Moroni: The Final Voice

DNA and the Book of Mormon

The Word of God

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Recent media attention to DNA studies that potentially touch on the Book of Mormon’s reliability as a record of ancient American peoples stands within the wider debate about whether science can either establish or disprove events that belong to the domains of history and faith. Naïveté suggests that science can serve as a dispassionate arbiter of questions of history and faith, a view that experience declares to be too simple. The real issues boil down to two—designing a scientific experiment that will accurately measure what has happened among human populations, and then coming to recognize the limitations of science when dealing with matters of history. Properly, one of the few scientific endeavors devised to uncover our past is archaeology. However, in the interpretation of archaeological data, the questions that demand answers show that an accurate understanding does not automatically come with a person’s efforts to dig literally into the earth.

On the topic of DNA and the Book of Mormon, readers are treated to the considered opinions of four specialists in the field of DNA research. Providing essential context for that collective discussion is the article by John L. Sorenson and Matthew Roper, which sets out the major cultural, historical, and theological questions that a person must attempt to answer before turning to science. Though necessarily brief, their answers to 14 questions bring us inside what scholars have learned during the past century about ancient America.

Michael F. Whiting’s DNA-related work on walking sticks that re-evolved the ability to fly 50 million years after losing it was featured in the 16 January 2003 issue of the journal *Nature*. Whiting, a BYU professor of biology, frames the challenges of creating an experiment that could determine scientifically which Native Americans are descendants of any of the three known colonizing groups mentioned in the Book of Mormon. He concludes that, given the present state of science, such an experiment is impossible to design and would not be taken seriously by the scientific community.

In a short piece, John M. Butler, the lead scientist in developing DNA tests that identify the victims of the attacks on the World Trade Center on September 11, 2001, points to the insurmountable difficulties in identifying the genetic heritage of the chief ancestors of the Lehite peoples. One of his points is that the females in the Lehite colonies all inherited their mitochondrial DNA from Ishmael’s wife, about whom we know almost nothing, including whether she was a full-blooded Israelite.

A pair of biologists from Idaho State University, D. Jeffrey Meldrum and Trent D. Stephens, focus on DNA questions touching on the descendants of Lehi and Sariah. One of their chief points has to do with the traceable genetic characteristics that a person inherits from distant ancestors. By appealing to straightforward geno-
The question whether DNA studies can illuminate Book of Mormon origins has become a storm center in recent years and months. On one side we hear a growing chorus of voices claiming that DNA studies of Native American peoples prove conclusively that there is no evidence of a Middle Eastern strand within the Native American gene pool. On the other side, for the first time, we hear the reasoned voices of respected, believing scientists and anthropologists who raise scientifically based questions about the approach of critics and about the nature of the biological and cultural evidences that have so far come under review. In the four-part series that follows, the first article, by John Sorenson and Matthew Roper, sets out the social, cultural, and geographical backdrop against which the scientists' studies can be understood. The next three articles explore from different angles the possibilities and impossibilities of applying DNA science to the wider issue of Book of Mormon origins. —Ed.
In recent years critics who question that the Book of Mormon is an ancient document have made noisy claims that “facts” from the science of molecular biology contradict what the Nephite record says about the peoples it describes. In this issue of the Journal, specialists in DNA analysis emphasize the care one must take in responsibly conceptualizing problems and then using DNA data in any evaluation of the Book of Mormon as a historical source. The issues they take up are technically complex, and it is important that they raise the cautions they do. But from our perspective there are questions that should precede any technical matters.

This article provides a framework within which the quality and aptness of questions about DNA studies on Native Americans and their implications for Book of Mormon history should be approached. We raise a set of issues that anyone should confront when thinking clearly and honestly about this subject. Our answers are succinct because the space available is limited. For those who wish to know more, the endnotes point to additional sources of information.

Critics of the Book of Mormon frequently take the position that the New World events related in the Nephite record must be read as taking place on a stage consisting of the entire Western Hemisphere. This allows them to treat the scripture as though it purported to be a history of the American Indian. Their arguments about the supposed factual inaccuracy of the sacred record rest heavily on this claimed geography. But what the book actually says contradicts the idea that two entire continents were involved in the story. Although early Latter-day Saints assumed a hemispheric setting (and some church members today still hold that view), the record actually describes a setting where the people were limited in numbers and the lands they occupied were restricted in scale. Yet the issue touches more than geography alone; the entrained question is one of demography and descent. Were there other populations present in the Americas who were not exclusively descended from Lehi’s party? We treat both issues below.

A responsible approach to the scripture requires getting clear about the actual geographic and demographic scale on which its events were played out, as Elder Dallin H. Oaks has pointed out. He recalled taking a class as a student at Brigham Young University in which

I was introduced to the idea that the Book of Mormon is not a history of all of the people who have lived on the continents of North and South America in all ages of the earth. Up to that time I had assumed that it was. If that were the claim of the Book of Mormon, any piece of historical, archaeological, or linguistic evidence to the contrary would weigh in against the Book of Mormon, and those who rely exclusively on scholarship would have a promising position to argue.

In contrast, if the Book of Mormon only purports to be an account of a few peoples who inhabited a portion of the Americas during a few millennia in the past, the burden of argument [about its historical accuracy] changes drastically. It is no longer a question of all versus none; it is a question of some versus none. In other words, in the circumstance I describe, the opponents of historicity must prove that the Book of Mormon has no historical validity for any peoples who lived in the Americas in a par-
ticular time frame, a notoriously difficult exercise. One does not prevail on that proposition by proving that a particular . . . culture represents migrations from [eastern] Asia. The opponents of historicity of the Book of Mormon must prove that the people whose religious life it records did not live anywhere in the Americas.

Furthermore, DNA scientists have to answer the questions of location and scale if they are to know from where to draw data appropriate for historical analysis of the Book of Mormon. Our first questions assist in that task.

1. How does the Book of Mormon characterize the geographical scene in the American “promised land” where the events the book relates took place?

Numerous books and articles have addressed bits and pieces of this question. The problem is very complex, for hundreds of passages in the Book of Mormon either tell us directly about or imply spatial relationships and other geographical parameters that characterized the setting.

As the primary author and editor of the Book of Mormon, the prophet Mormon evidently had his own mental map of Nephite lands, which made it possible for the total body of geographical information that he employed to be remarkably consistent. This is not surprising, because from his own account we know that he had personally traveled over a great deal of Nephite territory (see Mormon 1:6, 10–6:6). The geographical data in the book lead to the following salient points:

1. When mapped, the outline of lands familiar to the Nephites appears to have been more or less in the shape of an hourglass but with the nature of the northward and southward extremities being left unclear.

2. What the Nephites considered their “east sea” in all likelihood was the Atlantic Ocean.

3. The Nephites’ “west sea” was part of the Pacific Ocean. Lehi’s party landed on the west sea coast at the extreme south of the territory they knew as “the promised land.”

4. The two crucial landmasses were called the land southward and the land northward. They were connected by an isthmus described as “narrow.” The Nephites thought of their land as “nearly surrounded by water” and, at least in their early days, as an “isle of the sea” (Alma 22:32; 2 Nephi 10:20). (Isle anciently did not necessarily mean an area entirely isolated by water, but rather that the area so labeled could be reached via boat. See the dictionary in the Latter-day Saint edition of the King James Version of the Bible, s.v. “Isles.”)

5. The southern portion of the land southward, called the land of Nephi, was mostly elevated and mountainous (it included the headwaters of the principal river); the territory closer to the isthmus, called the land of Zarahemla, lay at an intermediate elevation.

6. From the south highlands (the land of Nephi), the river Sidon, the only river identified in the record, flowed northward through a drainage basin that constituted much of the land of Zarahemla.

7. The west sea coastal zone of the land southward was considered a “narrow strip,” apparently with such a small population that it played no significant historical role in Book of Mormon history, but the flatlands adjacent to the east sea coast of the land southward were more extensive.

8. Based chiefly on the travel times required to go between various points, we can confidently infer that the land southward was on the order of only a few hundred miles in length (northward–southward). At one point the land southward was plausibly about 200 miles wide. The distance across the narrowest part of the narrow neck, or isthmus, is left vague but might have been on the order of 100 miles.

9. The dimensions of the land northward are also unclear, but the implication is that the size of that area was of the same order of magnitude as the land southward.

10. Topographically the land northward consisted of lowlands (and drainage) toward the east sea, while westward the land was more elevated.

11. Near the east sea a relatively small area of hills was located no great distance northward from the narrow pass. The final battleground of the Jaredites (at “the hill Ramah”) and of the Nephites (at the same hill, called by them “the hill Cumorah”) was in this area.

12. The climate throughout the entire territory was relatively warm, at least as far as the text indicates. While we read of extreme heat, there is no hint of cold weather or snow.

13. The groups occupying most of this territory at times reached a civilized level of development and at one point constituted a population of more than two million. At their greatest the inhabitants occupied numerous cities with extensive public buildings, kept
many written records, fought in large-scale wars, and carried on extensive trade. In short, they were in a civilized condition.

All of these features (and many more) must characterize that part of the Americas where the events recorded in the Book of Mormon took place. It is not enough that just arbitrarily selected features from Mormon’s record be made to match up with today’s map.

2. Do all of the geographical facts sketched in the Nephite account agree with any actual location in the Americas? With more than one?

That the inhabitants of Book of Mormon lands knew and used formal writing systems and compiled numerous books (see Helaman 3:15) restricts the possible real-world location to Mesoamerica6 (central and southern Mexico and northern Central America). In Mesoamerica there were thousands of books in use at the time of the Spanish Conquest, but nowhere else in the Western Hemisphere is there convincing evidence for genuine writing being used on a consistent basis. In addition to writing, other social and cultural conditions required by the scriptural text to be present in the Nephite homeland area confirm Mesoamerica as the only plausible location of Book of Mormon lands.

3. What evidence is there that the original Book of Mormon peoples from the Mesoamerican area where the events related in the scripture took place spread to other parts of the Americas?

Archaeologists cannot precisely identify at this time any of their study materials as those of “Book of Mormon peoples.” But it is clear from their research that Mesoamerica was a center from which influence spread throughout certain portions of the Western Hemisphere. Latter-day Saints plausibly suppose that at least some Mesoamerican groups included “Nephites” or “Lamanites” and that Israelite genes could have spread out from the Mesoamerican core. For example, Amerindian groups in the southwestern United States area were heavily influenced by peoples in Mexico. Expert opinions differ on how persuasive the evidence is for the movement of actual gene bearers from the one area to the other. One scholar says, “Mesoamerican symbolism, ceremonialism, and ceremonial art swept through the Pueblo IV Anasazi [people of about A.D. 1300] like an early Ghost Dance religion.”8

Archaeologist Charles Di Peso pointed out that in the late pre-Spanish period at Casas Grandes, near the Arizona border, no fewer than four Mesoamerican religious complexes “—involving the worship of [the Central Mexican gods] Quetzalcóatl, Xiuhtecutli, Xipe, and Tláloc—were present.” It seems likely that

DNA scientists can be confident that all or part of Mesoamerica was where the Nephite and Lamanite peoples took on their historical identities and where their history recorded in the Book of Mormon was played out.

In addition to the cultural criteria, only in that area can all of the geographical requirements be met. For example, only in Mesoamerica are there lands of appropriate scale (that is, several hundreds, but not thousands, of miles in extent) that can appropriately be said to be “nearly surrounded by water” (Alma 22:32), as well as an isthmus bounded by Pacific and Atlantic waters.

Ingenious and impassioned arguments have been mustered in support of other theorized areas (from the Great Lakes to Peru or encompassing the entire hemisphere) as the scene for Nephite history. But every proposed geographical setting other than Mesoamerica fails to meet the criteria established by the text of Mormon’s account. So while it is theoretically possible that another area of the New World could meet the criteria to be the historical Nephite and Lamanite lands, it has proved impossible to identify any such territory. All proposed locations other than Mesoamerica suffer from fatal flaws.

DNA scientists can be confident that all or part of Mesoamerica was where the Nephite and Lamanite peoples took on their historical identities and where their history recorded in the Book of Mormon was played out, although their descendants might have spread into other New World zones and additional peoples might have migrated to Mesoamerica from other regions.
the very specific cultural information that was at the heart of those cults arrived with small Mesoamerican immigrant groups rather than by vague cultural seepage northward. In fact, “it appears that Hohokam and Mogollon cultural groups of the southern Southwest were influenced by Mesoamerican culture over several millennia, perhaps from 2000–3000 B.C. until 1300–1400 A.D.”9 A minor trickle of actual Mexican people moved northward bearing some of that cultural freight.

Is it possible that what archaeologists refer to as cultural “influences” spread by some indirect means, like pollen in the wind? The answer seems clear to us that in some circumstances human agents were necessary to convey such influences between distant points. Because the cultural items shared were so detailed and elaborate, it is most reasonable to suppose that actual persons carried specific knowledge from Mexico to Arizona or New Mexico.10 It is quite certain that those persons who acted as transfer agents frequently also passed their genes into the local pool at the destination.11 In any case, DNA scientists ought not to exclude the possibility that genetic carriers from Mesoamerica reached other areas.

Mesoamerican peoples and cultures were also generally influential on the Mississippi River valley and the southeastern United States. Maize spread there from Mesoamerica, and substantial knowledge of various cultural features also slowly spread into the area.12 Mesoamerican influence is seen especially in the Mississippian period, from around A.D. 900 to perhaps after A.D. 1500. From Georgia to Oklahoma and from Louisiana to Wisconsin, large temple mounds were erected, and ideas about rulership seem also to have been shared. Again, the tendency is for one wing of the archaeological community to consider that the similarities to Mexico do not demonstrate that any human biological connection was involved. Yet some of the concepts, implied or obvious, that connect the two areas strike others as sufficiently pointed to suggest specific imports, and probably people, going beyond vague “influence.” While it cannot be shown for sure that actual persons arrived in the Mississippian area from Mexico, DNA scientists may do well to consider that there possibly was limited Mesoamerican gene intermixture.

