pseudoscience Meldrum and his followers are producing has attracted the ire of LG apologists and scientists alike. FairMormon reviewed Meldrum's DVD *DNA Evidence for Book of Mormon Geography* soon after its publication.¹⁷⁴ While the lengthy review is critical of his DNA and

¹⁷³ Morten Rasmussen et al., The ancestry and affiliations of Kennewick Man *Nature* 523 (2015): 455-458.

¹⁷⁴ The FairMormon review extends to over 170 pages and can be found [here](#).

geography claims, the authors are most troubled by his assembly of abundant prophetic evidence (discussed in Chapter 1) in support of his, single Cumorah requiring, North American Heartland model. Exposing the divide between past prophets, and the current policy of taking no official position on geography, is considered the greater sin.

FARMS joined the fray in 2010 when Gregory Smith published a scathing 145 page review of Meldrum's 2009 book *Rediscovering the Book of Mormon Remnant through DNA*.¹⁷⁵ Smith believes 'Latter-day Saints, and the Church of Jesus Christ deserve far better than Meldrum's pseudo-scientific snake oil and strained proof-texting'. Not surprisingly, Smith is repulsed by Meldrum's attempt to use DNA evidence to support the widely held Mormon belief that the three major races of man, African, European and Asian, originated respectively from Noah's three sons Ham, Shem and Japheth. While suspicious of his Young Earth Creationist views, Smith is particularly disturbed by the fact that Meldrum's 'style of presentation is heavily laced with the implication that he is a special, chosen person on a divinely sanctioned mission'. The Church has also warned in its DNA essay that 'arguments that some defenders of the Book of Mormon make based on DNA studies are also speculative'.

Meldrum's DNA atrocities have also angered the very scientists who conducted the original DNA research he now misrepresents. Deborah Bolnick published the first molecular research on the prehistoric Adena and Hopewell cultures of the Illinois and Ohio Valleys and—among several other scientists—was interviewed for the Heartland documentary *The Lost Civilizations of North America*.¹⁷⁶ The underlying premise of the documentary is that Old World civilizations spurred development of Native American cultures in pre-Columbian times and politicians and scientists have colluded in a century-long cover-up of the true ancestry of Native Americans. The scientists were so upset by how they were portrayed they published a [statement](#) rejecting the films misleading claims.

Like the great majority of professional archaeologists and anthropologists, we have seen overwhelming evidence that Native Americans were independently responsible for designing and creating the Newark Earthworks, Cahokia Mounds, and the myriad other pre-Columbian sites across the United States. Each of us was interviewed for this film. None of us was asked directly for our opinion on what turned out to be its underlying claim; that Old World civilizations played an active role in the development of Native American cultures, especially the mound builders. ...we reject

¹⁷⁵ Gregory L. Smith "Often in Error, Seldom in Doubt: Rod Meldrum and Book of Mormon DNA" FARMS Review 22/1 (2010): 17–161. Critics believe hostile 'attack pieces' like Smith's, on a fellow Mormon, contributed to the demise of FARMS in 2011.

¹⁷⁶ *The Lost Civilizations of North America* Directed by R. Stout. Bountiful, UT: Digital Legends. The Adena and Hopewell Indians were among several mound builder cultures that critics believe inspired the Book of Mormon narrative. Meldrum believes the earlier Hopewell Indians were the Jaredites and the Adena were the Nephites.

the assertions made in the finished documentary concerning a non-native source for the complex cultures of Native America.

Meldrum's deeply flawed X lineage claims in the documentary were further exposed by Bolnick and Jennifer Raff when responding to further dubious claims that the X lineage data supported Solutrean theories of ancient trans-Atlantic migration to the Americas.¹⁷⁷ Supporters of the Solutrean hypothesis argue that similarities between Clovis and ancient European spear points is evidence of trans-Atlantic human migration into North America. The overwhelming majority of archaeologists believe any such similarities are coincidental.

The failure of LDS leaders to take a position on geography—while publicly promoting hemispheric beliefs and privately supporting Mesoamerican apologetics—has led directly to the emergence of Heartland creationism. Given the Church's recent call for 'independent voices' to step up to the defense of the Book of Mormon, and the scale of Meldrum's Heartland enterprise, it appears unlikely the Church will do anything to contain his excesses. Meldrum is merely tapping into a rich vein of young earth fundamentalism that permeates LDS thought.

¹⁷⁷ Jennifer A. Raff and Deborah A. Bolnick "Does Mitochondrial Haplogroup X Indicate Ancient Trans-Atlantic Migration to the Americas? A Critical Re-Evaluation" *PaleoAmerica* 1 (2015): 297-304.



9. Polynesians and the Book of Mormon

A. Lamanites in the Pacific

Polynesian members of the Church believe they are descendants of maritime Lehites who sailed into the Pacific from the Americas. The first written evidence of Latter-day Saints connecting the descendants of Lehi with Pacific Islanders appears in the diary of Louisa Pratt after she joined her husband, Addison, on his second mission to Polynesia in 1850.¹⁷⁸ While preaching to a group of female Polynesians on Tubuai Island, she informed them ‘the Nephites were the ancient fathers of the Tahitians’, a teaching with which ‘they appeared greatly interested’. Interestingly, Joseph Smith made no recorded statements related to this belief, and in Mormon scriptures we find no explicit statements in its support. Prophetic approval was eventually bestowed on the speculation in 1858 when Brigham Young declared, ‘Those islanders, and the natives of this country are of the House of Israel, of the seed of Abraham.’

The inhabitants of the western isles of the Pacific, however, did not share a strong physical resemblance with the mainland descendants of Lehi. Instead, they bore an unsettling resemblance to members of the African race, who according to revelation had inherited the harsh racial curse from God. In the early history of the Church, missionaries were kept away from Fiji, New Guinea, New Caledonia, and the Caroline and Solomon Islands because the people had clearly mixed with darker races. Consequently, Melanesia and

¹⁷⁸ Norman Douglas, “The Sons of Lehi and the Seed of Cain: Racial Myths in Mormon Scripture and Their Relevance to the Pacific Islands, *Journal of Religious History* 8 (1974): 90-104. Southerton *Losing a Lost Tribe* 47-49.

Micronesia had virtually no contact with Mormon missionaries for the next century (Table 5). Serious efforts to proselyte in Melanesia and Micronesia only began after missionaries consulted with anthropologists at the Fiji museum on Suva Island. Both groups were judged to be racially distinct from Negroes.¹⁷⁹

Table 5. Influence of LDS racial theology on proselyting in the Pacific.

LDS missionaries reached all major Polynesian groups by the end of the nineteenth century. Two small Polynesian groups, with small populations of approximately 2,000 each (Easter Island and Niue), were not visited until the twentieth century. Source: Southerton *Losing a Lost Tribe* 50, adapted from the *Ensign*, Jan. 1998.

Year	Commencement of LDS proselyting in Pacific nations
1840-60	French Polynesia (1843); Hawaii (1846); New Zealand (1854)
1860-80	Samoa (1863)
1880-1900	Tonga (1891); Cook Islands (1899)
1900-20	
1920-40	
1940-60	Niue (1952) , Fiji (1954); Guam (1955)
1960-80	New Caledonia (1961); Vanuatu (1973); Kiribati (1975); Fed. S. of Micronesia (1977); Marshall Islands (1977); Palau (1978); Papua New Guinea (1979); Easter Island (1980)
1980-2000	Solomon Islands (1994)

Mormon leaders continue to propagate the belief that Polynesians are descended from Book of Mormon peoples. Official statements to this effect go back as far as 1911 when Māori saints, who had noticed the Church's lack of success among Native Americans, asked Church leaders why Polynesians seemed to be more blessed and favored of the Lord. The First Presidency (Joseph F. Smith, Anthon H. Lund, and John Henry Smith) replied, saying:

The Lord ... directed their course away from this continent [America] to their island homes, that they might not be left to be preyed upon and destroyed by the more wicked part of the House of Israel whose descendants still roam upon this continent in a fallen and degraded state. (First Presidency, 1911)

During the November 1919 dedication of the Hawaii Temple President Heber J. Grant thanked God 'that thousands and tens of thousands of the descendants of Lehi, in this favored land, have come to a knowledge of the Gospel'. In the New Zealand Temple dedicatory prayer in April 1958

¹⁷⁹ Tamar Gordon *Inventing Mormon Identity in Tonga*, Ph.D. diss., University of California at Berkeley, 1988.

President David O. McKay expressed 'gratitude that to these fertile Islands Thou didst guide descendants of Father Lehi'. President Spencer W. Kimball believed it had been his 'privilege to carry the Gospel to the Lamanites from the Pacific Ocean to the Atlantic ... and in the islands from Hawaii to New Zealand'. He went so far as to propose the route the Lamanites took to Polynesia, first landing in Hawaii and then traveling south to colonize the islands of the South Seas.¹⁸⁰

General Conference has been a vehicle for sustaining belief in the idea that indigenous people in the Pacific and the Americas hold a Lehite birthright. In 1962 General Conference Apostle Mark E. Petersen outlined some of the supporting evidence.

As Latter-day Saints we have always believed that the Polynesians are descendants of Lehi and blood relatives of the American Indians, despite the contrary theories of other men. ...

The new knowledge which has been developed shows that the Polynesians without any reasonable doubt did come from America, that they are closely related to the American Indian in many respects, and that even their traditions and genealogies bear that out.

So pronounced is this feeling among the world scholars of today that one of them, Thor Heyerdahl, a widely known Norwegian anthropologist, who sailed the raft *Kon Tiki* from America to the Polynesian Islands, titled one of his books *American Indians in the Pacific*. It is a remarkable volume of great interest to Latter-day Saints.

With him are other writers who confirm and re-confirm the facts now being disclosed that there is every reason to believe that the Polynesians are directly related to the American Indians, that they came from American shores and sailed westward to their Pacific Islands, and that they took with them their customs, their food, and their religion, all of which have left a permanent mark upon Polynesia.

Pronounced as are these views establishing the relationship of Polynesians and American Indians, there are equally impressive data now available to disprove the theory that the Polynesians originated in the Orient and came eastward from Indonesia, Malaya, and nearby lands.¹⁸¹

B. Colonization history of the Pacific

The common ancestry of the Polynesians has been apparent to attentive Pacific visitors for centuries. Captain James Cook, who sailed his converted coal ship the *Endeavour* into the Pacific in 1769, made this observation at Easter Island: 'It is extraordinary that the same nation should have spread themselves over all the isles in this vast Ocean from New Zealand to this Island which is almost a fourth part of the circumference of the Globe.'¹⁸²

¹⁸⁰ Russell T. Clement, "Polynesian Origins: More Word on the Mormon Perspective," *Dialogue: A Journal of Mormon Thought* 13 (1980): 88-98; Southerton, *Losing a Lost Tribe*, 54.

¹⁸¹ Mark E. Petersen, "New Evidence for the Book of Mormon" *General Conference*, April 8th 1962.

¹⁸² Peter Taylor *The Atlas of Australian History*. Child and Associates, Frenchs Forest, New South Wales 1990.

A brief survey of Pacific history will help situate the recent genetics research on Polynesians within the context of the broader anthropological and archaeological knowledge. Humans entered the Pacific *much* earlier than the Americas. Archaeological and linguistic research leads scientists to believe that there were multiple waves of Pacific settlement. The first phase resulted in the settlement of Sahul—an ice age landmass comprising the islands of Australia, Tasmania and New Guinea—between 50,000 and 60,000 years ago. The founding colonizers of New Guinea were displaced by successive waves of people from neighboring islands to the west who spread to the adjacent Melanesian islands in the Bismarck Archipelago and the Northern Solomons by about 30,000 years ago.¹⁸³ The settlers of Micronesia are considered to have originated in Indonesia or the Philippines.¹⁸⁴ The earliest Polynesians probably began appearing in about 3000 BC, reaching islands in Vanuatu and Tonga by about 1000 BC. Linguistic ties between Pacific populations provides strong evidence for close genealogical links (Figure 19).

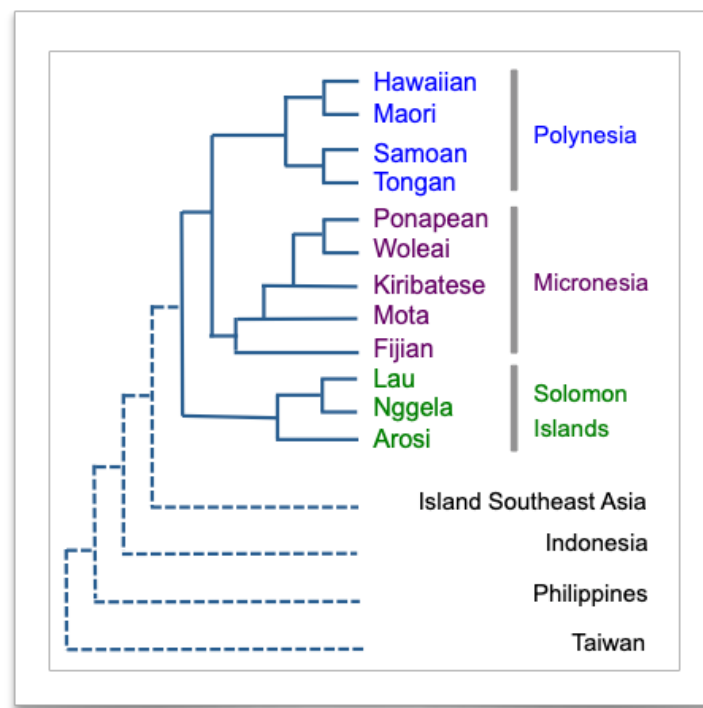


Figure 19. Relationships between Pacific languages. Polynesian languages belong to the Austronesian language family, the world's largest. Word data from Austronesian languages from Southeast Asia and Oceania have been used to construct tree-like arrangements of related languages. When closely related languages are positioned near each other,

¹⁸³ Richard Walter and Peter Sheppard *Archaeology of the Solomon Islands* Otago University Press, Dunedin, NZ, 2017. See also Southerton *Losing a Lost Tribe* 102-103.

¹⁸⁴ Peter S. Bellwood *Man's Conquest of the Pacific: The Prehistory of Southeast Asia and Oceania*. Oxford University, New York, 1979.

we see clear paths of language evolution in the Pacific trailing back through Southeast Asia towards Taiwan. Adapted from Gray and Jordan 2000.¹⁸⁵

The final phase of Pacific island settlement was rapid, taking about 2,000 years until complete, and is linked to the spread of distinctively styled Lapita pottery, which has been found all the way from coastal Papua New Guinea eastward to Samoa.¹⁸⁶ The Polynesians are descended from the Lapita people, who also developed exceptional skills of navigation and the outrigger, which brought stability to ocean-going canoes. Colonization of new islands was deliberate because women, plants, and animals were carried on the canoes. These voyages were probably never comfortable or dull, as domesticated pigs, dogs, and fowl accompanied these seafarers across the Pacific. Rats and lizards from Asia also found their way into the Pacific aboard Polynesian sailing craft.¹⁸⁷ While the precise origin of the Polynesian people was unknown, the preponderance of archaeological and linguistic evidence pointed to Taiwan for the primary source population. An alternative hypothesis, advanced by Thor Heyerdahl, and popular among Mormons, considers South America to be the ancestral home of the Polynesians.¹⁸⁸

Aotearoa (New Zealand) was the last major island in the Pacific to be settled. Māori oral tradition recounts epic voyages requiring great navigational skills. It is widely believed they set out from eastern Polynesia, sailing thousands of kilometers, in a series migrations beginning about 800 years ago. The size of the earliest colonies, and the range of skills, traditions and knowledge required for their success, indicate as many as 500 individuals made the voyage.¹⁸⁹ While the ancestors of the Māori almost certainly brought pigs and chickens with them, they soon found their new home had a plentiful supply of food resources including fish, seals, shellfish and large flightless birds. Mammals did not exist in Aotearoa, or throughout most of the Pacific, until the arrival of man. In the absence of mammalian predators, numerous bird species had evolved to fill a wide range of niches where flight was no longer an advantage. The most arresting to greet the first Māori were several species of Moa—the Polynesian word for chicken—which stood up to ten feet (three meters) tall and weighed up to 550 pounds (250 kilograms).

¹⁸⁵ Russell D. Gray and Fiona M. Jordan. "Language Trees Support the Express-Train Sequence of Austronesian Expansion," *Nature* 405 (2000):1052-55.

¹⁸⁶ Bellwood. *Man's Conquest of the Pacific*.

¹⁸⁷ Southerton *Losing a Lost Tribe* 103.

¹⁸⁸ Thor Heyerdahl. *Kon-Tiki: Across the Pacific by Raft*, Rand McNally, transl. F. H. Lyon. Chicago, 1950.

¹⁸⁹ McGlone, et al. "An Ecological Approach to the Polynesian Settlement of New Zealand," in *The Origins of the First New Zealanders*, ed. Douglas G. Sutton. (Auckland: Auckland University Press, 1994). See also Murray-McIntosh et al. "Testing Migration Patterns and Estimating Founding Population Size in Polynesia by Using Human MtDNA Sequences," *Proceedings of the National Academy of Sciences of the United States of America* 95 (1998): 9047-52 and Southerton *Losing a Lost Tribe* 105-107.

The Māori soon lost interest in their domesticated chickens and began harvesting the *moa*, which were slow moving and lacked any fear of humans. Within 400 years of the arrival of the Māori, all species of *moa* were extinct, and by the time Europeans arrived, the Māori were suffering from severe food shortages.¹⁹⁰

C. Polynesian DNA genealogies

Pacific DNA studies clearly link Polynesians with several Southeast Asian populations. In a 1995 study of 655 Polynesians, Sykes and others found that more than 98 percent carried mtDNA lineages clearly linked to Asia.¹⁹¹ The majority of Polynesians carry mtDNA belonging to the Asian 'B' lineage family. This lineage is also found in Native Americans; however, Polynesian B lineages carry characteristic mutations that clearly distinguish them from American B lineages. The discovery of the Polynesian lineage among indigenous tribes from Taiwan, lends considerable support to the theory, formulated largely on the basis of linguistic ties, that this is where the original Polynesian founding population came from. The astonishing seafaring skills of the Polynesians can be seen by the discovery of their mtDNA from Madagascar to Easter Island (Figure 20).



Figure 20. Global distribution of Polynesian mitochondrial DNA lineages.

Each population is represented by a pie showing the proportion of individuals with a Polynesian B lineage (blue). The occurrence of Polynesian lineages in Taiwan strongly suggests it is the ancestral homeland of the first Polynesians. The descendants of the original Polynesians mixed considerably with other

¹⁹⁰ The closest surviving relative of the *moa* is the flightless *kiwi*, an essentially defenseless bird whose evolution was due to the unique ecological history of Aotearoa.

¹⁹¹ Brian Sykes et al., "The Origins of the Polynesians: An Interpretation from Mitochondrial Lineage Analysis," *American Journal of Human Genetics* 57 (1995): 1463-75. See also Southerton, *Losing a Lost Tribe*, 107-10.

populations and spread as far as Madagascar. Source: Adapted from Southerton, *Losing a Lost Tribe* 109.

Interestingly, the Y-chromosome tells a slightly different story. The paternal ancestries of Polynesian males have a significant Melanesian heritage; between 23% and 42% for Samoans and Tongans respectively. However, as much as 50% of the paternal Polynesian gene pool has ties to East Asia.¹⁹² One particular haplogroup (O3a2c*), caught the eye of the researchers. Previously, seen at only trace levels in Mainland East Asians, it has been observed at high frequency in Polynesians from Tonga (54%) as well as Ami aborigines from Taiwan (37%). Together with the mtDNA research, these findings provide compelling evidence the original Polynesians emerged from indigenous populations in Taiwan.

Whole genome studies have shed even further light on the Polynesian story, recently confirming that the ancestors of the Polynesians included people from New Guinea and Island Southeast Asia. Polynesian genomes broadly contain genomic portions from the Philippines (40%), Sulawesi (12%), Malaysia (8%), New Guinea (7%), North Melanesia (10%) and East Asia (4%).¹⁹³ The most closely related populations to the Polynesians, however, were the Kankanaey from the lowlands of northwestern Luzon, Philippines and Taiwanese aborigines.

An intriguing piece of the Polynesian migration puzzle was revealed when scientists sequenced ancient DNA from the remains of 3,000-year-old individuals in Vanuatu and Tonga that were found in a Lapita cultural setting. In contrast to modern Polynesians, these ancient individuals carried virtually no DNA from Papua New Guinea.¹⁹⁴ This suggests that the earliest Polynesian migrants didn't stop long enough to mix with indigenous people in Melanesia. The appearance of Papuan DNA in modern Polynesians appears to have been the result of later migrations between Melanesia and Polynesia. Ancestry tract analysis suggests that this admixture commenced about 2,000 years ago, or about 1,000 years after the Lapita people reached Vanuatu and Tonga. The various phases of Pacific settlement culminating in the rapid colonization of most of the Pacific by the Polynesians are summarized in Figure 21.

¹⁹² Mirabal et al., "Increased Y-chromosome resolution of haplogroup O suggests genetic ties between the Ami aborigines of Taiwan and the Polynesian Islands of Samoa and Tonga" *Gene* 492 (2012): 339–348.

¹⁹³ Georgi Hudjashov et al., "Investigating the origins of eastern Polynesians using genome-wide data from the Leeward Society Isles," *Scientific Reports* 8 (2018):1823. The percentage contribution of each population to Polynesian genomes are estimates based on data in Figure 3 in Hudjashov et al., 2018.

¹⁹⁴ Pontus Skoglund et al., "Genomic insights into the peopling of the Southwest Pacific" *Nature* 538 (2016): 510-513.