There is also evidence for long-lasting relationships between Mesoamerica and South America. Maize moved southward from its origin in western Mexico more than 6,000 years ago. Many cultural characteristics as well as traits of human biology quite certainly accompanied it. Some of the linkage was facilitated by travelers on raft or ship who moved back and forth along the Pacific Coast of the Americas for thousands of years.13 In a few cases, whole populations and their cultures seem to have made the move, such as the Kogi people.14 Later indications are that South America was the source of south-to-north influence (a few actual Incan buildings have been found in western Mexico).15 Dr. Marshall Newman has also presented morphological data from physical anthropology to argue that groups of people migrated to South America from Mesoamerica.16

Details on many of the indicated movements remain too vague or conjectural for complete clarity, but a significant number of specialists believe that both Mesoamerican concepts and people spread into some areas of South America, as into North America, long before the European conquest of the New World.17

4. How does this geographical picture square with traditions held among the Latter-day Saints about the scenes and peoples involved in Book of Mormon events?

We face a lack of detail in our historical sources as to what the earliest Latter-day Saints thought about Book of Mormon geography. Even so, there is little question that generally an obvious interpretation was in many readers’ minds. The “land southward” they
considered to be South America, the Isthmus of Panama was “the narrow neck,” and North America was thought to be the “land northward.” However, there is no evidence that in the early years any detailed thought was given to geography. Actually, the Book of Mormon was little referred to or used among church members in the first decades except as a confirming witness of the Bible. The writings or preaching of some of the best-informed church leaders of that day show that they did not read the text carefully on matters other than doctrine. For instance, no statement shows that anyone read the scripture closely enough to grasp the fact that the plates Mormon gave to Moroni were never buried in the hill of the final Nephite battle.

In 1842 a best-selling book by explorer John Lloyd Stephens was read by Joseph Smith and associates in Nauvoo. Their reading prompted an extensive review of the book in the Nauvo newspaper, the Times and Seasons.

“The Nephites . . . lived about the narrow neck of land, which now embraces Central America.”

—Times and Seasons, 1842

In the long run, nevertheless, the Stephens-stimulated view of Central America as the Book or Mormon heartland did not prevail among the Saints generally. The new implications were apparently overwhelmed by the inertia of the old belief in a whole-hemisphere geography. Orson Pratt, who was separated from the church during 1842 when the new thought on this topic was stirring, seems to have continued to believe in the original geographical theory. His views along those lines are reflected in the geographical footnotes that he added to the 1879 edition of the Book of Mormon. His opinions led several generations of readers of the scripture to assume with him that only the Nephites and Lamanites of Mormon’s account occupied the Americas, from the Arctic to the Antarctic, at least during Book of Mormon times. By the beginning of the 20th century, likely not more than a handful of readers of Mormon’s book questioned the interpretation that Lehi landed in Chile, that Panama was the narrow neck, and that the final battle of the Nephites took place in New York.

But the proportion of Saints who still accept that antiquated geography is irrelevant in light of the decisive information in the Book of Mormon. The text itself gives an unmistakable picture of a very restricted territory. And as President Joseph Fielding Smith said, “My words, and the teachings of any other member of the Church, high or low, if they do not square with the revelations, we need not accept them.”
5. What does the Nephite scripture tell us about the meanings of the terms Nephite and Lamanite?

At many points Mormon’s record states or clearly implies that the terms Nephite and Lamanite bore multiple meanings during the Book of Mormon period. At least six senses of the term Nephite can be identified: The term sometimes referred to (1) those belonging to the relatively small lineage consisting of direct descendants from Lehi’s son Nephi, (compare Mormon 1:5; 3 Nephi 5:20); (2) a larger “noble” group consisting of the descendants of the kings who succeeded Nephi, each of whom bore Nephi as a royal title (see Jacob 1:11); (3) those descended from, as well as all those who were ruled by, any of the monarchs bearing the title Nephi; (4) believers in a particular set of religious practices and ideas (compare Jacob 4:4–6; 4 Nephi 1:36–38); (5) participants in a particular cultural tradition (see 2 Nephi 5:6, 9–18); and (6) an ethnic or “racial” group (see Jacob 3:5, 8–9). Most of the same principles of naming applied to the Lamanites. One could be called by that term on several bases, such as direct descent (e.g., Alma 55:4, 8), political choice (e.g., Alma 54:24; Moroni 9:24), or a combination of political, religious, and other factors (e.g., 3 Nephi 2:12, 14–16; D&C 10:48). Note that people could choose to change their affiliation by adoption or formal transfer of allegiance (see, e.g., Mosiah 25:13; Alma 43:4; Alma 45:13–14).28

The broadest societal category in the Book of Mormon is Lamanite, treated in the prophecies as including the “remnant” seed of Laman, Lemuel, and Ishmael, to whom particular promises had been made. Yet those same promises were extended also to others besides direct descendants. The words of Lehi’s promise in 2 Nephi 1:5 refer not only to his elder sons’ literal biological descendants but also to “all those who should be led out of other countries by the hand of the Lord.” No one, Lehi added in pronouncing his blessings, would come into his promised land unless they were “brought by the hand of the Lord” (v. 6), so “this land [would be] consecrated unto him [everybody] whom he shall bring” (v. 7). This last expression refers not only to the eventual Gentile (European) settlers of the 16th through 21st centuries but also to those ancient peoples whom the Lord brought as well (see vv. 10–11).30 By the time Lehi pronounced his blessings, the vessel that brought Mulek from Jerusalem either had already landed or at least was en route to the promised land (see Omni 1:15–16), and some of that party’s descendants, called “the people of Zarahemla,” eventually became Nephites (Omni 1:19; Mosiah 25:13). Jaredite survivors also must have been around,31 and they too could have been blessed under the heading of “Lamanites” according to the prophetic ethnology.

Lehi saw from the beginning that Nephites and Lamanites were labels that would include a variety of groups that could have differing biological origins, cultures, and ethnic heritages. According to the title page of the Book of Mormon, the generic term Lamanite was applied by Moroni to all the amalgamated groups whose descendants would survive right down to Restoration times as “the [American] remnant of the house of Israel.” There is no indication anywhere in the Book of Mormon that “the Lamanites” were to be a genetically exclusive line descending only from the two oldest sons in Lehi’s family.

6. Have leaders of the Church of Jesus Christ of Latter-day Saints provided definitive answers to questions about the origin, composition, and geography of the Nephites and Lamanites and about the possibility that other peoples were present in the land?

Latter-day Saint ecclesiastical authorities have never claimed that revelation has settled where the lands of the Book of Mormon were located. Even the comments in the Times and Seasons in 1842 were put forward as tentative. Those challenging ideas ended with the convoluted caution, “We are not agoing [sic] to declare positively that the ruins of Quirigua [in Guatemala] are those of Zarahemla, but when the land and the stones, and the books tell the story so plain, we are of [the] opinion, that it would require more proof than the Jews could bring to prove the disciples stole the body of Jesus from the tomb, to prove that the ruins of the city in question, are not one of those referred to in the Book of Mormon. . . . It will not be a bad plan to compare Mr. Stephens’ ruined cities with those of the Book of Mormon.”32

Later statements have made clear that no definitive answer to issues of geography in the Book of Mormon has been pronounced or implied. George Q. Cannon, longtime counselor in the First Presidency, once stated: “The First Presidency have often been asked to prepare some suggestive map illustrative of Nephite geography, but have never consented to do so. . . . The reason is, that without further information
they are not prepared even to suggest [a map].”

Church president Joseph F. Smith affirmed President Cannon’s reticence. Regarding a proposed map of Book of Mormon sites, he “declined to officially approve of the map, saying that the Lord had not yet revealed it.”

John A. Widtsoe, not only an apostle but a Harvard-educated former president of two universities, observed in 1950, “As far as can be learned, the Prophet Joseph Smith, translator of the book, did not say where, on the American continent, Book of Mormon activities occurred. Perhaps he did not know.”

In regard to the origins and ethnic composition of the ancient inhabitants of America in relation to the Book of Mormon, opinions among the leaders have varied. Again no definitive or “orthodox” viewpoint has claimed to provide “the” answer.

Joseph Smith himself laid the foundation for the variances in interpretation. While he served as the responsible editor of the Times and Seasons in Nauvoo, the paper printed another excerpt from Stephens’s book that quoted “a goodly traditionary account” from Guatemala. Descendants of the former native rulers there (“Toltec kings of the Quiche and Cakchiquel Indians”) claimed that they had “descended from the house of Israel,” their line having split off from Moses’ party of Israelites after the escape from Egypt. When those Toltec ancestors made their way to Mexico, they “found it already inhabited by people of different nations.”

Hugh Nibley observed, “Whether such a migration ever took place or not, it is significant that the Prophet was not reluctant to recognize the possibility of other migrations than those mentioned in the Book of Mormon.” He continued, “There is not a word in the Book of Mormon to prevent the coming to this hemisphere of any number of people from any part of the world at any time, provided only that they come with the direction of the Lord; and even this requirement must not be too strictly interpreted.”

Have church leaders made clear whether or not people other than those directly noticed in the Book of Mormon were included among the “native” population of the Americas? Some have assumed that only people from the three immigrant parties mentioned in the book (Jaredites, Lehites, and Mulekites) were ancestors of today’s Native Americans.

“There is not a word in the Book of Mormon to prevent the coming to this hemisphere of any number of people from any part of the world at any time, provided only that they come with the direction of the Lord; and even this requirement must not be too strictly interpreted.”

—Hugh Nibley
the American Indians.” In short, some of the leading brethren have long believed that peoples not mentioned in the Book of Mormon lived or might have lived in ancient America, and they have assumed that the idea need not trouble believers in the Book of Mormon. Obviously there is no accepted or orthodox church position that only Book of Mormon peoples were present in the land. That being so, there is no reason why DNA analysts need to be constrained by the idea that all American Indians are Lamanites in a strict genetic sense.

7. Is it unrealistic to think ancient people could have sailed across the ocean to or from America?

This classic question used to be answered by scholars with the a priori response, “Of course it is unrealistic!” Nearly all who gave that answer were landlubbers. Their response has reflected their own psychology rather than real-world experience. One scholar has referred to this attitude as “intellectual mal de mer” when archaeologists look seaward. Others have called this isolationist opinion “thalassophobia,” or fear of the sea. Old hands at small-boat sailing have never voiced such qualms. Experience has shown that while some voyagers may indeed be lost at sea, there is still a reasonable chance for a successful passage along certain routes. For instance, Hannes Lindemann, who made three solo voyages from West Africa to the West Indies, said that he and fellow sailors scoff at nonsailors’ view of the “dangers” at sea. He felt that it takes “a damn fool to sink a boat on the high seas.”

Two phenomena have changed attitudes in this regard over the past 50 years. First, many hundreds of persons have crossed the oceans in or on all sorts of craft—log rafts, rubber boats, replicas of Polynesian canoes, rowboats, and, more recently, personal watercraft and sailboards, not to mention numerous kinds of small boats. A second reason for the change in atmosphere, especially among scholars, has been recent recognition that ancient (or, as critics were wont to say, “primitive”) sailors ages ago were already making remarkable voyages. We now know that the first settlers of Australia crossed open sea from the north as early as 60,000 years ago, while others reached islands east and north of New Guinea nearly 30,000 years ago. These observations have tended to pull the teeth out of old objections about ancient nautical technology being too crude to allow sailing out of sight of land.

Nowadays it is acceptable for an established archaeologist like E. James Dixon to assume that navigators would have been able to come from Asia to America around the North Pacific by “perhaps 13,000 years ago.” These changing opinions do not imply that the Jaredite or Lehite voyages would have been easy, but at least those trips as described in the Book of Mormon now look quite feasible.

8. Does the Nephite record allow or indicate the presence of other peoples in America who are not specifically named?

Several lines of evidence in the Book of Mormon point directly to the presence of other peoples in the land from the very beginning of Nephite colonization. One of the most telling passages in the record of Nephi relates the confrontation of Sherem and
Jacob. By the time Sherem showed up in the first Nephite settlement, the maximum population that could have resulted from the most rapid conceivable natural descent from Nephi1 and his fellow settlers would not have exceeded a few dozen adults. Yet Sherem had never met Jacob, the chief Nephite priest (see Jacob 7:1–26), and he had come from some other settlement. Questions about population actually arise still earlier in the story. We find Nephi setting out to build a temple when his adult male relatives in the little colony in the land of Nephi apparently would have numbered only three: Nephi, Sam, and Zoram (plus Jacob and Joseph if they were old enough). So few men could not have put up much of a temple. Furthermore, what kind of wars could the group have fought against the Lamanites with the minuscule “army” that the handful of immigrants could have mustered at the end of 25 years in the land? (see 2 Nephi 5:34). Without increases in the early population of the two factions that can only be explained by the accretion of people from a resident population, reference to “wars” could not be a significant reality. We who are confident of the historicity of the Book of Mormon are assured from these incidents and other textual references that substantial numbers of local “native” residents had joined the immigrant parties. If we had the plates of Nephi that reported the more historical part of their story, perhaps we would find on them explicit information about such contacts with resident populations.

Other statements in the Book of Mormon also indicate that the writers were familiar with, rather than surprised by, the idea of non-Israelites living among the Nephites. The only example we will cite...
is when Alma visited the city of Ammonihah and Amulek introduced himself with the words, “I am a Nephite” (Alma 8:20). Since the city was nominally under Nephite rule (see Alma 8:11–12, 24) and was a part of the land of Zarahemla at the time, Amulek’s statement seems nonsensical, unless many, perhaps most, of the people in the land of Ammonihah did not consider themselves to be Nephites, by whatever criteria.

The familiarity of Lehi’s people with the words of Old Testament prophets should have led them to expect to be placed in their new land in the midst of other people. The prophets in old Israel had often announced that the tribes of Israel would be “scattered among all people” (Deuteronomy 28:64), would be “removed into all the kingdoms of the earth” (Jeremiah 29:18), and would become “wanderers among the nations” (Hosea 9:17). Further, “the Lord shall scatter you among the nations, and ye shall be left few in number among the heathen, whither the Lord shall lead you” (Deuteronomy 4:27). These prophecies made plain that the whole house of Israel was subject to being scattered among non-Israelite peoples who would be more numerous than they. The people of Lehi were explicitly told that they would suffer this scattering:

Yea, even my father spake much concerning the Gentiles, and also concerning the house of Israel, that they should be compared like unto an olive tree, whose branches should be broken off and should be scattered upon all the face of the earth. Wherefore, he said it must needs be that we should be led with one accord into the land of promise, unto the fulfilling of the word of the Lord, that we should be scattered. (1 Nephi 10:12–13)

The allegory of the olive tree spelled their fate out even more plainly. Branches broken off the tame tree, which represented historical Israel (see Jacob 5:3), were to be grafted onto the roots of “wild” olive trees, meaning non-Israelite groups. That is, there was to be a demographic union between two groups, “young and tender branches” from the original tree, Israel, represented as being grafted onto wild rootstock in various parts of the vineyard or earth (see Jacob 5:8–9). Jacob 5:25 and 43 clearly speak of Lehi’s people being represented by such a broken-off branch. That branch was to be planted in “the choicest spot” of the vineyard. In that prime location, the Lord had already cut down “that which cumbered this spot of ground,” clearly a reference to the elimination of the Jaredites. In addition, the statement that one part of the new hybrid tree brought forth good fruit while the other portion “brought forth wild fruit” is an obvious reference to the Nephites and the Lamanites respectively (v. 45).