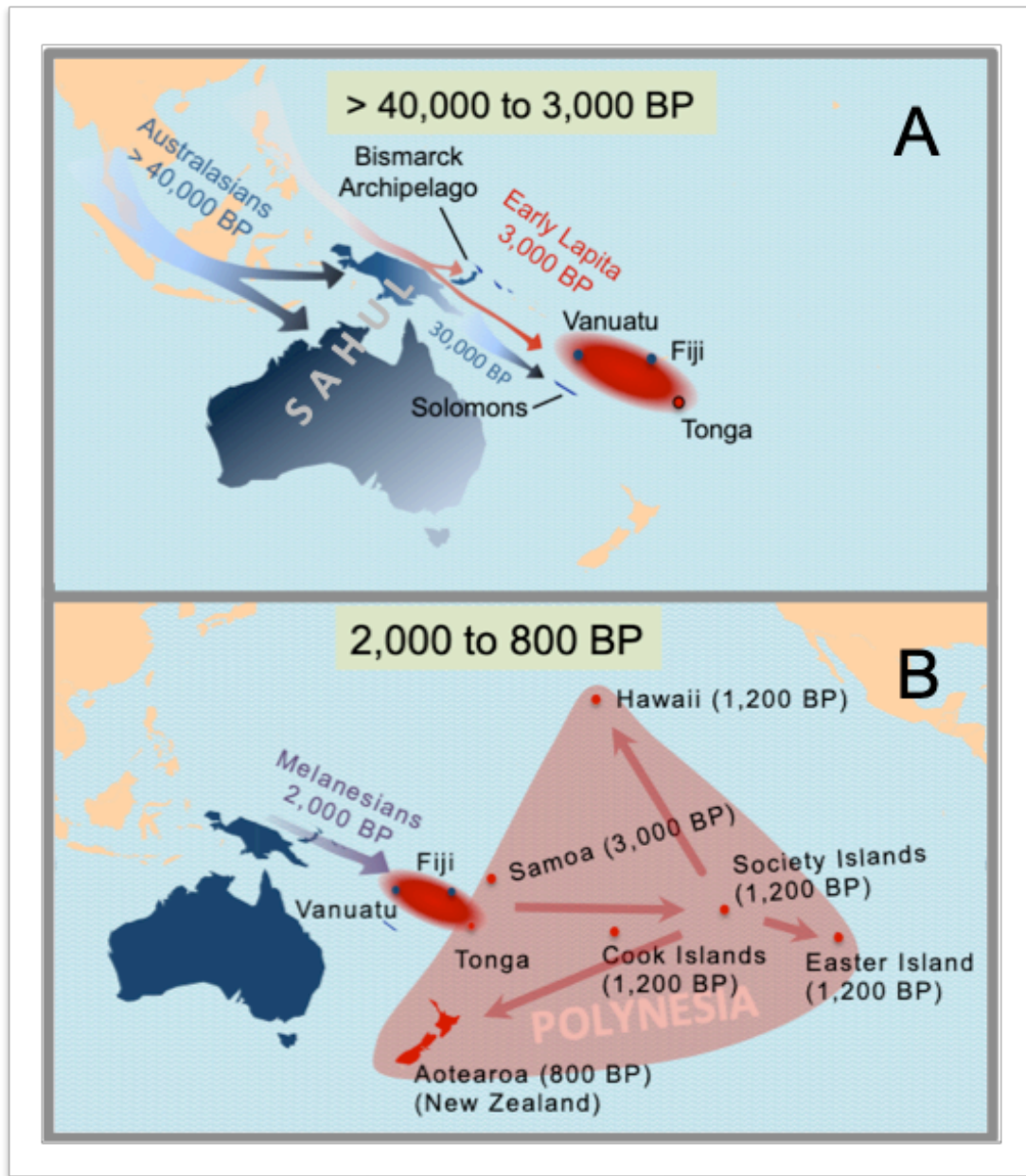


Figure 21. Phases of Pacific settlement

The Pacific was settled in numerous waves over the last 50,000 years. This includes four key phases: Plate A (1) Sahul colonized by Australasians from Southeast Asia > 40,000 BP (before present) and subsequently the Solomons were colonized around 30,000 BP. (2) The Lapita ancestors of the Polynesians reached Western Polynesia by 3,000 BP. Plate B (3) People with Papuan ancestry mix with the Polynesians around 2,000 BP. (4) The Polynesians rapidly colonize the remainder of the Pacific between 1,500 and 800 BP. Source: Bellwood 1979; Spriggs 1996¹⁹⁵; Skoglund et al. 2016.

¹⁹⁵ Matthew Spriggs "What is Southeast Asian about Lapita?" in *Prehistoric Mongoloid Dispersals*, eds. Takeru Akazawa and Emöke Szathmary. (Oxford: Oxford University Press, 1996).

D. Polynesian apologetics

In a notable quirk of history, John Sorenson was serving his LDS mission in the Cook Islands when Thor Heyerdahl's *Kon-Tiki* raft struck a reef in the Tuamotu Archipelago in 1947.¹⁹⁶ Sorenson even participated in amateur radio contact with Heyerdahl's raft as they sailed across the Pacific. This experience undoubtedly had a profound impact on Sorenson. He returned to BYU after his mission, where he wrote a masters thesis entitled 'Evidences of Culture Contacts between Polynesia and the Americas in Pre-Columbian Times,'¹⁹⁷ Like Heyerdahl, Sorenson became deeply converted to hyperdiffusionism; the belief that all human civilizations inevitably stem from culturally 'enlightened' civilizations located in the Old World.

Sorenson published two editorials in the *Journal of Book of Mormon Studies* in 2000, where he gave his first opinions about the findings of DNA research. In the first paper he revealed his early impressions of the Polynesian mtDNA research of Rebecca Cann's group at the University of Hawaii. He was so impressed he claimed 'genetic ties linking the two areas is now hard enough to support a picture of substantial historical connections between Polynesian and American groups.'¹⁹⁸ Sorenson's information, however, came largely from a popularized account of Cann's research published in the *Hawaii Magazine*.¹⁹⁹ Sorenson may not have seen Cann's other published work at the time, which had revealed a virtually exclusive genetic bond between Polynesia and the Far East.²⁰⁰

Within months Sorenson's enthusiasm for DNA research had evaporated. He criticized 'enthusiasts without adequate critical acumen' in a distasteful attack on Cann, whose Polynesian research he had previously touted. It appears she had struck a sensitive doctrinal nerve. In her ground-breaking study of the mtDNA of 147 women from four continents, Cann concluded that women can claim a common mother who lived in sub-Saharan Africa about 200,000 years ago.²⁰¹ A weakness in Cann's work—pointed out by other scientists and retold by Sorenson—was that it focused on a portion of the mtDNA that mutates at too high a rate to allow accurate estimates of age. Sorenson went on to predict the usefulness of DNA research:

¹⁹⁶ See "An interview with John L. Sorenson. *Journal of Book of Mormon Studies* 11 (2002): 80-85.

¹⁹⁷ John L. Sorenson, "Evidences of Culture Contacts between Polynesia and the Americas in Pre-Columbian Times," (master's thesis, Brigham Young University, 1952).

¹⁹⁸ John L. Sorenson "New Light: Genetics Indicates that Polynesians Were Connected to Ancient America," *Journal of Book of Mormon Studies* 9 (2000): 1.

¹⁹⁹ The Hawaii Magazine report was based on the research of Koji J. Lum et al., "Polynesian Mitochondrial DNAs Reveal Three Deep Maternal Lineage Clusters," *Human Biology* 66 (1994): 567-90.

²⁰⁰ Koji J. Lum, and Rebecca L. Cann. "MtDNA and Language Support a Common Origin of Micronesians and Polynesians in Island Southeast Asia," *American Journal of Physical Anthropology* 105 (1998): 109-19; Koji J. Lum et al., "Mitochondrial and Nuclear Genetic Relationships among Pacific Island and Asian Populations," *American Journal of Human Genetics* 63 (1998): 613-24.

²⁰¹ Rebecca L. Cann et al., "Mitochondrial DNA and Human Evolution," *Nature* 325 (1987): 31-6.

The new toy in human biology and anthropology is DNA analysis. Despite cautions from the best scientists about the limits the new findings have for interpreting human history, some enthusiasts without adequate critical acumen claim too much for DNA study. ... In general, we have seen, the advent of new tools or techniques in a scientific field leads to overexpectation. That has certainly been so with DNA study.²⁰²

After Sorenson's brief assessment of the new science, Latter-day Saint apologetics fell silent about the implications of population genetics for Polynesians. It appears the apologists were preoccupied with dealing with DNA challenges on the mainland. Eventually, Keith Thompson, a law professor at the University of Notre Dame in Sydney, stepped into the apologetic vacuum. In 2014 Thompson issued a call to Pacific anthropologists, who apparently read the *Interpreter*, 'to write the story of the origin of mankind in the Pacific a bit larger and perhaps to look scientifically for additional explanations'.²⁰³ His hope was 'that the tools of modern science and technology will provide more satisfying answers to these questions than have come from the study of religion and theology'. From his self-acknowledged 'armchair' perspective, Thompson had formed the mistaken view that contemporary anthropologists believe the enormous diversity of people in the Pacific arose relatively recently.

To have a meaningful understanding of who the Polynesians are and where they came from, anthropologically speaking, we need to search out more of the story and open our minds to the nuances that do and must exist in the story of the colonization of the Pacific in pre-European times. Understanding a little about evolution, I find [it] very difficult to accept that my native friends in Tarawa, Majuro, Honiara, Lae, Port Vila, Noumea, Salelologa, Vavau, Rotuma, Niue, Aitutaki, and Moorea all come from precisely the same gene stock originating fewer than 5,000 years ago because they all look so different.²⁰⁴

The island locations of Thompson's friends are scattered across the Pacific and include Melanesia (New Guinea, Solomon Islands, New Caledonia, Vanuatu and Fiji); Micronesia (Marshall Islands and Kiribati) and Polynesia (Cook Islands, French Polynesia, Tonga, Samoa and Niue). Modern anthropologists *do not* believe these diverse people descend from common ancestors who lived 'fewer than 5,000 year ago'. As outlined previously, Australia and New Guinea have been inhabited for about 50,000 years. Prior to the Polynesians reaching Papua New Guinea about 3,000 year ago, the ancestors of each group had been separated for at least 60,000 years. Waves of Asian migration from Philippines, Malaysia and Indonesia also passed

²⁰² John L. Sorenson "New Light: The Problematic Role of DNA Testing in Unraveling Human History," *Journal of Book of Mormon Studies* 9 (2000):2.

²⁰³ A. Keith Thompson, "Fashion or Proof? A Challenge for Pacific Anthropology" *Interpreter: A Journal of Latter-day Saint Faith and Scholarship* 8 (2014): 205-232.

²⁰⁴ Thompson, "Fashion or Proof?" 207-208.

through New Guinea into the western Pacific during the last 30,000 years. It is widely agreed by Pacific archaeologists that these extraordinarily diverse and ancient origins gave rise to the incredible human diversity seen throughout the Pacific.

Thompson believes scholars shouldn't ignore the 'outstanding Heyerdahl evidence' summarized by Kerry Howe:

Heyerdahl offered the following broad clusters of evidence for his theory. The Kon-Tiki expedition itself proved how it was done. The winds and currents drove sailing vessels relentlessly westwards. There were his claims of similarities between eastern Polynesian words and those of South America. He also claimed that "pure" eastern Polynesian blood groups were similar to those of North and South America. He amassed a whole range of archaeological evidence supposedly showing cultural links with both North and South America—the most notable being the Easter Island stonework. He also argued that certain eastern Polynesian plants, including the sweet potato, originated in South America.

While the public adored Heyerdahl, the scholarly community largely ignored him. Few academics have bothered to spend their time trying to refute his mass of claims and his voluminous evidence. For those aware of the issues, he was so wrong as to be not worth taking too seriously.²⁰⁵

Thompson provides a list of over 20 claims of evidence made by Heyerdahl, who also suffered from parallelomania. That figure is now dwarfed by his acolyte Sorenson who, in plant species alone, has assembled a list of up to 170 taxa for which there is 'decisive evidence' that they crossed all or part of the ocean to or from the Americas before 1500 AD.²⁰⁶ However, as they have with Heyerdahl, the scientific community largely ignores Sorenson's claims because the evidence is not as decisive as he thinks.

Theories of transoceanic diffusion, of course, have been the scourge of anthropological archaeology for nearly half a century—largely for good reason. The "literature" of transoceanic contact consists primarily of a profuse amalgam of wild, ill-supported theories mostly proposed by self-trained archaeologists...Most archaeologists have shunned these discussions because they often incorporate archaeological information in questionable ways and, even more commonly, border on the absurd.²⁰⁷

E. Staples and stowaways

Despite diffusionist claims, further light *has* been shed on the ancestral movements of Polynesians by focusing on the animals and plants that accompanied them on their voyages. Rats were common passengers aboard prehistoric Polynesian canoes, either as food or as stowaways. The Pacific or

²⁰⁵ Kerry R. Howe, *The Quest for Origins* (Penguin Books: Auckland, 2003).

²⁰⁶ Sorenson and Johannessen, *World Trade and Biological Exchanges Before 1492*.

²⁰⁷ Terry Jones and Kathryn Klar "Diffusionism Reconsidered: Linguistic and Archaeological Evidence for Prehistoric Polynesian Contact with Southern California," *American Antiquity* 70 (2005): 457-484.

Polynesian rat (*Rattus exulans*) is found throughout remote Oceania and as far into Southeast Asia as the Andaman Islands off the west coast of Thailand.²⁰⁸ MtDNA analyses of ancient and modern chicken remains has revealed the progenitors of Polynesian chickens lived in Micronesia and the Philippines. No reliable evidence has been found for their dispersal to pre-Columbian South America.²⁰⁹ Likewise, mtDNA studies of 781 modern and ancient domestic pigs (*Sus scrofa*) have revealed evidence of human-mediated movement through island Southeast Asia into Oceania. One of these dispersals was unequivocally associated with early Polynesian migrations.²¹⁰

Another anomaly in the controversy over Book of Mormon geography, upon which DNA has recently shed light, concerns the sweet potato (*Ipomea batatas*). Heyerdahl, Sorenson and others have invoked its presence in the Pacific as some of the strongest evidence of a western migration out of the Americas. Non-Mormon scholars previously thought the sweet potato most likely entered the Pacific via a return voyage of Polynesians who reached the Americas; a more credible view given the absence of evidence of other aspects of American or Israelite culture or genes.²¹¹ However, recent molecular evidence tells another story. Polynesian and South American sweet potatoes have been found to be distantly related; sharing a common ancestor about 100,000 years ago. This strongly suggests the sweet potato entered Polynesia from South America in pre-human times, most likely by seed dispersal within floating capsules, since the seeds sink.²¹²

Interestingly, there is molecular evidence American Indians may have just beaten Europeans into the Pacific. Genomic studies on the Rapanui, natives of Rapa Nui (Easter Island), revealed European admixture of 16% and a Native American contribution of 8%.²¹³ Ancestry tract analysis on the genomes of eight unrelated Rapanui, suggested the Native American admixture arrived from 1280–1495 AD while European admixture occurred from 1850–1895 AD. Despite this, Native Americans made little to no impact on Pacific societies.

²⁰⁸ Elizabeth Matisoo-Smith et al., "Patterns of Prehistoric Human Mobility in Polynesia Indicated by MtDNA from the Pacific Rat," *Proceedings of the National Academy of Sciences of the USA* 95 (1998): 15145-50.

²⁰⁹ Vicki A. Thomson et al., "Using ancient DNA to study the origins and dispersal of ancestral Polynesian chickens across the Pacific" *Proceedings of the National Academy of Sciences of the U S A*. 111 (2014): 4826–4831.

²¹⁰ Greger Larson et al., "Phylogeny and Ancient DNA of *Sus* Provides Insights into Neolithic Expansion in Island Southeast Asia and Oceania" *Proceedings of the National Academy of Sciences USA* 104 (2007): 4834-4839.

²¹¹ Southerton *Losing a Lost Tribe* 104-105, 113-114.

²¹² Pablo Muñoz-Rodríguez et al., "Reconciling Conflicting Phylogenies in the Origin of Sweet Potato and Dispersal to Polynesia". *Current Biology* 28 (2018): 1246-1256.

²¹³ Moreno-Mayar et al., "Genome-wide Ancestry Patterns in Rapanui Suggest Pre-European Admixture with Native Americans" *Current Biology* 24 (2014): 2518–2525. See also Erik Thorsby "The Polynesian Gene Pool: An Early Contribution by Amerindians to Easter Island," *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 367 (2012): 812–819.

There is no evidence they brought New World staples including maize, beans, squashes or guinea pigs, nor Amerindian languages.

Given the outstanding nautical skills of Polynesian sailors, it is not unreasonable to believe they could have sailed all the way to the Americas. There is archaeological evidence that Polynesians reached southern California. In about 400-800 AD the Chumashan and Gabrielino tribes suddenly began using elaborate, composite-style, bone fishhooks and sewn-plank canoes in the Santa Barbara channel which separates California from the Channel Islands. Both the fishhooks and the canoes are remarkably similar to those used by Polynesians at the time they reached Hawaii in about 800 AD. Three Polynesian words referring to boats have been observed in the languages of these two tribes. These findings suggest that soon after colonizing Hawaii, Polynesians completed a voyage to mainland North America.²¹⁴ It appears quite probable that similar return voyages may have brought Native Americans to Rapa Nui, just prior to the arrival of Europeans.

²¹⁴ Jones and Klar "Diffusionism Reconsidered"



10. Official Church responses

The Church's first response to the population genetics, which passed unannounced, was a one-word change to the introduction to the Book of Mormon. Prior to 2006 the introduction—which had been added by the late LDS apostle Bruce R. McConkie in 1981—included the statement: 'After thousands of years, all were destroyed except the Lamanites, and they are the principal ancestors of the American Indians.' The Lamanites were, in 2006, quietly relegated to being 'among' the ancestors of the American Indians. The Church's website soon afterwards noted 'Nothing in the Book of Mormon precludes migration into the Americas by peoples of Asiatic origin. The scientific issues relating to DNA, however, are numerous and complex.'²¹⁵

A. The 'Book of Mormon and DNA' essay

In its 2014 DNA essay the LDS Church directly responds to the population genetics. Principally authored by Ugo Perego, the essay admits the majority of Native Americans carry DNA that appears to have come from East Asia and that 'nothing is known about the DNA of Book of Mormon peoples'. Like the copious apologetics that preceded it, the essay is preoccupied with the limitations of the technology (bottleneck and founder effect, genetic drift, extinction, dilution, etc.) that make it difficult to detect the DNA of Lehi, which the essay suggests, may be atypical of the Near East. This last claim appears disingenuous, given the Book of Mormon describes Lehi as Jewish, 'a descendant of Manasseh, who was the son of Joseph who was sold into Egypt' (Alma 10:3).

²¹⁵ See Salt Lake Tribune [archive](#)

The DNA essay is vague about how long Native Americans have been living in the New World, which could confuse some readers. While it acknowledges the predominantly Asian ancestry of American Indians, it implies this fact may change by immediately referencing a 2013 study by [Maanasa Raghaven](#) that suggests one-third of their DNA may be derived from Europe or West Asia.²¹⁶ The study in question, an analysis of 24,000-year-old bones from Siberia (MA-1), was probing the genetic makeup of the original founders who left Siberia over 20,000 years ago. It is not relevant to migrations that may have occurred in the last 4,000 years. It is highly likely Raghaven's paper would have passed unnoticed by Mormon apologists had it not been for a popularized *National Geographic* article on the research with the following provocative title:

"Great Surprise"—Native Americans Have West Eurasian Origins

Nearly one-third of Native American genes come from west Eurasian people linked to the *Middle East* and Europe, rather than entirely from East Asians as previously thought, according to a newly sequenced genome. (italics added)

Raghaven's research does *not* suggest a recent infusion of Middle Eastern DNA into Native American populations. It is a well established fact that essentially all Native Americans are descended from Asian ancestors. The research on the ancient Siberian is fascinating because it sheds more light on the mixed ancestry of the very First Americans, who arrived in the New World over 16,000 years ago. It is misleading to suggest that this scientific consensus could be overturned on the basis of research on an individual who lived 20,000 years *before* Israel existed.

The 'great surprise' in Raghaven's research was the discovery that Western Eurasians were living so far east during the peak of the last Ice Age. The discovery also potentially explains the origin of the X2a mtDNA lineage in Native Americans, the only founding lineage found outside of Asia. It suggests any deep ancestral ties within Eurasia are predominantly with northern Western Europe *rather* than the Middle East (Figure 22). The study does not support a far more recent link between Native Americans and the Middle East. The failure of the essay to honestly acknowledge Native Americans entered the New World over 15,000 years ago will leave some readers believing these alleged infusions of Middle Eastern DNA could have occurred in Book of Mormon times.

²¹⁶ Maanasa Raghaven et al., "Upper Palaeolithic Siberian genome reveals dual ancestry of Native Americans." *Nature* 505:(2014) 87–91

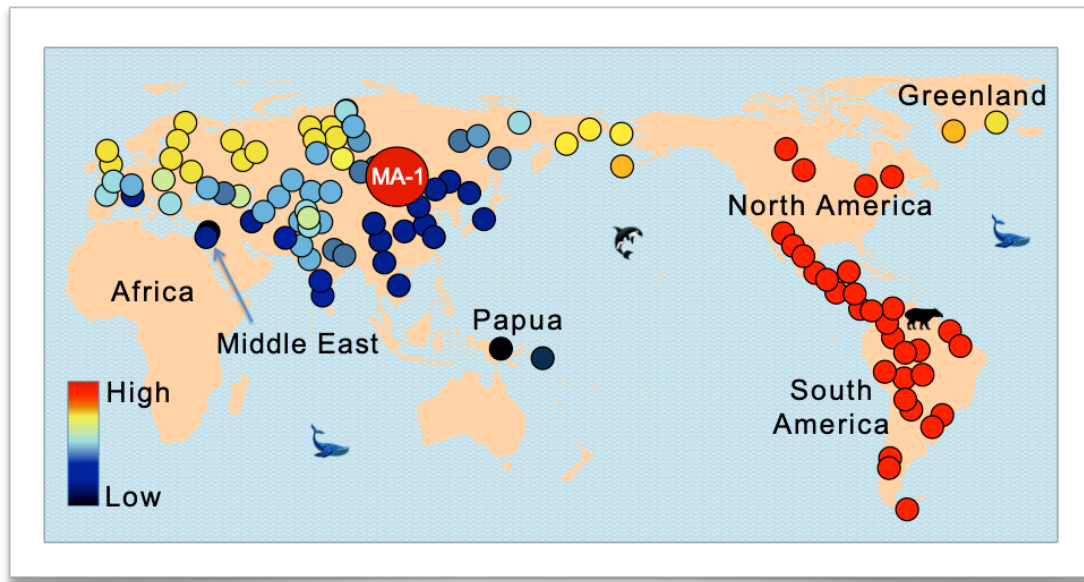


Figure 22. Detection of Siberian DNA in Northern Europe and the Americas.

The map shows the relationship between the genome of a 24,000-year-old Siberian (MA-1) and contemporary individuals from numerous worldwide non-African populations. The circles represent the location of the individuals studied. The graded 'heat' key (on the left) illustrates low (black) through to high (red) relatedness with the DNA of the MA-1 individual (large red circle). Source: Adapted from Figure 1c in Raghaven et al. 2014.

To illustrate the fact that scientists don't 'rule out the possibility of additional small-scale migrations to the Americas', the DNA essay cites a 2013 study of a 4,000-year-old Palaeo-Eskimo genome from Greenland, which revealed evidence for an Eskimo migration from Siberia into the New World about 5,500 years ago.²¹⁷ This DNA finding was not surprising to scientists, since the Bering Strait has never been a complete barrier to Eskimo cross migration between Siberia and North America. Indigenous groups close to the Bering Strait speak related languages, which is strongly indicative of recent shared ancestry. This has been thoroughly confirmed by more recent studies of 34 ancient northeastern Siberians and 48 ancient Eskimos.²¹⁸

According to the essay traces of European and African mtDNA (1%) found in numerous native populations across the New World may have arrived prior to Columbus. This appears very unlikely given that these lineages have not been identified in ancient remains that predate the arrival of Columbus. The most compelling evidence that these lineages are not pre-Columbian comes from the large Latin American genome study discussed in detail in Chapter 7B.

²¹⁷ Morten Rasmussen et al., "Ancient Human Genome Sequence of an Extinct Palaeo-Eskimo," *Nature*, Feb. 463 (2010): 757–762.

²¹⁸ Siberians: Martin Sikora et al., "The population history of northeastern Siberia since the Pleistocene." *Nature* 570: (2019) 182–188; Eskimos: Pavel Flegontov et al., "Palaeo-Eskimo genetic ancestry and the peopling of Chukotka and North America." *Nature* 570: (2019) 236–240.

Anthropologists Thomas Murphy and Angelo Baca found the LDS Church's essay insufficiently addresses both science and culture.