So the Lehite “tree” of the allegory was constituted of a geographically transplanted population from the original Israelite promised land “grafted” onto a wild root—joined with a non-Israelite people. (Note that the Lord considered the new root to be “good” despite its being “wild,” v. 48). This allegorical description requires that a non-Israelite “root”—“other peoples” in terms of this paper—already be present on the scene where the “young and tender branch,” Lehi’s group, would be amalgamated with them.

DNA analysts should expect that the immigrants, Lehi’s party and Mulek’s group too, would immediately begin to incorporate and hybridize with New World “native” populations.

9. What do Mesoamerican native traditions suggest about immigrant groups arriving by sea?

Traditions are not, of course, to be believed as completely historical reports, but when the core of a tradition is reported numerous times and in disparate sources, it is likely that there was a factual basis behind it. Mesoamerican traditions that report ancient arrivals by sea are found recorded in early...
Spanish sources. Most of them were of pre-Columbian vintage, not simply words put in the mouths of natives by Spanish recorders. And many are supported by traditions from other areas. Their consistency and distribution make it plausible that there were at least two and possibly three or more “families” of such stories of an arrival of ancestors from across the ocean. We have space here only to sample this genre.

Fernando de Alva Ixtlilxóchitl was a descendant of the rulers of the city of Texcoco, nominal co-rulers with the Aztec kings of the powerful alliance that dominated northern Mesoamerica in the decades preceding A.D. 1521. Don Fernando was Spanish educated. His Obras Históricas was compiled in the first quarter of the 17th century using extensive records to which his noble ancestry gave him access. At one point he reported, “It is the common and general opinion of all the natives of all this Chichimec land, which now is called New Spain . . . that their ancestors came from western parts . . . as appears in their history; their first king was called Chichimecatl, who was the one who brought them to this New World . . . and they were those of the division of Babylon.” His mention of “Babylon” may, of course, be his personal interpolation, but it seems apparent that he was interpreting the tradition to refer to a transpacific voyage.

The chief ruler at the great Aztec center, Tenochtitlán, Moctezuma Xocoyotzin (popularly known as Montezuma), greeted Hernán Cortés with these words:

For a long time and by means of writings, we have possessed a knowledge, transmitted from our ancestors, that neither I nor any of us who inhabit this land are of native origin. We are foreigners and came here from very remote parts. We possess information that our lineage was led to this land by a lord to whom we all owed [allegiance]. He afterward left this for his native country.

. . . But we have ever believed that his descendants would surely come here to subjugate this land and us who are, by rights, their vassals.

Because of what you say concerning the region whence you came, which is where the sun rises . . . we believe and hold as certain that he [the Spanish king] must be our rightful [natural] lord.

Fray Bernardino de Sahagún gathered a huge collection of materials from the best native Mexican informants available to him in the middle of the 16th century. One thing he reported being told was this:

Concerning the origin of this people, the account which the old people give is that they came by sea from toward the north [from the direction of Florida, he adds], and it is certain that they came in some vessels of wood, but it is not known how they were built; but it is conjectured by one report which there is among all these natives, that they came out of seven caves and that these seven caves are the seven ships or galleys in which the first settlers of this land came . . . they came along the coast and disembarked at the Port of Pánuco, which they call Panco [near Tampico, Veracruz], which means, place where those who crossed the water arrived. These people came looking for a terrestrial paradise.

Still today, reported Lorenzo Ochoa in 1979, in certain places near Tampico, traditions exist parallelizing Sahagún’s to the effect that ancestors arrived by sea navigating in “turtle shells.” A native document from 16th-century Guatemala, Titulos de los Señores de Totonicapán, said that their ancestors “came from the other part of the ocean, from where the sun rises, a place called Pa Tulán, Pa Civán.” Those whose signatures attested this 16th-century document further noted, “[W]e have written that which by tradition our ancestors told us, who came from the other part of the sea, from Civán-Tulán, bordering on Babylonia.” At least that was their geographical interpretation of the tradition as of 1554.

Other traditional accounts could be cited, but they are generally parallel to those above. The conventional interpretation of these traditions by scholars has been that they either stem from remembrance of crossings over local waters or are notions picked up by Amerindians from the Christian fathers and the Bible. That might be so in some cases, yet because of the widespread occurrence of the traditions, we consider that two or more tales of the arrival of ancestors from across the ocean were definitely maintained in pre-Columbian times among Mesoamerican peoples. If so, then any attempt to interpret the physical ancestry of a people by DNA analysis will need to be open to reconciling the data from the conventional
interpretations of Amerindian genetics with these traditions that point to transoceanic intruders.

10. What languages were spoken in the Western Hemisphere? Is it known that Hebrew was in use in ancient America? What do these facts mean for the Book of Mormon?

The number of Native American languages spoken at the time European conquerors or settlers arrived is not known for sure, but a current best estimate is around 1,000 from Alaska to Argentina. Methods of classifying those into larger groupings are varied and inconsistent, but hemisphere-wide the number of major groupings (whether called “families,” “stocks,” etc.) is on the order of 80. In addition, there were about 80 “isolates,” that is, single tongues that have not been convincingly connected to any other language or grouping.

Mesoamerican languages fit into perhaps 14 families, with upwards of 200 separate tongues having once existed in the area. (A family is a group of tongues believed to have descended from a common ancestral language.) Indications are strong that there was considerable linguistic differentiation in Mesoamerica as early as 1500 B.C. Latter-day Saint students of the Book of Mormon should understand that long prior to Lehi’s day, Mesoamerica was already linguistically complex. Moreover, many archaeological sites were occupied continuously, or so it appears, for thousands of years without clear evidence in the material remains of any replacement of the culture of the inhabitants. That continuity suggests, although it does not prove, that many of those people probably did not change their tongues.

All this means that the old supposition by some Latter-day Saints that the Hebrew tongue used by Lehi’s and Mulek’s immigrant parties became foundational for all ancient American languages is impossible.

When we examine the social and cultural implications of what the Book of Mormon record tells us, we discover that it cannot possibly be a “history of the American Indians.” Mormon’s book was never meant to serve as a history of an entire territory but is what has been termed a “lineage history.” It relates certain events and interpretations of those events that relate to a fairly small number of people, chiefly the descendants of Nephi. These serve the same purpose as most of the historical books of the Bible, like Genesis and Exodus. Those records focus on stories about Abraham and those of his descendants who became the founders of the house of Israel. For example, the Old Testament source only briefly mentions Ishmael and his clan, let alone more distant ethnic entities like the Canaanites, and then only as far as the events involving those outsiders impinged on the key descent line. In short, a lineage history is a partial record of historical events, emphasizing what happened to one group of people, phrased in the recorders’ ethnocentric terms. The lineage histories of other groups on the scene, if they were kept, would report different versions of what was going on. Knowing that the Nephite record is of this limited sort, we can appreciate why, for example, their
story gives a total of only 100 words or so to the “people of Zarahemla,” although that group was much more numerous than ethnic Nephites (see Mosiah 25:1). Such narrowly told accounts were a very common form of “history” in many parts of the ancient world, including, as we could expect, among native peoples of Mesoamerica.

The upshot is that we 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 (think of the Norman conquerors of England, whose French language did not last long on the island). So it makes sense when Moroni reports, after nearly 1,000 years of his people’s history, that by then “no other people knoweth our language” (Moroni 9:34).

Still, we may find remnants of Hebrew in Mesoamerican languages when we look carefully, just as English vocabulary reveals traces of Norman French. Little looking has yet been done by qualified scholars, yet the slim efforts have turned up interesting results. The prominent Mexican linguist Maurice Swadesh had student P. Agrinier search Zapotec and related languages in south-central Mexico for Hebrew words. They identified a significant number of Hebrew parallels, which Robert F. Smith later more than doubled. Swadesh said of that project, “I was surprised at the number and closeness of the parallels” between the languages compared.

More pointedly, linguist Brian Stubbs has identified more than one thousand Hebrew and/or Arabic forms in tongues of the Uto-Aztec family, which stretches from central Mexico to Utah. Mary LeCron Foster, a mature linguist long at the University of California, independently concluded that “Uto-Aztecan proves to derive either from Proto-Indo-European . . . or even from pre-IE ancestors,” while “Quechua [the language of the Incas of Peru] shows “extensive borrowing from a Semitic language, seemingly Arabic.” Much more work must be done to convince the majority of linguists of the reality of Semitic language remnants appearing in Mesoamerican (and perhaps other native American) languages, but the evidence so far is promising and new studies are under way.

Now, if Semitic languages penetrated Mesoamerican societies, might we not expect evidence that so did Hebrew or Arab genes? After more than a cursory effort is devoted to studying the question, we may see more concrete confirmation. We note, as a methodological parallel, that the implications of another example of an Asian language intrusion into America has been equally ignored by most linguistic professionals, not to mention geneticists. Otto J. Von Sadovszky has demonstrated from remarkably extensive evidence that a series of Amerindian languages in north-central California are directly related to the Ugrian family of tongues of western Siberia (of which Finnish is a relative). He has compiled more than 10,000 word relationships between the two areas (probably as of around 500 B.C.) as well as a large number of parallel customs and beliefs. It is obvious that DNA testing of the tribes concerned ought to demonstrate genetic links, but nobody has yet bothered to carry out the study. Soon the Mesoamerican linguistic links may be compelling enough to demand DNA testing of the implied relationship.

11. Has research in hard science supported the claim that a variety of Old World peoples came to live in the Americas?

Most researchers in the life sciences, like their colleagues in archaeology and geography, typically claim that the two hemispheres, commonly called the Old World and the New World, effectively had distinct histories. One of the key arguments against the proposition that people anciently settled the Americas from Eurasia, Oceania, or Africa has been the assertion by biologists throughout the 20th century that no cultivated plants (of any consequence, at least) were shared on both sides of the Atlantic or Pacific Oceans before Columbus’s day.

This conservative view has been progressively weakening for years, although defended by presti-
igious natural scientists. However, in 2002 a paper was presented (and now is in press) that tackled the issue on an unprecedented scale. New evidence was used to demonstrate beyond question that extensive cross-ocean voyaging has been taking place for at least the last 8,000 years. The study documents that more than 80 species of plants had crossed all or part of the ocean to or from the Americas before A.D. 1500. The list includes amaranth grains, the cashew nut, pineapple, the peanut, hashish, tobacco, coca, two species of chili pepper, the kapok tree, various squashes and pumpkin, at least six species of cotton, bananas, the prickly pear, the guava, several grasses and (human-dependent) weeds, corn, and two kinds of marigolds. For another 29 species, significant evidence invites more research on their transoceanic status, and for 34 more there is enough evidence to recommend further study.

Decisive evidence consists, for example, of clear representations of a plant in ancient art. Carl L. Johannessen (and other investigators) had earlier found and photographed hundreds of images of maize ears (maize is, of course, an American native plant) held in the hands of sacred beings in scenes carved on the walls of temples of medieval age in southern India. More art now shows corn that dates to B.C. times, while archaeological excavation (another form of decisive documentation) on the island of Timor in Indonesia places the crop there before 2500 B.C. In other Indian art we see sunflowers, the annona fruit, cashew nuts, and other plants of American origin. In fact, at least two dozen American species were in India before Columbus, which means that a great deal of two-way sailing must have taken place.

The evidence on plant sharing across the ocean has been buttressed by data regarding fauna. The opinion has prevailed generally among the experts that America anciently was a virtual diseaseless paradise. Nevertheless, John L. Sorenson and Carl L. Johannessen have shown that a surprising number of disease organisms were present in the New World, as much as they were in the Old World. The key point, however, is that since organisms do not arise independently in different parts of the earth, it is necessary to determine how the two hemispheres could have shared so many “bugs.” The causes of 14 ailments have been conclusively found in both hemispheres—two species of hookworms, the roundworm, the tuberculosis bacteria, lice, ringworm, a leukemia virus, and others. Furthermore, several larger faunal species also crossed the ocean. For instance, the turkey, that thoroughly American fowl, appears in art in Europe by the 13th century A.D., and its bones have turned up in Hungarian and Swiss ruins of that time.

**The idea of some influential connections between cultures in Asia and in America is increasingly being accepted by some scholars who once were adamantly opposed to the idea.**

Finding a name of a plant in ancient historical and literary texts also confirms the early presence of that plant. For India a unique linguistic situation contributes to the significance of some plant references. The classical religious texts of India were written in the Sanskrit language. Sanskrit was in use as an active language until no later than about A.D. 1000. After that date, the language served like Latin in Europe, as a sacred “dead” tongue that was no longer adding new words and that one learned only to study the ancient sacred texts. So when a Sanskrit dictionary of known texts uses a name such as sandhyā-rāga (for the American native flower plant that we today call the “four o’clock”), this can only mean that the word and the plant were present in India many centuries before the time in the 1500s when the first European sailors could have brought either the plant or a name from America. Also, since a name for another New World plant, the sweet potato, was written in Chinese characters in a classic historical document, this guarantees that the plant was being grown in Asia many centuries ago.

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In regard to all the species mentioned above, only voyages by humans provide a suitable explanation. Those trips—and floral and faunal data—point to the transoceanic passage of perhaps hundreds of boats between 6000 B.C. and A.D. 1500. Voyages were certainly not routine, but neither were they unknown. These data strongly imply that humans from numerous Old World areas reached the New World.
Until DNA analysis finds evidence of the Old World visitors and migrants who arrived in those boats, molecular biologists ought to consider their picture incomplete.

12. Does evidence from archaeology and cultural studies support the idea that there were intrusions by Old World groups?

This is a vast topic, impossible even to summarize here. Only a few illustrative references to relevant material can be examined in the space available here.

One kind of information concerns cultural complexes and the populations that brought them that certainly arrived from across the ocean. Some archaeologists finesse the issue by insisting that only “concrete archaeological evidence” for a cultural intrusion will satisfy them. This spurious response is well illustrated by the case of the Ugrian-language enclave in central California mentioned above; the supporting linguistic material is vast and highly “concrete,” though in a nonmaterial sense. No archaeologist has yet assessed this evident connection between California and western Siberia on the basis of material remains. Contradictorily, in the case of the settling of the island of Madagascar off the east coast of Africa, the dominant language is so obviously Austronesian (related to Malayo-Polynesian) that no scholar questions that the people came from Indonesia, despite the fact that no artifact from there has ever been found on Madagascar.

Another example within the Americas illustrates the same point. Julian Granberry established that the Timucuan language of Florida, and the people speaking it, originated in the Amazon area. He infers that they reached Florida by boat from western Venezuela at approximately 2000–1500 B.C. without any stopovers en route, a trip on the order of 1,000 miles long. These relationships are evidenced beyond question by linguistics but not by any archaeological or ethnomological facts, let alone by DNA evidence.

A similar example from Ecuador is provided by the Bahia culture, dated around the beginning of the Christian era. Excavation provided the first evidence for patently East Asiatic features that characterize this complex (ceramic model houses, neck rests in lieu of pillows, rectanguloid pottery net weights, golf-tee-shaped earlobe decorations, symmetrically graduated panpipes, seated figurines that look very much like Buddha, and use of the coolie yoke for carrying burdens), but those Asiatic links are now little mentioned. There is no question that Asians could have reached South America, since studies have shown that balsa rafts manufactured in Ecuador are essentially identical to log rafts of China and Vietnam (despite the label rafts, these conveyances were virtual ships). They were used in the seas off China from at least the fifth century B.C. Bahia pottery has been found in the Galápagos Islands, 700 miles off the coast of Ecuador. Despite these facts, many archaeologists ignore the Bahia intrusion, or at least its significance as a mechanism for the arrival of Asians.

Moreover, it is entirely possible that some transoceanic migrant groups adapted successfully to their new American homes for a while but in the long run failed to survive. James Dixon notes the case of the Norse settlers in Greenland and their North American Vinland, “a clearly documented case of a major and long-lived transoceanic colonization of the Americas that ultimately failed.” According to Dixon, events since the Norse went extinct have obscured the scientific record so that not only is the archaeological evidence for their presence very limited but there are no recognized survivors in North America. He concludes that “the original Norse colonization [there] cannot be demonstrated ever to have happened.”

As in the case of the Nephites, only in surviving historical accounts can one “prove” that Norse people lived in America.

The idea of some influential connections between cultures in Asia and in America is increasingly being accepted by some scholars who once were adamantly opposed to the idea. Sir Joseph Needham, one of the 20th century’s greatest scholars, with colleagues Wang Ling and Lu Gwei-Djen, first published extensive data on the contacts question in their masterful series entitled Science and Civilisation in China. In 1985 Needham and Lu put out a concise but elegantly argued statement of the case for a voyaging connection. Since then it has been more difficult for thoughtful scientists to ignore the issue. Even conservative scholars have begun to accept a limited version of the view that accepts transoceanic voyaging. For instance, Michael D. Coe, once an adamant opponent of voyaging from Asia, was quoted in 1996 as being impressed with the many resemblances between “mental systems known from Bali in Indonesia and Mesoamerica.” He now thinks that some of the parallels were “almost identical on
both sides of the Pacific.” Coe acknowledges, however, that his thinking on the point is not orthodox: “Most anthropologists are so fuddy-duddy. They’re not willing to let their minds roam ahead, speculate.”88 If the “fuddy-duddy” no-voyaging paradigm does break down, it will mean even more questions to be faced by DNA analysis because exotic populations can be expected to be involved in the hitherto monolithic study of “Amerindian” genetics.

A remarkable confirmation that such a shipborne link once existed that tied the central Old World civilizations to ancient America across the Atlantic (as the story of Mulek implies) comes from a Greek merchant ship that sank at Kyrenia, Cyprus, in the fourth century B.C. When examined by underwater archaeologists, it was found to have utilized leaves of the agave plant as caulking.89 That plant is considered by biologists to be exclusively Mexican, so there are no explanations for its presence and use in the Kyrenia vessel except that the ship had itself reached the New World, where it was recaulked before returning to the Mediterranean, or else that living agave plants had been transported to some Old World area where the harvested leaves could be used in routine caulking of ships there.

On the basis of research summarized above, there is no longer any real question that cultural, and presumably human biological, connections existed between Eurasia and Mesoamerica many centuries ago. What remains to be done to round out the picture is to carry out specific research aimed at determining the details of those connections. Future DNA study is going to have to consider these facts in generating and testing hypotheses. If molecular biology fails to find a place in its models to handle the historical contacts attested by such cultural data, that failure will cast doubt on the adequacy of the biological studies.

13. Have races or ethnically distinct populations that exhibit non-Amerindian characteristics been revealed in ancient Mesoamerican art?

For us the answer to this question is unequivocally “Yes!” Of course, there is no demonstrated direct connection between most features of human beings’ external appearance and specific DNA; nevertheless, if we see striking differences in appearance (phenotype) of a population, we can plausibly expect differences in genetic makeup (genotype).

The concept that all American Indians formed a monolithic “race” whose ancestors came from northern Asia was made a part of early 20th-century physical anthropology by one of the field’s first leaders, Ales Hrdlicka. He claimed that if “some members of the Asiatic groups and the average [sic] American Indians were to be transplanted and body and hair dressed like those of the other tribe, they could not possibly be distinguished physically by an observer.”90 That extreme view is no longer held, yet intellectual inertia seems to prevent many anthropologists from acknowledging that substantial variation exists among so-called Native Americans.

Nowhere is this variability shown more clearly than in the modeled clay figurines and other repre-
sentations of humans in art. They show up in considerable numbers in Mesoamerica and in lesser numbers among human effigies in Peru. Heads and skin shades that would be at home on all of the different continents are seen. Samples of these heads are reproduced with this article. Others are shown in various books. Specific ethnicities are obvious in some of the representations: African blacks, Southeast Asians, Chinese, perhaps Koreans, possibly Japanese, and Mediterranean people are commonly encountered. Of special interest is a whole class of “Semitic” or “Jewish” or “Uncle Sam” faces, so called by some archaeologists or art historians because of the large aquiline noses and beards. This type of face also occurs not only in clay but also on stone sculptures. At the very least, the presence of out-of-place images challenge Hrdlicka’s old oversimplification. Some scholars have claimed that these “racially” distinctive heads are “stylized” versions of “normal” or majority Mesoamerican figurines, but anyone can see that most of the representations are not stylized in the least but are individualized portraits. If even a part of the anomalous figures are authentically ancient and accurate portrayals of living people, we have to infer that DNA research has some major discoveries yet to make to account for them.

Another physiological anomaly confirms what we have just discussed. Students of ancient voyaging have commented on the presence of beards on male figures in Mesoamerican art. A preliminary study of the topic done a few years ago by Kirk Magleby yielded provocative results. Inasmuch as nearly all Amerindians seem predisposed to producing only meager beards, it is reasonable to take that condition as the genetic norm. So when fulsome whiskers and mustaches are found on ancient figures, a genetic explanation is called for. In Magleby’s research on hundreds of bearded representations, the frequency of beards proved highest in objects of Pre-Classic age (before A.D. 300), when the proportion of abundant beards was also highest. Beardedness was also found to decrease as one moved outward from central Mesoamerica. Some critics claim that there is no reason to think that such bearded people represented descendants of Old World immigrants. Nevertheless, the world center of the growth of heavy beards is the Near East. Furthermore, critics also point out that some of the beards seen in Mesoamerican art appear to be artificial. We agree that is possible (for example, artificial beards were donned by Egyptian pharaohs in an investiture rite). But then we wonder where the preference for a full beard would have come from. Obviously, the notion came from persons with beards. Or why would sparsely bearded native Amerindians have adopted artificial beards to be worn by their societies’ leaders? Overall, the scenario that makes most sense is that Old World immigrants to Mesoamerica from the Eurasian homeland where heavy beards appear in art set a standard of elite appearance that was watered down as the responsible genes were submerged in a pool of Mongoloid DNA. At the least, beardedness seems to be a topic that deserves consideration in DNA studies of Amerindians.

14. What are some limits of DNA research in clarifying historical and genealogical relationships among the “native” inhabitants of the Americas?

It is in the nature of all scientific research that one cannot predict the course of its development nor the value of its results. Still there is reason to think that some scientists and also consumers of information from DNA studies have unrealistic interpretations of what such studies have accomplished and what they may yet do. A recent article by Peter N. Jones rings a loud alarm bell for everyone concerned with American Indian DNA studies by pointing out some of the flaws in methods and logic imposed on the field to date.

The basis of this type of research so far has been specimens taken from very small samples of a total population. Typically the published DNA characteristics for many American Indian tribes have been calculated on specimens taken from only a few dozen, or at most a couple of hundred, individuals. (Jones points out that most DNA investigators do not even know for sure whether the specimens of blood used in their research actually came from Indians or not.) And quite aside from the quality of the specimens, the analytical models used are only a tiny sample of the methods that ultimately would be significant. We have, as it were, a net of very coarse weave that lets most of the fish escape. Recent cautionary writings teach us the highly tentative nature of the results so far from DNA research on the history of American Indians.

One set of concerns stems from the fact that, as a person’s genealogical lines go back in time, the number of his or her ancestors obviously multiplies. Within a few centuries all of us have thousands of forebears. Ultimately or theoretically our foreparents
could number in the millions. Yet there is a paradox here. Beyond a certain point in time the theoretical number of one’s ancestors exceeds the number of persons who were actually alive then! The truth is that our genealogical lines eventually converge on a restricted set of people. Joseph Chang, a statistician at Yale, in a 1999 article showed that there is a high probability that every European alive today shares at least one common ancestor who lived only about 600 years ago. Science writer Steve Olson, who has explained this principle in greater detail in his superlative new book, *Mapping Human History*, observes:

> The forces of genetic mixing are so powerful that everyone in the world has [for example] Jewish ancestors, though the amount of DNA from those ancestors in a given individual may be small. In fact, everyone on earth is by now a descendant of Abraham, Moses, and Aaron—if indeed they existed.

In parallel, if one assumes that Lehi was a real figure, Chang’s or Olson’s model would argue that all Amerindians today are likely to be his descendants. But would present-day DNA research indicate anything of the kind? Actually, it would be virtually impossible via today’s DNA procedures to document such slender genealogical links as Chang and Olson are talking about.

Other scientists have noted that mtDNA represents a small, though essential, piece of our whole genome. . . . However, our genetic ancestry is much broader, because we know that a large fraction of any population many generations ago is included in our genealogical tree. . . . Mitochondrial genes contain information largely about energy production. But most of the information that characterizes us as human beings resides in our so-called nuclear genes, which constitute more than 99.99 per cent of the human genome. . . . If we could follow all the branches through which we have inherited our genes, we would probably find that all those people included in our genealogical tree have contributed—maybe in an extremely diluted way—to our genetic inheritance.

While contemporary studies of human DNA and human populations primarily utilize mitochondrial DNA and Y chromosome DNA, the genetic information from these tests represents less than .01 percent of the genetic information passed down from our numerous ancestors. It is possible that, in the future, scientific methods may conceivably expand in order to tap into some of that 99.99 percent of the genetic information denied to us by today’s limited tools, but such studies may never be able to reveal the full diversity of our ancestry.

> The next time you hear someone boasting of being descended from royalty, take heart: There is a very good probability that you have noble ancestors too. The rapid mixing of genealogical branches, within only a few tens of generations, almost guarantees it. The real doubt is how much “royal blood” your friend (or you) still carry in your genes. Genealogy does not mean genes. And how similar we are genetically remains an issue of current research.

Neither can DNA scientists reliably tell whether Native Americans have links to Israelites. We may never know.
The past decade has seen a revolution in the way in which biologists collect data and proceed with their research. This revolution has come about by technological innovations that allow scientists to efficiently sequence DNA for a wide range of organisms, resulting in vast quantities of genetic data from a diverse array of creatures. From estimating the genealogical relationships among fleas to understanding the population genetics of crayfish, DNA sequence information can provide clues to the past and allow scientists to test very specific hypotheses in a way that was unapproachable even a few years ago. The announced completion of the Human Genome Project is not really a completion of DNA work at all, but simply one step on the road toward a better understanding of ourselves as biological organisms, our shared genetic history as humans, and the genetic history we share with all living organisms. Work is under way in many fields to generate DNA sequences from a wide variety of organisms for a spectrum of genes to address an almost dizzying array of scientific and medical questions. As it stands, there is possibly no other data source that holds more potential for biological inquiry than DNA sequence data, and this information is currently one of the most powerful tools in the arsenal of scientists.

However, as with all scientific tools, there are bounds and limits to how this tool is applied and what questions it can adequately address. This is because DNA sequence information is useful for only certain classes of scientific questions that need to be properly formulated and carefully evaluated before the validity of the results can be accepted. There are many interesting questions for which DNA sequence data is the most appropriate data source at hand, as current scientific investigations attest. But there are some classes of problems for which DNA may provide only tangential insight, and some very interesting biological questions for which DNA is altogether an inappropriate source of information. Moreover, there are certain biological problems that scientists would love to answer but that are complicated and resist solution, even given DNA information. Within the scientific community, DNA-based research is carefully scrutinized to be certain that underlying assumptions have been tested, that data have been correctly collected and analyzed, and that the interpretation of the results are kept within the framework of the current theory or methodology. DNA research is only as good as the hypotheses formulated, data collected, and analyses employed, and the pronouncement that a certain conclusion was based on DNA evidence does not ipso facto mean that the research is based on solid science or that the conclusion is correct. The National Science Foundation rejects literally hundreds of DNA-based research proposals every year because they are lacking in some way in scientific design. The inclusion of a DNA component does not necessarily guarantee that the study was properly designed or executed.

Recently, some persons have announced that modern DNA research has conclusively proved that the Book of Mormon is false and that Joseph Smith was a fraud.1 This conclusion is based on the argument that the Book of Mormon makes specific predictions about the genetic structure of the descendants of the Lamanites and that these descendants should be readily identifiable today. These critics argue that when the DNA is put to the test, these descendants lack the distinctive genetic signature that the critics claim the Book of Mormon predicts. They
bolster their arguments by appealing to DNA research, claim that their conclusions are thoroughly scientific, and pronounce that the Church of Jesus Christ of Latter-day Saints must now go through a Galileo event, in reference to the 17th-century astronomer who discovered that the sun, not the earth, was the center of the solar system, much to the consternation of the prevailing religious view. They have trumpeted this conclusion to the media and have gained a modicum of press coverage by playing on the stereotype of modern science being suppressed by old religion. Moreover, they argue that the silence at Brigham Young University over this topic is evidence that their arguments and conclusions are above reproach. However, these claims err scientifically in that they are based on the naive notion that DNA provides infallible evidence for ancestry and descent in sexually reproducing populations and that the results from such analyses are straightforward, objective, and not laden with assumptions. Moreover, proponents of this naive view blindly ignore decades of theory associated with DNA sequence evolution and data analysis and rarely speak to the extremely tentative nature of their conclusions.