DNA is problematic for Mormons because it calls into question a presumed authority to tell Native American stories. It challenges a pretentious claim to be the Latter-day arbiters of Native history. For many Mormons it has taken genetic science to begin to dislodge this colonial mindset. There is a spark of a changing approach in the essay with the acknowledgement that 'the primary purpose of the Book of Mormon is more spiritual than historical.' What if the essay writers had explored that concept at length rather than offering a primer on population genetics? Discussing the lack of an historical foundation is the more difficult conversation. Rather than letting the Book of Mormon stand as scripture but not history, the essay uses uncertainty inherent in the scientific process to try to create wiggle room. The fact of the matter remains that the science provides no affirmative support from DNA for any of the Book of Mormon peoples. The essay writers do not come to terms with sheer absence of evidence and, instead, they try to salvage a sliver of authority for Mormons to continue speaking authoritatively about Native America.²¹⁹

The DNA essay makes no mention of geography; instead the Church chose to devote a single brief Gospel Topic Essay to [Book of Mormon geography](#). The geography essay, released in 2019, notes Joseph Smith believed there was evidence of Book of Mormon civilizations in North and Central America, but emphasized 'the Church's only position is that the events the Book of Mormon describes took place in the ancient Americas'. The DNA and geography essays are difficult to find on the Church website and there was virtually no publicity accompanying their release. Consequently most Church members have not read them and continue to embrace hemispheric views, including many retaining strong beliefs about their Lamanite ancestry.

B. Managing apostasy: discrediting the messengers

An interesting feature of the debate surrounding population genetics and the historicity of the Book of Mormon is that it has frequently extended far beyond normal scholarly exchanges. Responses from apologists and the Church have frequently descended to attacking the intellectual credibility and even the character and personal morality of the two most vocal critics, Murphy and Southerton. These interventions, while understandable for a religious institution, appear designed to render the critics untrustworthy or unreliable sources of knowledge.

On the 27th November 2002, Mathew Latimer, the President of the Lynnwood Washington Stake of the LDS Church set in motion a disciplinary

²¹⁹ Thomas W Murphy and Angelo Baca, "Science, Settlers, and Scripture: Native Perspectives on DNA and the Book of Mormon," in Mathew Harris and Newell Bringhurst, eds., *The Mormon Church and its Gospel Topics Essays: The Scholarly Community Responds* (Salt Lake City, UT: Signature Books, forthcoming).

process to consider excommunicating Thomas Murphy for apostasy. Latimer was troubled by Murphy's publication of 'Lamanite Genesis, Genealogy, and Genetics' in the anthology *American Apocrypha* in which he concludes that the Book of Mormon was a nineteenth century document.²²⁰ Ten days later, apparently in response to considerable media interest and support from Murphy's students, Mormons and ex-Mormons at candlelight vigils, disciplinary proceedings were postponed then eventually halted.²²¹ Allen Wyatt thinks Murphy engaged in 'the strategic and purposeful manipulation of the media to paint a false picture of an embattled scholar being persecuted in his quest for truth by a repressive institution.'²²² His cooperation with ex-Mormon 'activists' and fundamentalist Christians is seen as a betrayal of the Church: the 'moral equivalent of a Jewish person aiding and abetting anti-Semitic groups.'²²³

Murphy has been criticized by apologists for not undertaking primary research, for not producing peer-reviewed papers, and for having 'little or no scientific background'. He countered:

In addition to training in biological anthropology for my B.A., M.A., and Ph.D. in anthropology, I have participated in ethnobiological research, funded by the National Science Foundation, in a Zapotec community in southern Mexico.²²⁴

Interestingly, the same criticism is not applied to apologists, like Mathew Roper, Daniel Peterson, Blake Ostler, Allen Wyatt, Michael Ash, John Tvedtnes, John Sorenson, Jeff Lindsay and Michael Quinn, all of whom have no genetics training, but have frequently commented on genetics in FARMS and FairMormon publications.

Further questionable personal attacks on Murphy came in the form of an email from John Tvedtnes to Murphy's Dean, Richard Asher, at Edmonds Community College, Washington. In the email Tvedtnes claimed that Murphy 'was not qualified to lecture on either genetics or the Book of Mormon.' Tvedtnes made serious allegations:

Murphy is unacquainted with the vast array of scholarly publications on the Book of Mormon, both pro and con, and has been fed the material he uses by an avowedly anti-Mormon writer who is not in the academic community and hence wants Murphy, who is an academic, to disseminate his material.²²⁵

²²⁰ Thomas Murphy, *Imagining Lamanites: Native Americans and the Book of Mormon* PhD Thesis, University of Washington. 262 -264. Latimer was most concerned about conclusions Murphy reached in Thomas Murphy, 'Lamanite Genesis, Genealogy, and Genetics' 68.

²²¹ Murphy, *Imagining Lamanites* 275.

²²² Wyatt, "Motivation, Behavior, and Dissension," 1.

²²³ Wyatt, "Motivation, Behavior, and Dissension," 3.

²²⁴ Murphy, "Simply Implausible," 130 n84.

²²⁵ Murphy, "Simply Implausible," 130 n84.

The first claim is clearly untrue. Murphy is very familiar with, and has cited, a wide range of LDS and non-LDS scholarship in the course of his research which he has published in peer-reviewed journals such as *Ethnohistory*, *Journal for Scientific Study of Religion*, *Journal of Mormon History* and *Dialogue: A Journal of Mormon Thought*. Instead of evaluating Murphy's claims, apologists have typically questioned his personal motives, interpretation of Book of Mormon passages, and his over-confidence in population studies.²²⁶ In response to his email, Asher invited Tvedtnes, or another representative of FARMS, to visit the college and present their point of view. The invitation went unanswered. Despite considerable notoriety and the sustained attention of LDS apologists, to this day Murphy defiantly remains a member of the LDS Church. Southerton, however, encountered a very different reaction.

Southerton was a serving bishop in Brisbane in 1998 when he encountered population genetics research that challenged his faith. In his thirty years of membership, serving in numerous senior ward and stake leadership roles, he had never encountered LDS apologetics or LG opinions. He immediately resigned from his calling and has since been active in the online ex-Mormon community and given public presentations on the DNA research. In 2004 he published *Losing a Lost Tribe*, which challenges the historicity of the Book of Mormon based on the population genetics. Many Book of Mormon critics, including Murphy, have drawn upon his meta-analysis and public presentations.

In August 2005, seven years after he stopped attending church, Southerton was invited by President John Larkin, of the Canberra Australia Stake, to attend a disciplinary council to face the charge of adultery. One consequence of Southerton's faith crisis had been a brief separation from his wife Jane, during which he had entered a relationship with an ex-Mormon woman similarly estranged from her husband. By the time of the disciplinary council, both couples had been reconciled for over a year and Jane even spoke in her husband's defense. Southerton was eventually excommunicated for a lesser charge of 'conduct unbecoming a Church member' because he had refused to discuss his personal life with fifteen strangers.²²⁷ Following the meeting Jane arranged for the family's names to be removed from the Church's records.

The conduct and outcome of the disciplinary council raises serious questions about its motivations. It is very unusual for the Church to pursue immorality charges against someone who has not attended an LDS Church in seven years. The fact that both impacted couples had reconciled makes it even more perplexing. It suggests the proceedings and outcome was a *fait accompli*, given Southerton's highly public apostasy over five years and the publication of his book the previous year. Southerton asked the Council,

²²⁶ Peterson, "Of 'Galileo Events,' xii-xvii.

²²⁷ Letter, Office of the Stake President (The Church of Jesus Christ of LDS) to Simon Southerton, 12 August 2005.

whether alleged misconduct two years earlier between separated and consenting adults was more serious than public apostasy over a five-year period. After all, there was clear evidence that his relationship with his wife was healing but no signs of his 'apostasy' abating. President Larkin defended the council's actions, implying the charge they were pursuing was more important. His claim, however, is not consistent with the LDS General Handbook of Instructions, which says that a disciplinary council *may* be held for sexual transgression but *must* be held for apostasy. Southerton was surprised, on the basis of his decade in Mormon bishoprics, to find the authorities prosecuting an individual with no active relationship with the Church and in apparent violation of church policy.

There were further unfortunate consequences of Southerton's attempts to reconcile his faith. Years earlier, in response to his resignation as bishop, his Area President, Vaughn J. Featherstone, had encouraged him to contact 'world-renowned expert' Scott Woodward at BYU. In 1998 his Area President wrote:

We hope that this will help you to put aside your feelings regarding what other "experts" have stated. It is spiritual immaturity to cast aside all you hold precious and dear because of what you assume are proofs contrary to the Book of Mormon. ... We can promise you that the answers to your question is not in the findings of DNA experts or in the great scientists of the world. The answer to your concerns is in the Book of Mormon. Go back and re-read it from cover to cover, praying and pondering over every page. It does not matter what the experts say, the Book of Mormon is true.²²⁸

Southerton and Woodward corresponded by email for a brief period in 1998. In late 1998, upon request and in good faith, Southerton provided Elder Featherstone with a copy of his email correspondence with Woodward. This apparently led to President Gordon B. Hinckley meeting with Woodward in 2003, after which he lost his BYU professorship; his research group was closed, and he moved off campus to the Sorenson Molecular Genealogy Foundation (SMGF) in Salt Lake City.²²⁹ On the FairMormon [website](#), Ugo Perego currently claims 'Woodward's emails from 1998 were eventually "edited" by Southerton and forwarded to LDS Church leaders in Utah, with the objective of hurting Woodward's teaching position at BYU. This event greatly upset Woodward'.²³⁰ Southerton wholly rejects Perego's allegations. It is likely Woodward's own words would have been sufficient to alarm church leaders. President Hinckley was probably disturbed to learn Woodward had tested over 5000 native Peruvians and found over 98% had Asian DNA. The

²²⁸ Letter, Office of the Australia/New Zealand Presidency (The Church of Jesus Christ of LDS) to Simon Southerton, 15 October 1998.

²²⁹ The Sorenson Molecular Genealogy Foundation was funded by LDS philanthropist James LeVoy Sorenson. James Sorenson is not closely related to John Sorenson.

²³⁰ Ugo Perego "Current Biology, SMGF, and Lamanites" FairMormon website February 6, 2009.

prophet may have been equally troubled to learn that Woodward had resolved most of his questions by accepting the radical theories of LG apologists.

Ryan Parr published an apologetic response to Southerton's *Losing a Lost Tribe* in a 2005 issue of the *FARMS Review*.²³¹ The editor, Louis Midgley, introduced Parr's review under the heading 'Secular Anti-Mormon Mockery Exposed.' According to Midgley, Parr's review, like most LDS apologetics, provides:

more richly detailed, carefully written, fully documented accounts of the crucial texts and events in the Mormon past...The growth of an obviously faithful and sophisticated literature on Joseph Smith and the Book of Mormon, much of it published in this Review or elsewhere under the FARMS imprint, has led to considerable dissonance among dissidents, cultural Mormons, and anti-Mormon zealots. Critics respond to this scholarly literature with vilification, animosity, and acrimony, with slurs, name-calling, and unseemly personal attacks.²³²

In an attempt to downplay the failure to detect Lehi's DNA, Parr illustrates naturally occurring mtDNA extinction in minnows, a small fish from the Sonora Desert of Northwestern Mexico. The hybrid offspring from crosses between males and females of different species of minnow are always female. Parr fails to provide a rational link between the research on hybrid fish and human mitochondrial genetics. Besides, extinction of male mtDNA occurs *every* generation in humans without limiting its usefulness for DNA genealogy. Much of Parr's energy is apparently consumed with 'vilification, animosity, and acrimony, with slurs, name-calling, and unseemly personal attacks':

Such practical wisdom eludes Southerton and confounds any ability to reason, think, and ponder through what he sees as inconsistencies. This drives a misunderstanding of the nature and character of the Book of Mormon and yields an unwillingness to acknowledge the limitations of the science upon which he relies so heavily. In addition, Southerton seems unfamiliar with the Book of Mormon. The second sentence of his preface proclaims that the principal groups and populations of the Book of Mormon "were practicing Christians centuries before the birth of Christ"....These myopias are astonishing for one claiming special insider knowledge not only as a former long-time member of the Church of Jesus Christ, but also as a scientist.