The purpose of this paper is to debunk the myth that the Book of Mormon has been proved false by modern DNA evidence. What I put forth here is a series of scientific arguments highlighting the difficulty of testing the lineage history given some of the known complicating events. This paper should not be regarded as a summary of current research on human population genetics nor as an extensive analysis of all possible complicating factors; rather, it focuses on the current attempts to apply DNA information to the Book of Mormon.

What Is the State of DNA Research on the Book of Mormon?

The first point that should be clarified is that those persons who state that DNA evidence falsifies the authenticity of the Book of Mormon are not themselves performing genetic research to test this claim. This conclusion is not coming from the scientists studying human population genetics. It is not the result of a formal scientific investigation specifically designed to test the authenticity of the Book of Mormon by means of genetic evidence, nor has it been published in any reputable scientific journal open to scientific peer review. Rather, it has come from outside persons who have interpreted the conclusions of an array of population genetic studies and forced the applicability of these results onto the Book of Mormon. The studies cited by these critics were never formulated by their original authors as a specific test of the veracity of the Book of Mormon. To my knowledge there is no reputable researcher who is specifically attempting to test the authenticity of the Book of Mormon with DNA evidence.

Is DNA Research on the Book of Mormon Fundable?

As I am writing this article, I am sitting in an airplane on my way to Washington, D.C., to serve as a member of a scientific review panel for the Systematic Biology program of the National Science Foundation. The NSF is a major source of basic research funding available to scientists in the United States, and every six months the NSF brings in a panel of researchers to review grant applications and provide recommendations for funding. Each research proposal is a 15-page explanation of what research is to be performed, how the research project is designed, the specific hypotheses to be tested through the proposed work, preliminary data.
indicating the feasibility of the particular scientific approach, careful analyses of these data, preliminary conclusions based on those analyses, and a justification for why the proposed research is scientifically interesting, intellectually significant, and worthy of funding. As someone who has received a half-dozen NSF grants and has written even more research proposals, I recognize how much time and effort go into writing a successful research proposal and how carefully thought out that research must be before funding will ever be made available. While anyone can claim to do scientific research, it is widely accepted within the scientific community that the touchstone of quality in a research program is the ability to obtain external funding from a nationally peer-reviewed granting agency and to publish the results in a reputable scientific journal. To be funded at the national level means that a research proposal has undergone the highest degree of scrutiny and been approved by those best able to judge its merits.

Given that no research program thus far has been designed to specifically test the authenticity of the Book of Mormon, I would like to center my discussion on the following question: if one were to design a research program with the stated goal of testing the validity of the Book of Mormon based on DNA information, what specific hypotheses would one test, what experimental design is best suited to test each of these hypotheses, what sort of assumptions must be satisfied before these tests are valid, and what are the limitations of the conclusions that can be drawn from these data? In other words, would a proposal to test the validity of the Book of Mormon by means of DNA sequence information have a sufficiently solid base in science to ever be competitive in receiving funding from a nationally peer-reviewed scientific funding agency such as the NSF?

Is the Authenticity of the Book of Mormon Testable by Means of DNA Information?

One could of course argue that it is impossible to directly test the authenticity of the Book of Mormon with the tools of science, since the Book of Mormon lies within the realm of religion and outside the realm of science. It would be like asking a scientist to design an experiment that tests for the existence of God. There are no data that one could collect to refute the hypothesis that God exists, just as there are no data that one could collect to refute the hypothesis that he does not exist: science simply cannot address the question, and one might argue that the same is true for the Book of Mormon. If one holds this view, and there may be some very good reasons why one might, then there is no need to read any further: DNA can tell us nothing about the authenticity of the Book of Mormon.

However, one might argue that it is possible to indirectly judge the validity of the text by testing the authenticity of the predictions made within the text. If one can demonstrate that some predictions are specifically violated, then perhaps one would have some basis for claiming that the text is false. This is the line of reasoning followed by those who pursue the genetic argument. They suggest that the Book of Mormon makes specific predictions about the genetic structure of the Nephite-Lamanite lineage, that this genetic structure should be identifiable in the descendants of the surviving Lamanites, and that if the Book of Mormon is “true,” then these predictions should be verifiable through DNA evidence. The critics argue that the Book of Mormon predicts that the Lamanite lineage should carry the genetic signature of a Middle Eastern origin and that the genetic descendents of the Lamanites are Native Americans. They then scour the literature to show that current DNA research suggests that Native Americans had an Asian origin. These results are then trumpeted as invalidating the authenticity of the text.

However, by simply applying the results of population genetic studies, which again were never intended to test the Lamanite lineage history put forth in the Book of Mormon, these critics have ignored crucial issues that any reputable scientist designing a research program would have to consider. My thesis is that 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. This is not an argument...
that the Nephite-Lamanite lineage is somehow immune to investigation through DNA evidence because its record is a religious history, but simply that the Nephite-Lamanite lineage history is an example of a class of problems for which DNA evidence provides—at best—ambiguous solutions. It does not matter to me whether we are talking about humans or fruit flies; you could substitute the term Lamanite with Drosophila and the argument would be the same. The lineage history outlined in the Book of Mormon is a conundrum from a DNA perspective; the critics have grossly underplayed or are ignorant of the complications associated with testing this history. Further, because of the complicated nature of this lineage history, I would suggest that the Book of Mormon can neither be corroborated nor refuted by DNA evidence and that attempts to do so miss the mark entirely. I would be just as critical of someone who claimed that current DNA testing proves the Book of Mormon is true as I would of those who claim that DNA evidence proves it is not true. The Lamanite lineage history is difficult to test through DNA information, DNA provides at best only tangential information about the text, and anyone who argues that it can somehow speak to the authenticity of the text should consider the following complicating factors.

What Hypotheses Emerge from the Book of Mormon?

Good science does not consist of someone dreaming up a pet theory and then quilting together pieces of evidence to support it from as many disparate sources as possible while conveniently ignoring pieces of evidence that may undercut the theory. Good science consists of formulating specific hypotheses that can be directly tested from a particular data source. The problem is that, unlike a good NSF research proposal, the Book of Mormon does not explicitly provide a list of null and alternative hypotheses for scientific testing. For instance, the spiritual promise offered in Moroni 10:4 is not open to scientific investigation because it does not put forth a hypothesis that can be tested with any sort of scientific rigor. Likewise, the entire text of the Book of Mormon was meant for specific spiritual purposes and was not intended to be a research proposal listing an explicit hypothesis that is open to scientific investigation. Hence, any hypothesis that emerges from the Book of Mormon is entirely a matter of interpretation, and any specific, testable hypothesis is based very much on how one reads the Lamanite history and considers the degree to which external forces may have influenced the composition of the Lamanite lineage. A person cannot test the authenticity of the Book of Mormon by means of genetics without making some statement about the specific hypotheses that are being tested, why these hypotheses are an accurate interpretation of the text, and how these hypotheses somehow speak to the authenticity of the text. At the very best, one might demonstrate that the predictions have been violated, but the question remains as to whether the supposed predictions were correct to begin with.

From my perspective, there are two possible basic lineage histories—differing in scope, magnitude, and expectation—that one might derive from the Book of Mormon. These histories make predictions that could possibly form the basis of hypotheses that may be tested to varying degrees by means of DNA evidence. I have set these up in a dichotomy of extremes, and certainly one could come up with any combination of these two scenarios, but the extremes are useful for illustrating difficulties associated with applying DNA sequence information to the Book of Mormon. For lack of better terms, I will refer to these as the global colonization hypothesis and the local colonization hypothesis.

The Global Colonization Hypothesis

The global colonization hypothesis is the simplest view of the Lamanite history and the one most readily testable through DNA evidence. This is the view that when the three colonizing groups (Jaredites, Mulekites, and Nephties + Lamanites) came to the New World, the land they occupied was entirely void of humans. It presumes that these colonizers were able to form a pure and isolated genetic unit of Middle Eastern origin living on the American continent and that this genetic heritage was never “contaminated” by the genetic input from any other non–Middle Eastern sources or peoples during the time recorded in the Book of Mormon. It also assumes that the colonizers accurately carried the genetic signature of the Middle Eastern source population and that such a signature indeed existed both within the source population and the migrants. It further requires that genetic input from the time when the Book of Mormon record ends to the present day was negligible or absent and that the direct genetic descendants of these colonizers exist today.
Figure 1. Simplistic representation of population genetics

Each candy store (A and B) represents a human population that may be distinguished on the basis of genetic information. The gumballs represent a particular genetic marker (or locus), such as an entire gene, a portion of DNA, or a specific position along a strand of DNA. Each gumball color represents a variant of the genetic marker, such as a particular form of a gene (allele) or a different nucleotide (A, G, C, or T) at a specific site on the DNA strand. Each gumball machine represents a collection of all of the variants for a single genetic marker across the entire population. If gumball machine A1 contains 100 gumballs, this means that within population A all 100 individuals possess the red variant (and no others) for that particular genetic marker. Most organisms (including humans) carry a large number of genetic markers, so think of the candy store as a giant warehouse stretching out as a seemingly endless line of gumball machines. Most populations consist of a large number of individuals, so think of the gumball machines as being much larger than illustrated.

One population (= candy store) may be distinguished from another by characterizing the particular combination and frequency of genetic variants (= gumball colors) for every genetic marker (= gumball machine). For instance, candy store A may be distinguished from candy store B by carrying only red gumballs for genetic marker 1, a high frequency of green gumballs for genetic marker 2, and a high frequency of yellow gumballs for genetic marker 3. In relation to genetic marker 1, the differences between candy store A and B are discrete differences. That is to say, in candy store A there is only a single genetic variant (red), and in candy store B there is also only a single genetic variant (green). In relation to genetic markers 2 and 3, the differences between candy stores A and B are frequency differences. While both store A and B contain blue variants for genetic marker 2, blue is present in a much higher frequency in store B than it is in store A. The majority of population genetic studies rely on such frequency differences to characterize populations.

and can be identified prior to any genetic analysis. This hypothesis also incorporates the notions that these groups expanded to fill all of North and South America, that there was a tremendous population explosion from these single colonization events, and that any subsequent genetic input, if it occurred, would be swamped out by the strength of the Middle Eastern genetic signal present in the majority of the population. This hypothesis requires that introgression (i.e., gene flow from an external population to the one under study) of genetic signal from other sources be negligible or absent and that the genetics of the individuals compared in an analysis have remained largely pure since the time of colonization. This interpretation of the lineage history of the Book of Mormon is the most easily tested hypothesis by way of DNA analysis.

If we grant that the global colonization hypothesis is the correct lineage history emerging from the Book of Mormon, this hypothesis predicts that the modern-day descendants of the Lamanite lineage should contain the Middle Eastern genetic signature. Since current population genetics suggests that Native Americans (presumed by some to be the direct
Each gumball machine (A–D) represents a potential source population for a single genetic marker. Each source population can be distinguished by a unique frequency of genetic variants (= gumball colors); for example, half of the individuals in source population A possess the genetic variant yellow. Now assume that the mechanism for releasing gumballs from one machine is broken, so that when you return in the morning you find gumballs on the floor. This represents a migration event from an unknown source. Suppose this happened three more times. Your task is to determine which gumball machine was the source population of spilled gumballs for each day in a four-day period.

On day 1, 1000 gumballs spill onto the floor. The inference is that population C was the source population since the frequency of gumballs on the floor is very close to the frequency in the original population. On day 2, 100 gumballs spill onto the floor and you infer (with less confidence) that the source population is A since the frequency of the spilled gumballs is similar to the frequency of population A. On day 3, only 10 gumballs spill. The source population might be C, but this inference carries a great degree of uncertainty since the frequencies are markedly different. On day 4, only 3 gumballs spill, and you cannot determine with any degree of confidence the identity of the source population. Thus as the sample size decreases, the probability that it will not reflect the frequencies in the original population increases. Undersampling of populations is caused by the migration of few individuals and results in a major shift in frequency distributions of genetic markers, thereby obscuring the genetic link to the source population.
Figure 3. Effects of genetic drift

Assume that a source population consists of 1000 gumballs with the frequencies as illustrated. Sample 100 individuals from the source population and the frequency of gumballs will shift (for reasons given in fig. 2). Now establish a new population of 1000 gumballs with frequencies identical to those of the selected sample at time 1. Sample 100 individuals from this new population at time 2. The frequency of the gumballs will shift again. Reestablish the population of 1000 gumballs and repeat the process multiple times. When, after repeated rounds of sampling, you compare the population frequencies with those of the original source population, the frequencies will have drifted over time, thus limiting the ability to accurately infer the source population.
genetic descendants of the Lamanites) have an Asian genetic signature, the above hypothesis is indeed incorrect. To this point all we have shown is that the global colonization hypothesis appears falsified by current genetic evidence. But is the global colonization hypothesis the only hypothesis emerging from the Book of Mormon? This is the crux of the matter. Critics who argue that DNA analysis disproves the authenticity of the Book of Mormon need to demonstrate that the global colonization hypothesis is the only way to interpret the Lamanite lineage history and the only hypothesis under question. The authenticity of the Book of Mormon is in question only if this is an accurate interpretation of the historical population dynamics inferred as existing before, during, and after the Book of Mormon record takes place. However, if the above description of the lineage history in the Book of Mormon is oversimplified, then these genetic results demonstrate only that this oversimplified view does not appear correct. But Book of Mormon scholars have been writing about certain complicating factors for decades, so this conclusion about oversimplification really comes as no surprise.