Parr's astonishment at Southerton's 'myopia' is bewildering given what the Book of Mormon explicitly states. Consider these words from Nephi over *five centuries* before Christ's birth:

²³¹ Ryan Parr, "Missing the Boat to Ancient America...Just Plain Missing the Boat," *The FARMS Review* 17 (2005): 83-106. A more detailed response to Ryan Parr's paper can be found at this link. <http://simonsoutherton.blogspot.com/search?q=ryan+parr>

²³² Louis Midgley "The First Steps," Editors introduction, *FARMS Review* 17 (2005) xvii.

... we talk of Christ, we rejoice in Christ, we preach of Christ, we prophesy of Christ, and we write according to our prophecies, that our children may know to what source they may look for a remission of their sins (2 Ne. 25:26).

... if ye shall follow the Son ... repenting of your sins, witnessing unto the Father that ye are willing to take upon you the name of Christ, by baptism—yea, by following your Lord and your Savior down into the water, ... then shall ye receive the Holy Ghost ... (2 Ne. 31:13).²³³

The formal and apologetic responses to Murphy and Southerton are primarily to protect Latter-day Saints. Murphy and Southerton will now be perceived as unreliable sources of knowledge and cannot be trusted. Why would Latter-day Saints read or take seriously the claims of those on the borders of apostasy or excommunicated for ‘adultery’ and an unwillingness to repent?²³⁴

The responses of the secular media to Murphy and Southerton were, however, strikingly different.²³⁵ Both critics have been willing to talk to the media when contacted, and journalists have generally acknowledged the legitimacy of their claims. This is not surprising given that—like most Latter-day Saints—journalists are alert to the widespread beliefs about Lamanite origins and largely unaware of LG apologetics. The Church, however, was often portrayed as a monolithic and reactionary organization perpetuating outdated claims in the face of ‘incontrovertible’ scientific evidence. An Australian newspaper reporting on Southerton’s excommunication alluded to the scandalous early history of the Church to illustrate the hypocrisy of the Church’s actions against him. The article concluded with the following

²³³ See also Jacob 1:7 (544 BC): “Wherefore we labored diligently among our people, that we might persuade them to come unto Christ”; Mosiah 4:3; 5:7-8 (124 BC): People covenanted to be called the “children of Christ” in response to King Benjamin’s address. Mosiah 18:13-17 (147 BC): Alma baptizes numerous people into the “Church of Christ”; Alma 46:13-16 (74 BC): members of the church were referred to as “Christians”.

²³⁴ For an example of this kind of framing, see Peterson, “Of ‘Galileo Events,’ Hype, and Suppression,” xv: “Teaming with Simon Southerton, an Australian biologist who once served as a bishop in the Church of Jesus Christ but who now vehemently rejects his former faith, Murphy prepared a brief item for *Anthropology News* ...”

²³⁵ William Lobdell and Larry Stammer, “[Mormon Scientist, Church Clash Over DNA Test](#): Anthropologist may be ousted for questioning teachings about Native American ancestry,” *Los Angeles Times* (8 December 2002); M.L. Lyke, “Church put to DNA Test,” *Seattle Post* (13 January 2003); Dan Egan, “[BYU Gene Data May Shed Light on Origin of Book of Mormon’s Lamanites](#),” *Salt Lake Tribune* (30 November 2000); Patty Henetz, “[LDS Scholars Revising Doctrine in Light of DNA Research](#),” *Salt Lake Tribune* (24 July 2004); Martin Naparsteck, “When Scripture and Science Just Don’t Get Along,” *Salt Lake Tribune* (5 September 2004); Jennifer Dobner, “[LDS Author Faces Excommunication](#),” *Deseret Morning News* (17 July 2005); Elise Soukup, “[The Mormon Odyssey](#),” *Newsweek* (17 October 2005). The Henetz and Dobner (Associated Press) stories were widely published across the United States.

paragraph: 'Joseph Smith had married a dozen women who were already married to other members of the Church.'²³⁶

²³⁶ Graham Downie, "Mormons shut out Canberra Scientist," *Canberra Times* (2 August 2005). Interestingly, the Reformed LDS (originally the RLDS, and now the Community of Christ) separated from the LDS during the nineteenth century polygamy scandals but long maintained an apocryphal tradition where Joseph Smith was not personally involved. See William Russell, "The LDS Church and Community of Christ: Clearer Differences, Closer Friends," *Dialogue: A Journal of Mormon Thought* 36 (2003): 177-190.



11. Losing the Lamanite Myth

Ten centuries ago a handful of Norse sailors slipped into Newfoundland, established small colonies, traded with local natives, then sailed back into the fog of history. In spite of the small scale of their settlements and the brevity of their stay, unequivocal evidence of their presence has been found, including metalwork, buildings, and Norse inscriptions. Just six centuries earlier, the Book of Mormon tells us, a climactic battle between fair-skinned Nephites and dark-skinned Lamanites ended a millennial dominion by a literate, Christian, Bronze Age civilization with a population numbering in the millions. Decades of serious and honest scholarship have failed to uncover credible evidence that these Book of Mormon civilizations ever existed. No Semitic languages, no Israelites speaking these languages, no wheeled chariots or horses to pull them, no swords or steel to make them. They remain a great civilization vanished without a trace, the people along with their genes.²³⁷

Population genetics research has failed to detect pre-Columbian Jewish DNA in Native Americans generally (Chapters 4B and 4C), Mesoamericans and the Maya specifically (Chapter 7B) or among the Polynesians (Chapter 9C). When scientists focus on the traces of non-Asian DNA in Mesoamericans, and other Latin Americans, they do find traces of Jewish DNA, but this DNA was clearly brought to the New World on Spanish galleons. If there ever was Lamanite DNA it has vanished.

Given that millions of Latter-day Saints in Polynesia and the Americas believe they are literal descendants of the Lamanites, the recent discoveries of population genetics have forced LDS apologists to reassess what it means to

²³⁷ Southerton *Losing a Lost Tribe* 199. For a comprehensive description of the Norse visits to North America see Birgitta Wallace "The Norse in Newfoundland: L'Anse aux Meadows and Vinland" *Newfoundland Studies* 19 (2003): 5-43.

be a Lamanite. While apologists will undoubtedly vigorously defend the long *tradition* of LG, there is no question that the failure to detect Lehiite DNA has stimulated a hasty production of Lamanite re-defining apologetics. One year after Murphy published *Lamanite Genesis, Genealogy, and Genetics* in 2002, three apologetic papers were published that ‘clarified’ scripture to account for the absence of genetic Lamanites.²³⁸

A. Reinterpreting scripture

Sorenson and Roper believe Latter-day Saints ‘need to think of the Nephite record keepers as a minority—an elite minority at that—who, like most ruling minorities, tended to have their speech and customs eventually smothered by the speech and lifeways of the majority population’.²³⁹ They propose that the term Lamanite soon lost its hereditary connotation and instead ‘refers not only to the eventual Gentile (European) settlers of the 16th through 21st century but also to those ancient peoples whom the Lord brought as well’. Apparently, anyone who inhabited the Americas before, during, and after the Book of Mormon period may be considered a Lamanite.

Other apologists have argued that the stain of having rejected God’s covenants was passed from generation to generation via ‘memes,’ a term coined by Richard Dawkins in his book, *The Selfish Gene*, to denote a non-genetic unit of replication of human culture.²⁴⁰ The fact that a person’s distant ancestors may have rubbed shoulders with a ‘genetic’ Lamanite would be sufficient for them to be considered Lamanites. According to Meldrum and Stephens, genetic traces of the House of Israel could be thought of as leaven in bread. Since too much leaven can be tasted in bread and decreases its quality, one should not expect to find genetic markers for the children of Lehi or even for the children of Abraham.²⁴¹ Given such sweeping reinterpretations, LDS writers would do well to clarify who isn’t a Lamanite.

The Book of Mormon text is rich in familial terminology such as family, seed, children, descendants, fathers, sons, brethren, and so on. Most readers have thought these describe close genetic ties throughout its history. Roper believes familial terms such as ‘descendant,’ ‘seed,’ and ‘children’ were mostly used to refer to ‘adopted’ Lamanites:

while familial terms in the Book of Mormon include a genetic component, the more common usage of such terms in the text is ideological, social, and political. Just as the concept of Israel embraced many who were not actual descendants of Jacob, the

²³⁸ Apologists may also have been influenced by Southerton’s personal account of his discovery of the population genetics research published in March 2000 on the exmormon.org website.

²³⁹ Sorenson and Roper “Before DNA” 11,18

²⁴⁰ Meldrum and Stephens “Who Are the Children of Lehi?” 47-49.

²⁴¹ Meldrum and Stephens “Who Are the Children of Lehi?” 38, 46, 51.

concepts of Nephite and Lamanite included within those designations both literal descendants and others who were adopted in.²⁴²

Critics contend that a plain reading of the Book of Mormon indicates that familial terms were meant to convey exactly what one would think they mean—a genetic link. Metcalfe observed that ‘when ancestry is identified, all post-Jaredite peoples—Nephites and non-Nephites, good and bad, groups and individuals—consistently trace their pedigree back to the founding Israelite immigrants.’²⁴³ Numerous wars were waged to avenge familial injustices centuries earlier (Alma 20: 13; 54: 24). In addition we are informed ‘the skins of the Lamanites were dark, according to the mark which was set upon their fathers’ (Alma 3:6).

Even more strained arguments are required to explain away the numerous matter-of-fact statements by Joseph Smith and other church leaders who plainly taught that the Book of Mormon outlined the origins of the ‘Indians’ in the western hemisphere. Statements by Joseph Smith that ‘the Indians were the literal descendants of Abraham’ and that the gold plates gave ‘an account of the former inhabitants of this continent’ are apparently not as straightforward as they first appear. Roper believes there is no need to read into these statements any more than Smith’s personal opinion. As note by Metcalfe, apologetic scholars,

have yet to explain cogently why all Book of Mormon characters—God included—seemingly know nothing about the hordes of indigenous peoples that the revisionist theories require; why Joseph Smith’s revelation of the Book of Mormon is trustworthy enough to extract a detailed limited geography, yet his revelations about Amerindian identity and origins are flawed, if not erroneous; and why their word should count more than that of LDS prophets on the one hand, and that of secular scholars on the other.²⁴⁴

B. Struggles with Lamanite identity

While apologists have been preoccupied with Lamanite semantics, they have largely ignored ‘Native voices’; Latter-day Saints most directly affected by widespread beliefs arising from the Book of Mormon. About a third of the Church’s membership feel they have the ‘Blood of Israel’ flowing through their veins. Today, large communities of Latter-day Saint occur throughout Latin America and the Pacific, especially in places like Tonga and Samoa, which have the highest per capita rates of LDS Church membership in the

²⁴² Mathew Roper, “Swimming in the Gene Pool: Israelite Kinship Relations, Genes, and Genealogy,” *The FARMS Review* 15 (2003): 129-164, 147-155.

²⁴³ Metcalfe “Reinventing Lamanite Identity” 21.

²⁴⁴ Metcalfe “Reinventing Lamanite Identity” 22.

world. These 'Lamanites' would be equally surprised by their 'erasure' through apologetics *and* the population genetics.

For their entire lives the Book of Mormon has been presented to Indigenous Latter-day Saints as a history of their peoples. Perhaps, 'It is time to turn and face the catastrophes of Mormonism's colonialist and racist history with open eyes.'²⁴⁵ In their myth-challenging book *Decolonizing Mormonism: Approaching a Postcolonial Zion*, Gina Colvin and Joanna Brooks share stories of latter-day Lamanites experiencing a faith crisis at the maze-like intersection of Mormon dogma, apologetics, science and native culture and customs. The responses expose contrasting Indigenous perspectives on their Lamanite heritage, but similar feelings of betrayal and loss as they process new insights into their true ancestry.

In North America, Indigenous peoples have felt the full force of the colonial thrust of the 'Gentiles', many of whom were Mormons. According to the racial narrative of the Book of Mormon, one must celebrate the incursion of white Mormon settlers into American Indian tribal homelands in order to 'be' Mormon. For Elise Boxer (*Dakota*), being a 'Lamanite' came at the expense of her native identity, while the Book of Mormon story had no cultural or social resonance for her. She recalls how during the *Days of '47 Pioneer* celebrations in Salt Lake City in 2013 she felt compelled to return to the Assiniboine reservation. 'I simply could not handle another "Pioneer" celebration in which Indigenous peoples are marginalized or placed on the periphery of the historical narrative'.²⁴⁶ Angelo Baca (*Navajo/Hopi*) considers widely held beliefs, by Mormons and their leaders, regarding the history of Indigenous peoples, contribute to 'the invisibility, voicelessness, and neglect of American Indian thought, perspective, culture, and history'.²⁴⁷ As a college student Thomas Murphy (*Iroquois descent*) found himself 'appalled at the racism that permeated the Book of Mormon' and perplexed 'that any Native person, let alone some of [his] own ancestors, would join a religion that taught that a dark skin was a curse from God for wickedness'.²⁴⁸

In New Zealand the LDS Church has actively participated in erasing First Nation language and culture and stood silent as LDS Māori fought for political and treaty rights. Shonagh Harris (*Māori*) resents the rewriting of her genealogy, through the 'hawking' of the Hagoth myth, and the colonial behavior of the Church:

²⁴⁵ Gina Colvin and Joanna Brooks *Decolonizing Mormonism: Approaching a Postcolonial Zion* G. Colvin and J. Brooks eds (Salt Lake City: The University of Utah Press, 2018), Editors introduction, 12.

²⁴⁶ Elise Boxer "'This is the Place!': Disrupting Mormon Settler Colonialism" in Colvin and Brooks *Decolonizing Mormonism* 77-100, 96.

²⁴⁷ Angelo Baca "Porter Rockwell and Samuel the Lamanite Fistfight in Heaven: A Mormon Navajo Filmmaker's Perspective" in Colvin and Brooks *Decolonizing Mormonism* 68-76, 74. Angelo produced the film *In Laman's Terms: Looking at Lamanite Identity* in response to indigenous members being 'subjugated and diminished as the literal "other," and made to be background characters in a colonial story' 70.

²⁴⁸ Thomas Murphy "Decolonization on the Salish Sea: A Tribal Journey back to Mormon Studies" in Colvin and Brooks *Decolonizing Mormonism* 47-66, 60.

I am 66 now, but in my teens, speaking our native tongue in the chapel was actively discouraged by the leadership. We have a family cemetery. Generations upon generations are interred within. Four of my uncles who died after 1960 signed a paper issued by the local branch, agreeing to be interred in the local general (white) cemetery. The church wants indigenous First Nations members to turn their backs (and minds) on their culture and heritage. My ancestors gifted cultural artifacts to the Polynesian Cultural Centre in Hawaii. Our hapū [clan] gifted a waka [traditional canoe]. The church is quite happy to exploit our culture for profit, but not happy for us to act Māori in their chapels.²⁴⁹

In the Pacific generally, however, Indigenous peoples and their cultures have fared better during the colonial period, than their distant cousins in the New World, and many Latter-day Saints celebrate their Lamanite heritage.²⁵⁰ Phil Ormsby (*Māori*) ‘visualized [himself] among the fighting Lamanites and lived out the fantasies of the [Book of Mormon] as [he] read it.’²⁵¹ Ormsby said ‘It gave me great mana [prestige] to know that these were my true ancestors.’ Polynesian DNA studies changed his feelings completely. ‘Some days I am angry, and some days I feel pity...I feel pity for my people who have become obsessed with something that is nothing but a hoax.’ Gina Colvin (*Māori*) felt similar pride to be a Lamanite. She recalls ‘The fact that Mormonism saw my ancestry and weaved it into its theology offered me a sense of place and even confidence that no one else could.’²⁵² Colvin is grateful for the time she believed she was a Lamanite but has faced the genetic reality that ‘DNA research tells an entirely different story’. The tenure of the Lamanite myth, at least in New Zealand, appears precarious:

The young simply don’t need myths and fables about who they are from white men in the United States. Stories of Hagoth are occasionally recited in Sunday school classes or sacrament talks but they don’t get much traction from young Pasifika people. They simply don’t sit well in our cultural lexicon that has exploded out further than Mormonism has dared venture.

C. Institutional doublethink

It remains to be seen how long the LDS Church can carry on a ‘backdoor’ defense of the Book of Mormon; tacitly patronizing apologetic scholarship

²⁴⁹ Personal correspondence from Shonagh Harris to Simon Southerton, 18 Oct 2019.

²⁵⁰ In her book *Mormon and Māori* (Salt Lake City: Greg Kofford Books, 2014), historian Marjorie Newton, an Australian Mormon, describes the widespread belief among New Zealand and Australian Māori that they are Lamanites in spite of the fact that Hagoth was a Nephite. LDS apologist Louis Midgley severely criticizes Newton, who he believes ‘muddles Hagoth with the Lamanites’. See Louis C. Midgley ‘Marjorie Newton’s Account of the Faith of the Māori Saints: A Critical Appraisal’ *Interpreter: A Journal of Latter-day Saint Faith and Scholarship* 30 (2018): 179-206.

²⁵¹ William Lobdell “Bedrock of a Faith is Jolted”.

²⁵² Gina Colvin “A Māori Mormon Testimony” in Colvin and Brooks *Decolonizing Mormonism* 27-46, 41-43.

but not officially endorsing it.²⁵³ While the Church claims to have no position on Book of Mormon geography, it has supported decades of BYU research focussed almost exclusively on the Maya. While apologists have been busy blurring Lamanite identity through scriptural hair-splitting, the silence of the Brethren allows the dominant Lamanite myth to perpetuate. The current leaders appear reluctant or unable to honestly address this institutional dissonance. Meanwhile, the apologetic reinterpretations of the Book of Mormon required to accommodate the science, are shocking to many orthodox Mormons now flocking to snake oil salesmen. Are apologetic arguments for *extinction* that much better than scientific arguments for *never existing*? Both leave equally unfulfilled a central purpose of the Book of Mormon; a book ‘Written to the Lamanites’ to ‘restore them to a knowledge of their fathers’.²⁵⁴

The Church has not been well served by its apologists and (pseudo)scholars. Decades of anthropological apologetics focussed on Mesoamerica, and the twisted science of the Heartlanders, has produced many Latter-day Saints convinced there is abundant reliable evidence for the historicity of the Book of Mormon.²⁵⁵ As the beliefs of most Mormons generally aren’t constrained by awareness of limited geography ideas, they have assumed the Book of Mormon tells the true origin story of all Native Americans. Given the discoveries of genetics, these Latter-day Saint origin myths, which ‘colonize’ native myths, can no longer be sustained. Jane Hafen, a Latter-day Saint Professor of English at the University of Nevada, Las Vegas, recently observed:

Rather than recognizing indigenous inhabitants and their own understandings of origins, the Western world struggled to fit Native people into its own cosmology. The idea that indigenous people descended from the Twelve Tribes of Israel was not new to Mormonism, but creating an entire book of scripture with that explanation, and a tale of an epic journey by Lehi, is singularly colonizing.²⁵⁶

Mormon leaders know that attempts to change the way Latter-day Saints think about the Book of Mormon risks undermining the foundation upon which many have based their religious convictions. The faith of many Latter-day Saints is anchored by an emotional, feeling-based ‘knowledge’ that the Book of Mormon is a true history of the Americas—a knowledge unencumbered by facts. Millions of members feel a familial bond with Father

²⁵³ Southerton *Losing a Lost Tribe* 205-207.

²⁵⁴ Title page of Book of Mormon and D&C 3: 18-19.

²⁵⁵ The Smithsonian Institution grew so tired of Mormons inquiring about how the Book of Mormon was guiding their research it produced a formal ‘[Statement regarding the Book of Mormon](#)’. In 1998 this statement was substantially shortened after a meeting with LDS apologists and pressure from US senators. Apologists argue that the revision recognizes archaeological evidence in support of the Book of Mormon and critics suggest political interference and institutional indifference.

²⁵⁶ P. Jane Hafen, “Afterword” in Colvin and Brooks *Decolonizing Mormonism* 263-274, 265.

Lehi, an emotion that has often played a key role in their conversion to the Church. The Brethren are aware of just how deep-seated and crucial these feelings are in the processes of conversion and retention. It remains to be seen if a middle ground can be found—a means to reinterpret the Book of Mormon to detach it from the true histories of Native Americans and Polynesians—without doing damage to everything else the Church professes on spiritual and moral issues. Church leaders have acknowledged its past attitudes toward African Americans were the product of nineteenth century racism rather than God’s will.²⁵⁷ When will they honestly confront the eighteenth and nineteenth century racism, towards Indigenous Americans, that is woven into the Book of Mormon? An important step would be to stop expecting members to believe things about First Nations people that are simply not true.

²⁵⁷ [See Race and the Priesthood Gospel Topics Essay](#)

Appendices

Source literature for mitochondrial DNA lineages of Native Americans.

The research cited below was aimed at identifying the pre-Columbian origins of Native American populations. Attempts were typically made by the researchers to exclude individuals with known admixture. However, it is impossible to avoid all admixture that occurred, especially in earlier generations soon after the arrival of Columbus. Research focussed on the genetic makeup of contemporary admixed populations was excluded.

Appendix A – North, Central and South American Indians

1. Arias et al., *American Journal of Physical Anthropology* 165 (2018): 238-255.
2. Baca et al., *BMC Genetics* 13 (2012): 30.
3. Bailliet et al., *American Journal of Human Genetics* 55 (1994): 27-33.
4. Barbieri et al., *American Journal of Human Biology* 23 (2011): 89-99.
5. Batista et al., *Human Molecular Genetics* 4 (1995): 921-29.
6. Bert et al., *Annals of Human Biology* 31 (2004): 9-28.
7. Bert et al., *Human Biology* 73 (2001): 1-16.
8. Bianchi et al., *Brazilian Journal of Genetics* 18 (1995): 661-68.
9. Bolnick (2003), 72nd Meeting American Association of Physical Anthropologists.
10. Bolnick & Smith, *American Journal of Physical Anthropology* 122 (2003): 336-54.
11. Bolnick & Smith *American Antiquity* 72 (2007): 627.
12. Bortolini et al., *Annals of Human Genetics* 62 (1998): 133-45.
13. Briceno et al., (2003), display at the International Genetics Congress, Melbourne.
14. Budowle et al., *International Journal of Legal Medicine* 116 (2002): 212-15.
15. Cabana et al., *American Journal of Physical Anthropology* 131 (2006): 108-19.
16. Cabana et al., *Human Biology* 86 (2014): 147-165.
17. Cardoso et al., *Forensic Science International: Genetics* 7 (2013): e52-e55.
18. Cardoso et al., *Heredity* 108 (2012): 609-615.
19. Carlyle & O'Rourke (2001), 70th Meeting of the American Association of Physical Anthropologists.
20. Carlyle et al., *American Journal of Physical Anthropology* 113 (2000): 85-101.
21. Carnese et al., *American Journal of Physical Anthropology* 141 (2009): 452-62.
22. Corella et al., *Annals of Human Biology* 34 (2007): 34-55.
23. De la Fuente et al., *American Journal of Physical Anthropology* 158 (2015): 719-729.
24. Demarchi et al., *American Journal of Physical Anthropology* 115 (2001): 199-203.
25. Derbeneva et al., *American Journal of Human Genetics* 71 (2002): 415-21.
26. Di Corcia et al., *American Journal of Physical Anthropology* 163 (2017): 328-338.
27. Dipierri et al., *Human Biology* 70 (1998): 1001-10.
28. Easton et al., *American Journal of Human Genetics* 59 (1996): 213-25.
29. Fehren-Schmitz et al., *American Journal of Physical Anthropology* 141 (2010): 208-221.
30. Fehren-Schmitz et al., *Annals of Human Genetics* 75 (2011): 266-283.
31. Forster et al., *American Journal of Human Genetics* 59 (1996): 935-45.
32. Fuselli et al., *Molecular Biology and Evolution* 20 (2003): 1682-91.
33. Garcia-Bour et al., *American Journal of Physical Anthropology* 123 (2004): 361-70.
34. Gayà-Vidal et al., *American Journal of Physical Anthropology* 145 (2011): 215-30.
35. Ginther et al., in *DNA Fingerprinting: State of the Science*, eds. Pena et al. (1993): 211-19.
36. González-Martín et al., *PLoS ONE* 10 (2015): e0131791.
37. Gonzalez-Oliver et al., *American Journal of Physical Anthropology* 11 (2001): 230-35.
38. Gorostiza et al., *PLoS ONE* 7 (2012): e44666.
39. Grennan & Merriwether (2003), 72nd Meeting of the American Association of Physical Anthropologists.
40. Horai et al., *Molecular Biology and Evolution* 10 (1993): 23-47.