The Local Colonization Hypothesis

The local colonization hypothesis is more limited in scope, includes many more complicating factors from a genetic perspective, is much more difficult to investigate by way of DNA evidence, and, in my view and that of Book of Mormon scholars, is a more accurate interpretation of the Lamanite lineage history. This hypothesis suggests that when the three colonizing parties came to the New World, the land was already occupied in whole or in part by people of an unknown genetic heritage. Thus the colonizers were not entirely isolated from genetic input from other individuals who were living there or who would arrive during or after the colonization period. The hypothesis presumes that there was gene flow between the colonizers and the prior inhabitants of the land, mixing the genetic signal that may have been originally present in the colonizers. It recognizes that by the time the Book of Mormon account ends, there had been such a mixing of genetic information that there was likely no clear genetic distinction between Nephites, Lamanites, and other inhabitants of the continent. This distinction was further blurred by the time period from when the Book of Mormon ends until now, during which there was an influx of genes from multiple genetic sources. Moreover, the hypothesis suggests that the Nephite-Lamanite lineage occupied a limited geographic range. This would make the unique Middle Eastern genetic signature, if it existed in the colonizers at all, more susceptible to being swamped out with genetic information from other sources.

The problem with the local colonization hypothesis (from a scientific standpoint) is that it is unclear what specific observations would refute it. This is because it makes no specific predictions that can be refuted or corroborated. For instance, there is no expectation that the descendants of the Lamanites should have any specific type of genetic signal, since their genetic signal was easily mixed and swamped out by other inhabitants of unknown genetic origin. Hence, this hypothesis can be neither easily corroborated nor easily refuted by DNA evidence, since any observation could be attributed to genetic introgression, drift, founder effect, or any of the other complicating factors described below.

Local Colonization Hypothesis: Complicating Factors

Suppose you threw caution to the wind and believed that the local colonization hypothesis was the correct one emerging from the Book of Mormon, you really think it is testable, and you are specifically seeking funding to test it. Further, suppose that someone with knowledge of modern population genetics, phylogenetic systematics, molecular evolution, and the Book of Mormon was sitting on the NSF panel reviewing your proposal. Below is a short description of some of the complicating factors that you would have to address in your proposal before the research could be funded. This is not meant to be complete or exhaustive, but just an example of some complicating factors. More detailed descriptions of these basic concepts can be found in standard population genetic, molecular systematics, and molecular evolution textbooks.

1. **Was there a unique, Middle Eastern genetic signature in the source population?** In order for the colonizers to carry a Middle Eastern genetic signature with them, that signature needed to first exist in the source population. It is possible that the Middle Eastern population may not have had a single genetic signature that would allow one to unambiguously identify an individual as being from the Middle East and from no other human population. This is an important consideration because there are many
cultural and racial groups today for which there are no discrete markers unambiguously identifying an individual as a member of that group. Moreover, typically the larger the population and the greater that population tends to migrate, the smaller the probability that a unique, discrete genetic marker exists for that group.

2. Were genetic variants present in the colonizers? In order to perform your study, you would need to present evidence that each of the colonizing groups possessed the unique and defining Middle Eastern traits and did not possess any genetic variants that were atypical of this Middle Eastern genetic heritage.

3. How do you know that small founder size does not confound your results? The Book of Mormon makes clear that each colonization event involved a very small number of founders. Such small population sizes would have had profound effects on how the genetic markers changed over time. In fact, moving a few individuals of any species from one population to a new locality can have such a profound effect on the underlying genetic profile that it is considered to be a major mechanism in the formation of new species. This is called founder effect, which is caused by undersampling genes from a much larger population of genes and is closely tied to the concept of genetic drift (described below). In other words, founder effect describes the evolutionary process that results in the colonizing population having a gene pool that is not likely to reflect the gene pool of the original source population.

4. What are the effects of genetic drift? Genetic drift is the well-established evolutionary principle that in small populations random sampling biases will cause certain genetic markers to disappear and other markers to become widespread in the population just by chance. As an example, suppose you go to the grocery store to purchase a container of 1,000 jelly beans in 10 flavors. When you bring the jelly beans home, you determine that each of the 10 flavors is present in equal frequency; that is, you have as many tangerine-flavored jelly beans as you have lime-flavored jelly beans. Now from that container of

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**The DNA Fallacy**

- DNA analysis does not require careful experimental design.
- DNA provides straightforward, unambiguous, and internally consistent information about the past.
- DNA can be used to infer the genealogy of any organism or any species, regardless of circumstance or historical population dynamic.
- DNA conclusions are final, decisive, and free of assumptions.

**The DNA Fact**

- DNA is a very important tool for inferring history, but
  - experiments must be properly designed,
  - hypotheses must be formulated,
  - assumptions must be tested,
  - analyses must be appropriate for the data at hand,
  - conclusions are the best current estimate but are open to revision with additional data or analytical tools.

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1,000 jelly beans, randomly sample 100 jelly beans and place them in a new container. If you count the jelly beans in the new container, you will realize that the frequency has changed; some flavors happened to be selected 11 or 12 times, some were sampled only 3 or 4 times, and some might not be sampled at all. Now instead of sampling 100 jelly beans, this time sample 30 from your original container. You would find that the frequency of flavors is more greatly skewed with the smaller sample size and that you have lost more flavors. As you reduce your sample size, you increase the probability that the frequency of jelly beans in the new sample will be all the more different from the original population. If each flavor represents a unique genetic heritage, this means that the sampling of genes from one generation to the
next can cause certain genetic markers to go extinct and others to be present in higher frequency due entirely to random sampling. When the colonizers left the Middle East, they brought with them only a sample of the genetic heritage of that population that may not have accurately represented the markers present in the whole population; and when they arrived in the New World, the frequency of those genetic markers was likely to continue to change as the population was established.

5. What were the effects of the colonizers’ arriving to a locality that was not a complete genetic island (i.e., other humans were present and could contribute to the gene pool)? If there were other inhabitants all-

What I am NOT saying is . . .

- All population genetic studies are bogus.
- DNA is an unreliable tool.
- The science has so many assumptions that results are never believable.

What I AM saying is . . .

- The local colonization hypothesis is hard to test because of complications associated with the Lamanite lineage history, such as founder effect, genetic drift, and extensive introgression.
- DNA evidence is not likely to unambiguously refute or corroborate this hypothesis.
- This hypothesis has never been specifically tested.
- DNA evidence does nothing to speak to the authenticity of the Book of Mormon text.
- I would be just as critical of a claim that DNA evidence supports the Book of Mormon as I am of the claim that it does not.
- You cannot claim that an observation is scientific if you ignore the science.

ready present on the American continent when the colonizers arrived, then it becomes extremely difficult to distinguish whether the genetic signature a descendant carries is due to its being carried by the original colonizers or due to gene flow from the other, original inhabitants. This is especially problematic if the colonizing population is small and the native population is large once gene flow commences, since it will speed up the swamping-out effect of the colonizers’ genetic markers with those of the native inhabitants. John L. Sorenson, among others, has presented evidence suggesting that the colonizers were not alone when they reached the Americas; and as I read the Book of Mormon, I can find no barriers to gene flow between the native population and those who formed the Lamanite lineage. Note that this could have occurred early in the colonization process or later as the Nephite and Lamanite nations flourished, but the swamping-out effect would be very similar in either case.

6. What were the effects of gene flow after the Book of Mormon ends? Certainly there was gene flow from the time when the Book of Mormon record closes to when DNA samples are obtained in the present day. It is preposterous to suppose that there has been complete genetic isolation in the Lamanite lineage during this time period. As the designer of the scientific experiment, you would need to account for the effects of gene flow in this undocumented time period and provide a justification for...
8. Who are the extant genetic descendants of the Lamanite lineage? If you are treating your research as a scientific test of the local colonization hypothesis, you need to identify who these Lamanite descendants are before you put them to the genetic test. When we go out to sample “Lamanite DNA,” whom do we sample to get that DNA? There is no statement within the text of the Book of Mormon identifying who these descendants might be, though later commentators and church leaders have associated them with the Native Americans and/or inhabitants of South and Central America. The introduction to the Book of Mormon states that the Lamanites were the “principal ancestors of the American Indians,” but this, again, is commentary not present in the original text and was based on the best knowledge of the time.

9. How do you identify unambiguously the Middle Eastern population that contains the ancestral genetic signature that you will use for comparison? Just as the genetic signature of the colonizers may have changed over time, the genetic signature of the Middle Eastern source population may have changed as well, making it unclear just whom we should sample to find that ancestral Middle Eastern genetic marker. We know that the Middle East has been the crossroads of civilization for many millennia and that many events affecting entire populations have occurred there since 600 B.C., such as the large-scale captivity of groups and the influence of other people moving within and through the area. All of these factors complicate the identification of a discrete genetic profile characterizing the original Middle Eastern source population.

10. Has natural selection changed the genetic signature? One assumption in performing molecular phylogenetic analyses is that the genetic markers under study are not subject to the effects of natural selection. For instance, if a particular genetic marker is closely linked to a genetic disease that reduced fitness (the number of offspring that survive to reproduce) in a population, then, over time, selection would tend to eliminate that genetic marker from the population and the phylogenetic information associated with that marker may be misleading. Likewise, a genetic marker linked to a favorable trait may become the dominant marker in the population through the results of natural selection, and the marker would then be of limited phylogenetic utility.

The above tally is not intended to be an exhaustive list of scientific concerns, and many other more complicated ones abound. 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 the 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.

Driving the Point Home

Let’s look at the problem another way. Suppose you were a scientist going to the NSF to get funding to study an ancient fruit fly colonization event and you want to test the hypothesis that a few thousand years ago a single female fruit fly from a Utah population was picked up in a storm and blown all the way to Hawaii to lay its eggs. You know that the offspring of this fruit fly can freely mate with the Hawaiian population and produce viable offspring, but so can all the other fruit flies blowing in from all over the world during this time period. Now suppose you use all the genetic tools in your arsenal to try to detect that Utah colonization event. Could you detect it? Perhaps, if the population dynamics were just right. But your inability to detect this event does not mean that it did not happen; it just means that given the particular population dynamics, it was extremely difficult to test because there was not a genetic signal remaining for the colonization event. Would you get funded for this study? Probably not. There are many better-designed experiments that are more worthy of funding than this shot in the dark.

Conclusion

Critics of the Book of Mormon have argued that DNA evidence has demonstrated once and for all that the book was contrived by Joseph Smith and is hence a fraud. They appeal to the precision of DNA evidence
and tout their conclusions as being objective, verifiable, assumption free, and decisive. However, 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 experiment 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.

I return to my original question: Is testing the Book of Mormon by means of genetic information a fundable research project? I do not think so. Given the complications enumerated above, it is very unclear what would constitute sufficient evidence to reject the hypothesis that the Lamanite lineages were derived from Middle Eastern lineages, since there are so many assumptions that must be met and so many complications that we are not yet capable of sifting through.

I have not made the argument that DNA is not useful for inferring historical events nor that population genetics is inherently wrong. Current research in population genetics is providing marvelous insights into our past and, when properly wielded, is a powerful tool. Nor am I disputing the inference that Native Americans have a preponderance of genes that carry a genetic signature for Asian origin. But what I am saying is that given the complexities of genetic drift, founder effect, and introgression, the observation that Native Americans have a preponderance of Asian genes does not conclusively demonstrate that they are therefore not descendants of the Lamanite lineage, because we do not know what genetic signature that Lamanite lineage possessed at the conclusion of the Book of Mormon record.

If you were to go back in time to when the Book of Mormon is closing and began sampling the DNA of individuals who clearly identified themselves as Lamanites, you might indeed find a strong Asian signature and no trace of a Middle Eastern signature because of the effects, as we have noted, of genetic drift, founder effect, and especially introgression, particularly if the surrounding population was derived from an Asian origin. The point is that the current DNA evidence does not distinguish between this and other possibilities because a study has never been designed to do precisely that.

But in all this discussion of the limitations of DNA analysis, it is important to remember that science is only as good as the hypotheses it sets forth to test. If you test the veracity of the Book of Mormon based on a prediction that you define, then of course you will “prove” it false if it does not meet your prediction. But if the prediction was inappropriate from the beginning, you have not really tested anything.

In sum, the Book of Mormon was never intended to be a record of genetic heritage, but a record of religious and cultural heritage that was passed from generation to generation, regardless of the genetic attributes of the individuals who received that heritage. The Book of Mormon was written more as an “us versus them” record, with the “us” being primarily Nephites and the “them” being a mixture of the genetic descendants of Lamanites plus anyone else who happened to occupy the land at the time. This interpretation accepts as a strong possibility that there was substantial introgression of genes from other human populations into the genetic heritage of the Nephites and Lamanites, such that a unique genetic marker to identify someone unambiguously as a Lamanite, if it ever existed, was quickly lost. It would be the pinnacle of foolishness to base one’s testimony on the results of a DNA analysis. As someone who has spent a decade using DNA information to decipher the past, I recognize the tentative nature of all my conclusions, regardless of whether or not they have been based on DNA. There are some very good scientific reasons for why the Book of Mormon is neither easily corroborated nor refuted by DNA evidence, and current attempts to do so are based on dubious science.
RECENT CLAIMS CONCERNING the supposed absence of DNA evidence in support of the Book of Mormon have caused me to investigate more closely what the record itself has to say on the topic. The mitochondrial DNA (mtDNA) lineage of Nephi’s children (and of Laman’s offspring) would come through Ishmael’s wife since the four oldest sons of Lehi as well as Zoram married the five daughters of Ishmael (see 1 Nephi 16:7). Unfortunately, Ishmael’s wife is of unknown background and heritage. In fact, she is mentioned only twice in the Book of Mormon (see 1 Nephi 7:6, 19) and may have died before Ishmael since she is not mentioned as a mourner when Ishmael dies at Nahom (see 1 Nephi 16:34–35). Perhaps the historical information in the large plates of Nephi, or even the 116 pages translated in 1828 and lost by Martin Harris, could shed some light on Ishmael’s wife’s background if only we had access to them.

The wives of Ishmael’s two sons (see 1 Nephi 7:6) would also potentially introduce additional mtDNA lineages into the Nephite and Lamanite descendants, as would Nephi’s sisters (see 2 Nephi 5:6). But, again, the Book of Mormon record is silent regarding their backgrounds. Thus, we are left without enough information from the Book of Mormon record itself to identify definitively an appropriate genetic source population that could be used to calibrate the claims of the Book of Mormon. Likewise, we do not have sufficient information to declare the Book of Mormon not true.

While Lehi’s direct male offspring would possess a copy of his Y chromosome, it is unclear whether or not these offspring would also have Manasseh, Joseph, Jacob, Isaac, and Abraham in their patrilineage, because Lehi is listed only as “a descendant of Manasseh” in Alma 10:3. Lehi could meet the definition of a descendant of Manasseh from a large number of genealogical lineages without being in the direct patrilineal line and possessing an Abrahamic Y chromosome. In addition, the fact that Mormon uses the phrase pure descendant of Lehi to describe himself in 3 Nephi 5:20 would seem to indicate that Lehi’s lineage was a rare one in Mormon’s day.