41. Hughes et al., *Human Biology*, 88 (2016): 251–263.
42. Huoponen et al., *European Journal of Human Genetics* 5 (1997): 25–34.
43. Kaestle & Smith, *American Journal of Physical Anthropology* 115 (2001): 1–12.
44. Kemp et al., *Proceedings of the National Academy of Sciences USA* 107 (2010): 6,759–6,764.
45. Keyeux et al., *Human Biology* 74 (2002): 211–33.
46. Kolman & Bermingham, *Genetics* 147 (1997): 1289–1302.
47. Kolman et al., *Genetics* 140 (1995): 275–83.
48. Lalueza et al., *Human Molecular Genetics* 6 (1997): 41–46.
49. Lalueza-Fox et al., *American Journal of Physical Anthropology* 121 (2003): 97–108.
50. Lalueza-Fox et al., *Annals of Human Genetics* 65 (2001): 137–51.
51. Lawrence et al., *Human Biology* 82 (2010): 157–178.
52. LeBlanc et al., *Journal of Field Archaeology* 32 (2007): 161–175.
53. Lewis et al., *American Journal of Physical Anthropology* 127 (2005): 351–360.
54. Llamas et al., *Scientific Advances* 2 (2016): e1501385.
55. Lopopolo et al., *American Journal of Physical Anthropology* 161(2016): 698–704.
56. Lorenz & Smith, *American Journal of Physical Anthropology* 101 (1996): 307–23.
57. Malhi et al., *American Journal of Physical Anthropology* 120 (2003): 108–24.
58. Malhi et al., *Human Biology* 73 (2001): 17–55.
59. Marrero et al., *American Journal of Physical Anthropology* 132 (2007): 301–310.
60. Melton et al., *American Journal of Physical Anthropology* 133 (2007): 753–770.
61. Mendes et al., *American Journal of Physical Anthropology* 140 (2009): 526–531.
62. Mendes-Junior et al., *Human Biology* 86 (2014): 93–104.
63. Merriwether & Ferrell, *Molecular Phylogenetic and Evolution* 5 (1996): 241–46.
64. Merriwether et al., *American Journal of Physical Anthropology* 98 (1995): 411–30.
65. Merriwether et al., *Experientia* 50 (1994): 592–601.
66. Mesa et al., *American Journal of Human Genetics* 67 (2000): 1277–86.
67. Mills, Ph.D. diss., Ohio State University, 2003.
68. Monroe et al., *American Journal of Physical Anthropology* 150 (2013): 618–631.
69. Monsalve et al., *Annals of Human Genetics* 60 (1996): 293–303.
70. Moraga et al., *American Journal of Physical Anthropology* 113 (2000): 19–29.
71. Morales-Arce et al., *American Journal of Physical Anthropology* 163 (2017): 328–338.
72. Morales-Arce et al., *Archaeological and Anthropological Sciences* 11 (2019): 3459–3475.
73. Ochoa-Lugo et al., *Human Biology* 88 (2016): 136–67.
74. Parr et al., *American Journal of Physical Anthropology* 99 (1996): 507–18.
75. Pauro et al., *Human Biology* 85 (2013): 699–720.
76. Posth et al., *Cell* 175 (2018): 1173–1174.
77. Raff et al., *American Journal of Physical Anthropology* 157 (2015): 603–614.
78. Ribeiro dos Santos et al., *American Journal of Physical Anthropology* 101 (1996): 29–37.
79. Rickards et al., *American Journal of Human Genetics* 65 (1999): 519–30.
80. Rubicz et al., *Human Biology* 75 (2003): 809–35.
81. Saillard et al., *American Journal of Human Genetics* 67 (2000): 718–26.
82. Sala et al., *Human Biology* 82 (2010): 433–56.
83. Salas et al., *PLoS One* 4 (2009): e6882.
84. Sandoval et al., *Annals of Human Genetics* 80 (2016): 88–101.
85. Sandoval et al., *Human Genetics* 126 (2009): 521–531.
86. Santos et al., *Annals of Human Genetics* 60 (1996): 305–19.
87. Santos et al., *Human Biology* 66 (1994): 963–77.
88. Schurr et al., *American Journal of Human Genetics* 46 (1990): 613–23.
89. Schurr et al., *American Journal of Physical Anthropology* 148 (2012): 422–435.
90. Scozzari et al., *American Journal of Human Genetics* 60 (1997): 241–44.
91. Shields et al., *American Journal of Human Genetics* 53 (1993): 549–62.
92. Shinoda et al., *American Journal of Physical Anthropology* 131 (2006): 98–107.
93. Shook and Smith *American Journal of Physical Anthropology* 137 (2008):14–29.
94. Smith et al., *American Journal of Physical Anthropology* 110 (1999): 271–84.
95. Smith et al., *American Journal of Physical Anthropology* 111 (2000): 557–72.
96. Snow et al., *Journal of Archaeological Science* 38(2011): 3,122–3,133.
97. Snow et al., *Journal of Archaeological Science* 37 (2010): 1635–1645.
98. Söchtig et al., *BMC Genomics* 16 (2015): 131.
99. Stone & Stoneking, *Philosophical Transactions of the Royal Society* 354 (1999): 153–59.
100. Torres et al., *American Journal of Physical Anthropology* 18 (2006): 59–65.
101. Torroni et al., *American Journal of Human Genetics* 53 (1993): 563–90.
102. Torroni et al., *American Journal of Human Genetics* 54 (1994): 303–18.
103. Torroni et al., *Proceedings of the National Academy of Science* 91 (1994): 1158–62.

104. Torroni et al., *Genetics* 130 (1992): 153-62.
105. Usme-Romero et al., *Genetics and Molecular Biology* 36 (2013): 149-157.
106. Varano et al., *American Journal of Human Biology* 28 (2016): 846-856.
107. Vona et al., *American Journal of Physical Anthropology* 127 (2005): 361-9.
108. Ward et al., *American Journal of Human Biology* 8 (1996): 317-23.
109. Ward et al., *Proceedings of the National Academy of Science* 88 (1991): 8720-24.
110. Ward et al., *Proceedings of the National Academy of Science* 90 (1993): 10663-67.
111. Williams et al., *American Journal of Physical Anthropology* 117 (2002): 246-59.
112. Xavier et al., *PLoS ONE* 10 (2015): e0120155.

Appendix B – Ancient Americans

1. Bolnick (2003) 72nd Meeting American Association of Physical Anthropologists.
2. Bolnick & Smith *American Antiquity* 72 (2007): 627.
3. Carlyle et al., *American Journal of Physical Anthropology* 113 (2000): 85-101.
4. Fehren-Schmitz et al., *American Journal of Physical Anthropology* 141 (2010): 208-221.
5. Fehren-Schmitz et al., *Annals of Human Genetics* 75 (2011): 266-283.
6. Garcia-Bour et al., *American Journal of Physical Anthropology* 123 (2004): 361-70.
7. Gonzalez-Oliver et al., *American Journal of Physical Anthropology* 11 (2001): 230-35.
8. Grennan & Merriwether (2003) 72nd Meeting American Association of Physical Anthropologists.
9. Kaestle and Smith, *American Journal of Physical Anthropology* 115 (2001): 1-12.
10. Lalueza et al., *Human Molecular Genetics* 6 (1997): 41-46.
11. Lalueza-Fox et al., *American Journal of Physical Anthropology* 121 (2003): 970108.
12. Lawrence et al., *Human Biology* 82 (2010): 157-178.
13. Llamas et al., *Scientific Advances* 2 (2016): e1501385.
14. Merriwether et al., *American Journal of Physical Anthropology* 98 (1995): 411-30.
15. Mills PhD Dissertation Ohio State University (2003).
16. Monsalve et al., *Annals of Human Genetics* 60 (1996): 293-303.
17. Morales-Arce et al., *American Journal of Physical Anthropology* 163 (2017): 328-338.
18. Morales-Arce et al., *Archaeological and Anthropological Sciences* 11 (2019): 3459-3475.
19. Ochoa-Lugo et al., *Human Biology* 88 (2016): 136-67.
20. Parr et al., *American Journal of Physical Anthropology* 99 (1996): 507-18.
21. Posth et al., *Cell* 175 (2018): 1173-1174.
22. Schurr et al., *American Journal of Human Genetics* 46 (1990): 613-23.
23. Shinoda et al., *American Journal of Physical Anthropology* 131 (2006): 98-107.
24. Shook and Smith *American Journal of Physical Anthropology* 137 (2008): 14-29.
25. Snow et al., *Journal of Archaeological Science* 37 (2010): 1635-1645.
26. Stone & Stoneking, *Philosophical Transactions of the Royal Society* 354 (1999): 153-59.
27. Torroni et al., *American Journal of Human Genetics* 53 (1993): 563-90.

Appendix C – Mesoamericans

1. González-Martín et al., *PLoS ONE* 10 (2015): e0131791.
2. Gonzalez-Oliver et al., *American Journal of Physical Anthropology* 11 (2001): 230-35.
3. Gorostiza et al., *PLoS ONE* 7 (2012): e44666.
4. Kemp et al., In *Biomolecular archaeology: Genetic approaches to the past.* (2005).
5. Kemp et al., *Proceedings of the National Academy of Sciences USA* 107 (2010): 6,759-6,764.
6. Lorenz & Smith, *American Journal of Physical Anthropology* 101 (1996): 307-23.
7. Mata Míguez et al., *American Journal of Physical Anthropology* 149 (2012): 504-516.
8. Merriwether et al., *Experientia* 50 (1994): 592-601.
9. Morales-Arce et al., *American Journal of Physical Anthropology* 163 (2017): 328-338.
10. Morales-Arce et al., *Archaeological and Anthropological Sciences* 11 (2019): 3459-3475.
11. Ochoa-Lugo et al., *Human Biology* 88 (2016): 136-67.
12. Salas et al., *PLoS One* 4 (2009): e6882.
13. Sandoval et al., *Human Genetics* 126 (2009): 521-531.
14. Santos et al., *Human Biology* 66 (1994): 963-77.
15. Söchtig et al., *BMC Genomics* 16 (2015): 131.
16. Torroni et al., *Genetics* 130 (1992): 153-62.

Appendix D – Maya

1. González-Martín et al., *PLoS ONE* 10 (2015): e0131791.
2. González-Oliver et al., *American Journal of Physical Anthropology* 116 (2001): 230–235.
3. Gorostiza et al., *PLoS ONE* 7 (2012): e44666.
4. Merriwether et al., *Experientia* 50 (1994): 592–601.
5. Ochoa-Lugo et al., *Human Biology* 88 (2016): 136–67.
6. Sandoval et al., *Human Genetics* 126 (2009): 521–531.
7. Söchtig et al., *BMC Genomics* 16 (2015): 131.
8. Torroni et al., *American Journal of Human Genetics* 54 (1994): 303–318.