Interestingly absent from the critics’ contentions is mention of the Jaredites. The Jaredite nation existed for more than 1,500 years before the Lehites arrived in the promised land. This group spanned at least 29 generations (see Ether 1:6–33) with combinations of marriages between people whose background we know virtually nothing about. The Jaredites most likely traveled from central Asia to northeast Asia and then via barges to the New World (see Hugh Nibley, Lehi in the Desert; The World of the Jaredites; There Were Jaredites [1988], 181–82). Genetically, their path of travel would have seemed much like land passage across the Bering Strait if others along that route joined them and Asian bloodlines entered their group as they traveled. After arriving in the New World, the Jaredite people had hundreds of years to grow and spread across parts of the continent, perhaps encountering and intermarrying with other groups of unknown origin.

We usually think of the Jaredite nation as being completely annihilated in the final battle between the armies of Coriantumr and Shiz (see Ether 15). However, the prophecy of Ether states that all of Coriantumr’s household would be destroyed if he did not repent (see Ether 13:20–21), which does not necessarily mean all of the descendants of the original Jaredite colonization party. It is entirely conceivable that one or more groups had broken away from
the main Jaredite colony and survived outside of the record describing the downfall of the Coriantumr and Shiz camps. In fact, Hugh Nibley has argued for some kind of interaction and influence between the Jaredite and Lehite groups because of the continuance of such Jaredite names as Korihor (see Alma 30; Ether 7:3) and Coriantumr (see Helaman 1:15) in Nephite times (see Nibley, Lehi in the Desert; The World of the Jaredites; There Were Jaredites, 245). While it is possible to speculate endlessly about scenarios that would make Book of Mormon story lines compatible with current DNA evidence, the record itself is simply not descriptive enough to provide definitive calibration points with which to make confident scientific conclusions.

Thus, we are left where we started (and where I believe the Lord intended us to be)—in the realm of faith. A spiritual witness is the only way to know the truthfulness of the Book of Mormon. Although DNA studies have made links between Native Americans and Asians, these studies in no way invalidate the Book of Mormon despite the loud voices of detractors.

The major work that attacks the Book of Mormon on the grounds of supposed DNA evidence is that of Thomas W. Murphy, “Lamanite Genesis, Genealogy, and Genetics,” a chapter in American Apocrypha, edited by Dan Vogel and Brent Lee Metcalfe (Salt Lake City: Signature Books, 2002). Murphy recently completed a Ph.D. in anthropology from the University of Washington, and he currently teaches at Edmonds Community College in Lynnwood, Washington, where he is the only full-time member of his department. His skills are in the cultural heritage of Native Americans, and he has little or no scientific background. For more on him and the media attention that his work has received, consult http://www.fairlds.org/pubs/murphy.pdf.

—ED.
THE QUESTIONS Who are the children of Lehi? and How can we reconcile Book of Mormon perspectives with modern DNA data? are issues of great importance to a number of Latter-day Saints and other people. We present this essay in an attempt to facilitate some reconciliation. Our perspective is that of active members of the Church of Jesus Christ of Latter-day Saints who view the Book of Mormon as an accurate, correct account of actual historic events that occurred on the American continent. We are also biologists. Although we are both involved in research outside the immediate field of human genetics, our backgrounds and training include firm foundations in genetics, including human and population genetics. As biologists we accept the published data dealing with Native American origins and view those data as reasonably representing American-Asian connections. Only by understanding the nature of inheritance, however, can one reconcile a written record with a genetic profile of an individual or group.

We propose that the Abrahamic covenant, by which all the families of the earth would be blessed through Abraham (see Abraham 2:11), applied to the children of Lehi in much the same way that it applied to the children of Israel, as leaven within bread. The leaven is, of necessity, only a small ingredient in bread, not the bread itself. We propose that the children of Lehi are the leaven of the Abrahamic covenant in the New World, unlikely to be detected by genetic analysis of modern New World inhabitants.

A Covenant People

The Judeo-Christian Bible recounts Jehovah’s relationship with his chosen people up to the New Testament era. Through the patriarchs, the God of the Old Testament established a covenant with the believing posterity of Adam. That covenant was in turn established with Abraham, promising that his seed would be as numerous as the sands of the sea and that through his seed all families and all nations of the earth would be blessed (see Genesis 12:2–3; 22:18). It was written that, before the foundations of the world were laid, the inheritance of nations was set according to the number of the children of Israel (see Deuteronomy 32:8).

The prophet Isaiah, whose vision seemed to penetrate the veil of time, marked history largely by the scattering and gathering of the house of Israel. The Lord said of him: “Great are the words of Isaiah. For surely he spake as touching all things concerning my people, which are of the house of Israel” (3 Nephi 23:1–2). He and others saw Israel sifted throughout the nations of the world much like leaven in a loaf of bread, dispersing the promises of the covenant and the hope for a Redeemer to the four quarters of the earth (see Isaiah 5:13; Amos 9:9). Isaiah saw the people of Israel eventually gathered and reestablished as a people in the latter days (see Isaiah 11:10–16).

From the Hebrews’ own ethnocentric perspective, they occupied center stage in the world drama as God’s covenant people. However, from the point of view of their immediate neighbors, let alone the rest of the world, they were a minor, clannish people who happened to occupy a strategic geographic nexus between two centers of civilization, Egypt and Mesopotamia, but were otherwise of little historical consequence. The two greatest kings of Israel, David and Solomon, left hardly a trace in the archaeological record. And yet, rather surprisingly, much of the world has been and continues to be influenced by Israel’s history. Perhaps most significantly, the person...
regarded by an important fraction of the world populace as the Savior of humankind, Jesus of Nazareth, was born through the house of Israel. Calendars now pivot upon that event. Not long after his crucifixion by the hands of the Romans, many Jews were scattered, as the kingdoms of Israel and of Judah had been before them. The reckoning of time by Christians throughout the world since then has pointed to the day when the Lord would stretch forth his arm to once again gather in his people, the lost sheep of Israel, in prelude to his return.

In spite of the perception of ethnocentricity and elitism among historical and modern Jews, the original notion of a covenant people was a spiritual and religious concept rather than a strictly ethnic or genealogical identity. The covenant binds together all those who have accepted the terms of belief and behavior. Those not born into the house of Israel were not of necessity excluded; they could be partakers of the covenant through “adoption.” For Christians, “they which are of faith . . . are the children of Abraham” (Galatians 3:7). The biblical book of Ruth tells the story of a woman of Moabite descent who was the great-grandmother of David. She declared these immortal words to her mother-in-law, Naomi: “Whither thou goest, I will go; and where thou lodgest, I will lodge; thy people shall be my people, and thy God my God” (Ruth 1:16). The gene pool of the house of Israel was, from its earliest history, a melting pot of ethnicities and nationalities. For example, Joseph, the favored son of Jacob, who, according to the Hebrew records, became second only to Pharaoh, took an Egyptian wife. Therefore all of his children, including Ephraim and Manasseh, and their descendants were of “mixed blood.” It seems very likely that considerable mixing with the Egyptian gene pool occurred during the several centuries that the Israelites were enslaved in Egypt. Interestingly, this enslavement, so important in the Hebrew lineage record, is not at all mentioned in Egyptian records.

This Joseph, son of Jacob, foretold that a remnant of his seed would be preserved and inherit a land of promise. The principal characters in the Book of Mormon are said to be that remnant, “branches run[ning] over the wall,” the “other sheep” of which Christ himself spoke (Genesis 49:22; John 10:16). By their account they heard the voice of the Shepherd and made record of it. The Book of Mormon asserts to be another testament of Christ, bearing record, as a voice from the dust, of his dealings with this American branch of the house of Israel, transplanted to the Western Hemisphere.

The Book of Mormon explicitly relates an account of the exodus of a small band of Israelites, consisting of two families led by father Lehi, out of the doomed city of Jerusalem soon after the year 600 B.C. This remnant of Joseph journeyed through the wilderness and across the sea to make a new home in a promised land, a place within the lands we now refer to as the Americas. From the children of Lehi arose two principal cultures, the Nephites and the Lamanites, who play out a drama fraught with wars and contentions. Notice we have said two cultures, not lineages. These were cultural-political-religious groups, not necessarily restricted to particular lineal descent, that soon encompassed varied populations, some made mention of and, very likely, some that went largely or completely unmentioned in Mormon’s abridged record of the Nephites.

What is curious is the occasional pointed declaration by a prominent
character that he is a direct descendant of Lehi. This would seem to be stating the obvious, unless there were an implicit acknowledgement of extensive intermingling with other people in the region who were not the children of Lehi. Ultimately, the Nephite culture was corrupted from within and overpowered from without and the Nephites were hunted virtually to extinction, but not before hiding up a record and a testament that would one day come forth, in part to convince the remnant of the Lamanites that Jesus is the Christ (see Book of Mormon title page). And yet this brief synopsis, so familiar to Latter-day Saints, does little to convey the convoluted history and complexities of the cultural, political, and genealogical relationships of the Book of Mormon peoples. It fails to acknowledge the subtle but persistent allusions to the more expansive stage and cast that fall just beyond the immediate purview of the record keepers, who lacked the benefit of modern transportation and telecommunication that we in today’s modern world so easily take for granted.

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 Saint 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. Although the idea that Native Americans are exclusively descended from the remnant of the “Lamanites” is not required by the scriptures, in the face of modern scientific research it has caused some to question the credibility of the Book of Mormon.

The modern era of molecular biology has ushered in new approaches to the study of human populations that some have hoped may shed light on Book of Mormon historicity. The notion has arisen that modern DNA research will either vindicate or refute the Book of Mormon as a record of some or all the ancient inhabitants of the Americas, whether to bolster one’s own faith, to persuade the nonbeliever, or, conversely, to justify one’s own rejection of the document as an ancient historical record and evidence of the restoration of the gospel through the prophet Joseph Smith.

The Science of Native American Origins

The question of North American origins emerged soon after it became clear that the Americas were not the eastern shores of the Orient. As early as 1589, José de Acosta, a Jesuit missionary in South America, proposed that so-called Native Americans had migrated to the Americas from Siberia thousands of years ago. Georges Louis Leclerc, Comte de Buffon, one of the leading early naturalists, proposed in 1749 that Asians and American Indians shared a common origin and that the New World was populated by people who had migrated from Asia. Later in the same century, Johann Friedrich Blumenbach proposed that the American Indians were descended from Mongols of northeast Asia. He suggested that the colonization occurred in several waves of migration.
Michael Crawford, from the Department of Anthropology at the University of Kansas, who has conducted extensive human population genetic research in the islands of the Bering Strait, argues that these “waves of migration” continued until the mid-20th century. He states: “Up to World War II, Alaskan Eskimos crossed the winter ice pack into Siberia to obtain wives. It is my contention that social contacts persisted in the Norton Sound region between the Eskimo groups of both sides of the Bering Strait and that complete reproductive isolation between the Old and New Worlds is a myth.”

Crawford is a major contributor to work in the field of Native American origins. He published an excellent book in 1998 in which he reviewed the voluminous history of research concerning those origins (his book has been cited by several researchers in the field as a recommended review of the subject, and we highly recommend it to anyone who is looking for more detailed information concerning these issues). Crawford reviewed the genetic data from human blood groups, serum proteins, red-blood-cell proteins, immunoglobulins, histocompatibility proteins, DNA polymorphisms—including mitochondrial DNA (mtDNA) and both coding and noncoding regions of nuclear DNA—and Y-chromosome markers. He pointed out that, by 1998, population genetic studies had been conducted for 341 different proteins. In some cases, polymorphisms were either insufficient between populations or too great within populations to be useful in human population studies. There were several genetic markers, however, that provided powerful tests of hypotheses concerning human populations. Crawford concluded that “a considerable body of scientific evidence has been compiled about the origins of these [New World] populations. This evidence indicates extremely strong biological and cultural affinities between New World and Asian populations and leaves no doubt that the first migrants into the Americas were Asians, possibly from Siberia.”

In the five years since the publication of Crawford’s book, well over 40 additional papers have appeared in the literature addressing issues of Native American origins. Most are essentially consistent with the findings published before 1998. The data accumulated to date indicate that 99.6 percent of Native American genetic markers studied so far exhibit Siberian connections.

But what about the so-called X haplotype? Could that be evidence for a European or Middle Eastern connection to Native Americans? The term haplotype is a contraction of the phrase haploid genotype. Haplotypes are commonly used in population genetics to compare individuals within and among populations. A haplogroup is a set of related haplotypes that share the same group of alleles or DNA polymorphisms. It is usually assumed that the members of a haplogroup, sharing a common haplotype, form a single lineage; that is, they are all descended from a common ancestor from which the haplotype is derived. Antonio Torroni and Douglas Wallace stated in 1995 that 718 of 743 (96.6 percent) Native American mtDNA polymorphisms studied to that
date fell into one of four haplogroups: A, B, C, and D. The remaining 25 exhibited other mtDNA variations. Anne C. Stone and Mark Stoneking examined the nuclear and mtDNA from 20 individuals buried in a 700-year-old cemetery in Illinois. They found that the population exhibited all four of the major modern Native American haplogroups (A, B, C, D), as well as a fifth (probably X; see discussion to follow). They concluded that no major mtDNA markers were lost between 1300 A.D. and the present, in spite of the severe population decline. They also proposed that the major markers were not introduced into the population by modern Europeans.

Graciela Bailliet and coworkers in 1994 proposed that as many as ten possible mtDNA founder haplotypes gave rise to Native American populations. Four of those ten would have given rise to the four major haplogroups, whereas the other six haplotypes would exist among the 3.4 percent of the population not among the major haplogroups. In 1996 Torroni and coworkers identified ten haplogroups (designated H, I, J, K, M, T, U, V, W, and X) among three European populations. Haplogroup X was present in 4 percent of the population. Peter Forster and others stated in 1996 that they would call the major Native American haplogroup, which was previously referred to as “other,” haplogroup X. They proposed that this haplogroup was Siberian in origin. In 1998 Michael Brown and others asserted that the X haplotype of the Forster study was the same as the X haplotype in the Torroni European study. They noted, “Our analysis confirmed that haplogroup X is present in both modern Native Americans and European populations.” The Brown study also demonstrated that haplogroup X was clearly of ancient origin. Moreover, they concluded, “Overall, these data exclude the possibility that the occurrence of haplogroup X in Native Americans is due to recent European admixture and, instead, provide a rigorous demonstration that this haplogroup represents an additional founding mtDNA lineage in Native Americans.”

The antiquity of haplogroup X in the Americas was confirmed in 2002 when R. S. Malhi and David Smith identified a 1,300-year-old person discovered along the Columbia River near Vantage, Washington, as belonging to haplogroup X. Their finding “confirms the hypothesis that haplogroup X is a founding lineage.”

The implications were interesting, to say the least: an ancient European haplogroup in Native American populations? Brown and his colleagues asked the obvious question: “Where did this haplogroup originate? Thus far, haplogroup X has not been detected in numerous Asian/Siberian populations.” They went on to say, “Haplogroup X is remarkable in that it has not been found in Asians, including Siberians, suggesting that it may have come to the Americas via a Eurasian migration.” The possibility that one of the five founding groups had ancient European connections was exciting, and controversial. Even the popular press picked up on it. Some Latter-day Saint scholars hoped that this was evidence of the long-awaited link to the Middle East, ignoring the fact that Brown and his associates proposed that haplotype X arrived in North America 20,000 to 30,000 years ago. The controversy was largely put to rest in 2001 when Miroslava Derenko and his fellow researchers found haplogroup X in south Siberia (although in only 3.5 percent of the population).

Haplogroup X accounted for 3 percent of the Native American population studied to date. Added to the 96.6 percent accounted for by haplogroups A, B, C, and D, that left only 0.4 percent of Native Americans so far studied unaccounted for. As expressed by Smith and his colleagues, most researchers believe that the origins of 99.6 percent of Native Americans are accounted for now by five haplogroups: A, B, C, D, and X.

The limited data garnered from studies so far of human populations, in concert with archaeological and anthropological studies, have largely confirmed the scientific hypothesis that northeast Asia is the primary source of the majority of the early inhabitants of the Americas. This conclusion has led to the establishment of a paradigm of Native American origins. 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?

Hypotheses of Native American Origins

At least three major hypotheses can (and have) been advanced concerning Native American origins:

1. All Native Americans are of Asian origin.

(This has been the predominant hypothesis
of mainstream science since the late 16th

century.)

2. All Native Americans are of Middle Eastern

origin. (This hypothesis is that advocated by

people who accept the Book of Mormon ac-

count.)

3. Most Native Americans are of Asian origin,

whereas some small subset is of Middle

Eastern origin. This latter hypothesis has

two subservient hypotheses:

a. No genetic evidence of the Middle

Eastern subset has been found, but will

eventually be found.

b. No genetic evidence of the Middle

Eastern subset has been found, and prob-

ably never will be found.

Hypotheses 1 and 2 are testable by direct, scien-
tific methods. The genetic constitution of the extant
Native American population has been extensively
tested. The data support hypothesis number 1 and
refute hypothesis 2. Hypothesis 3 is more problem-
atic and may not be testable. Why? Because a very
small population introduced into a larger popula-
tion may or may not be identifiable, depending on
whether any specific genetic markers for that popu-
lation were transferred to the main population. The
X haplotype is an example of such a potential genetic
marker. Because haplotype X had not been found in
Asian populations prior to 2001, it remained as a
possible marker brought into the population from
Europe or the Middle East. The discovery that hap-
loftype X existed in south Siberia ended most in-
quires into its source. This observation was consis-
tent with the hypothesis that all Native Americans
originated in Asia. The X haplotype, however, was
present in only 3.5 percent of the south Siberian popu-
lation, an area from which the other four haplotypes
were not proposed to have originated. Although the
observation was consistent with the hypothesis, the
prospect that the Native American X haplotype was
actually derived from the Siberian X haplotype, and
not from the European X haplotype, has never been,
and probably never can be, established.

Although the principle of parsimony in science
states that the simplest explanation is preferred, that
explanation is not necessarily the correct one. It is,
however, the explanation accepted by science until
additional data refute it. The data collected to date,
when considered in the context of the principles of
population genetics, do not exclude the possibility of
other gene sources not detected in the limited sampling of extant populations. One or more relatively small populations, now extinct or genetically swamped out in the gene pool of the Western Hemisphere, could have existed but are no longer apparent. The limitations on the potential for data collection mean that some hypotheses of Native American origins cannot be tested by DNA research.

While the singular assumption or interpretation that all modern Native Americans are direct lineal descendants of the dominant Book of Mormon peoples may be set aside by modern molecular evidence, it is a very different matter to take the additional step to assert that the DNA data refute the claim of the Book of Mormon to be a historical document. Such a conclusion ignores the complex relationships described in the Book of Mormon and the limitations of the sampled genetic data. Nor is it likely that any scientific data will be forthcoming to resolve the question empirically one way or the other. The necessary experiment simply cannot be designed that would refute the historicity of the Book of Mormon, as the record of a small, isolated population, on the basis of DNA studies and population genetics.

We propose that the Book of Mormon is the account of a small group of people who lived on the American continent, interacting to some degree with the indigenous population but relatively isolated from the general historical events occurring elsewhere in the Americas. What DNA evidence might exist today of such a group? What are the implications if no molecular evidence ever emerges that such a group ever existed? How small does a population have to be before it is swamped out or killed off by a larger population, leaving no genetic trace? Does the absence of such evidence compel us to assume that no such group existed? Do the sciences of population genetics and molecular biology give us any direction for addressing questions such as these?

Heredity and Heritage

Although it has been more than 100 years since Gregor Mendel's foundational work in heredity was discovered, most people do not understand all the implications of inheritance. Many people still adhere to the old concept of “bloodlines,” the notion that in some small way we all carry some tiny bit of organic information from each and every one of our ancestors. According to this concept, popular in the 19th century, bloodlines are mixed through matings, much as one would mix a cocktail, so that although a given ancestral line may be faint, it should still be detectable in the blood of the descendant.

To describe ancestral lines and inheritance patterns, we present here, as an example, one of our family histories, that of Trent Stephens, presented in first person: Julia Ann Buchanan was my mother’s mother. Her great-grandfather, John Buchanan III, came to America in 1800 from Ramelton, Donegal, Ireland. His third great-grandfather, George Buchanan (b. 1648) of Blairlusk, Scotland, was a Presbyterian Covenanter who fought against James Scott, Duke of Monmouth and contender for the English crown, at the Battle of Bothwell Bridge in the summer of 1680. After the Scottish defeat, George gave all his holdings in Scotland to his brother William and fled to Ireland. Ten generations separate me from this George Buchanan, a Presbyterian patriot or Scottish rebel, depending on which side of the bridge you stood.

I have, as does everyone else, 1,024 ancestor slots in the 10th generation back. The actual number of ancestors filling those slots is often not quite 1,024 because of multiple descent from the same ancestor. For example, I am descended through two lines from Alexander Stephens (my second great-grandfather on one line and third great-grandfather on another line). To my knowledge, however, my descent from George Buchanan is by only one line. The progenitors of Alexander Stephens, from whom I am descended by two lines, would each occupy two slots rather than one in the 10th generation. However, someone like George Buchanan, from whom only
one line descends to me, would still occupy only one slot of the 1,024. The size of the genome in the eucromatin of every living human, or for any human that has ever lived, is approximately 30,000 genes, with at least two alleles for each gene (some genes have multiple copies in the genome, and additional genes may yet be discovered in the heterochromatin). Considering a minimum of 60,000 alleles, there are 61,440,000 allelic slots in the 10th generation, from which my 60,000 alleles were randomly selected. The chance, therefore, of my inheriting any single allele from George Buchanan is 60,000 in 61,440,000 or 1 in 1,024. The probability of my inheriting any single allele from the 10th generation in the line of Alexander Stephens, from whom I descend twice, is twice as great, or 1 in 512.

The same probability applies to inheriting any one of George Buchanan’s 44 autosomal chromosomes. Of 45,056 chromosomal slots in the 10th generation back, the probability of my inheriting any one of George Buchanan’s chromosomes is 44 in 45,056, or 1 in 1,024.

The same probability, however, does not apply to the sex chromosomes, the X and Y chromosomes. My Y chromosome, derived from my paternal line only, comes directly from Thomas Stephens (b. 1610) of England, in the 10th generation. My X chromosome comes from my mother, who obtained it from either her father or mother. Each woman carries two X chromosomes, one inherited from her maternal line and one from her father’s maternal line. Each man inherits only one X chromosome, which comes from his mother. Therefore, the ancestry of the X chromosome is less certain than that of the Y chromosome, or for that matter of mtDNA, but more certain than that of the autosomal chromosomes. Every male and female alike inherit their mtDNA strictly from their maternal line. My mtDNA comes from a Mrs. Vandenberg, 10 generations ago, born about 1657 in New York.

Ten more generations back along the Buchanan line takes me to Walter, 11th laird of Buchanan, born in 1338. The probability of my inheriting any one allele or chromosome from Walter is 1 in 1,048,576.

Ten more generations back brings me to Anselan Buey O’Kyan, 1st laird of Buchanan, who was born in Ireland in A.D. 980. He came to Scotland to escape the Viking raids in Ireland, then helped Malcolm II, king of Scotland, fight against the Vikings in Scotland. (Some of the Vikings he fought against may have also been my ancestors because I am descended, through several lines, from the Normans.) For his service to the king, Anselan was given, in A.D. 1016, the hand of Dennistoun, heiress to the Buchanan lands on the east bank of Loch Lomen. My chances of inheriting an allele or chromosome from Anselan or Dennistoun, 30 generations and 1,000 years ago, is 1 in 10,737,417,000, about as much chance as winning the lottery!

The Buchanan family is neither on my direct paternal line nor on my direct maternal line, so the chance of finding any genetic fingerprint linking me to Anselan Buey O’Kyan is about 1 in 11 billion. The chance of finding a genetic fingerprint linking me to Walter Buchanan is 1 in 1 million; and to George Buchanan, 10 generations and a little more than 300 years ago, is 1 in 1,000. Those are not good odds if I am trying to identify genetic connections to even the most recent of these ancestors.

Do all these data indicate that the lairds of Buchanan are not my ancestors? Not at all! I am a direct lineal descendent of Anselan Buey O’Kyan as much as I am from any other of my ancestors of that era. My genealogy can be traced back, in this one line, to Anselan Buey O’Kyan, and for seven more generations beyond, to Fargallus, who was born in Ireland in A.D. 680. These lines are well established and documented, with dates and places. There is less than 1 chance in 10 billion, however, that my descent from Anselan can be confirmed genetically.

My paternal family line goes back only 13 generations before reaching a dead end, to Henry Stephens,
born in England in 1497. My Y chromosome, therefore, says that my ancestry is English, with no mention of my Scottish, Irish, French, or German heritage. My maternal line goes back only 10 generations to a Mrs. Vandenberg, born about 1657 in New York. I don’t know where her maternal line originated. For the sake of argument, let’s say that Jan Hendrichse Vandenberg married a Native American, not uncommon for that place and time. My mtDNA would show me descended from a Native American line, with no mention of my English, Scottish, Irish, French, or German heritage, even though Mrs. Vandenberg is only 1 of 1,024 ancestors in that generation.

Mitochondrial DNA and Y chromosome DNA reveal just a tiny slice of family history. Only 1 out of 4 great-grandfathers is represented in the Y chromosome, and only 1 great-grandmother in the mtDNA. Go back just five generations and only 1 of 16 forefathers is revealed. But am I not more closely related to my Stephens ancestors than to my Buchanan ancestors because that’s my family name? No. With the exception of my Y chromosome, which came from my father, and my mtDNA and X chromosome, which came from my mother, all chromosomes and associated genes have an equal chance. One-half of my autosomal chromosomes came from my father, and one-half came from my mother. Half of each of their autosomal chromosomes came from each of their parents, but I did not get an equal mix from my four grandparents. I received approximately one-fourth of my chromosomes from each grandparent, but only approximately. For example, I may have inherited more Buchanan chromosomes from my mother than Behunin chromosomes (her paternal line), and I may have inherited more Stone chromosomes (my father’s maternal line) from my father than Stephens chromosomes. Thus, although my name is Stephens, each of my cells could contain more Buchanan autosomal chromosomes than Stephens autosomal chromosomes. Such is the random nature of inheritance.

As a result of this random nature of inheritance and the extremely small probabilities that exist for inheriting any identifiable genetic material from a distant ancestor, we predict that finding a genetic marker for some given ancestor such as Father Israel or Father Lehi will be very unlikely. The spreading of Israelite genes throughout the world is apparently part of God’s plan. Other than his promise to Abraham, however, we have little insight as to the reason. In light of what we now know about inheritance, we can be quite certain that finding the leaven in the bread will be next to impossible. It is extremely unlikely that we will ever identify the children of Lehi using genetic techniques.

**No More Strangers or Foreigners**

It turns out, however, that genes are not the only things we inherit from our ancestors; they may not even be the most important things. The apostle Paul addressed the gentile converts to the fledgling apostolic church saying, “Now therefore ye are no more strangers and foreigners, but fellowcitizens with the saints, and of the household of God” (Ephesians 2:19). This was not a genealogical relationship based on lineage or DNA. It made reference to the spiritual rebirth of the individual into the family of Christ. King Benjamin, from the Book of Mormon, spoke similarly to his people: “And now, because of the covenant which ye have made ye shall be called the children of Christ, his sons and his daughters; for behold, this day he hath spiritually begotten you; for ye say that your hearts are changed through faith on his name; therefore, ye are born of him and have become his sons and his daughters” (Mosiah 5:7).
In other words, lineage is not the only mechanism by which God’s purposes on earth are to be accomplished, or his blessings realized. Lineage and genetics are a consequence of the means by which the human family fulfills its divine charge to multiply and replenish the earth. Genetics has tremendous influence on the individual and on the course of history, but it does not solely dictate one’s potential in realizing the things of eternity. There are non-genetic factors that also exert tremendous influence on people’s lives.

“What, after all, is so special about genes?” asks Richard Dawkins in his book *The Selfish Gene*. He continues:

> The answer is that they are replicators. The laws of physics are supposed to be true all over the accessible universe. Are there any principles of biology that are likely to have similar universal validity? . . . Obviously I do not know but, if I had to bet, I would put my money on one fundamental principle. This is the law that life evolves by the differential survival of replicating entities. The gene, the DNA molecule, happens to be the replicating entity that prevails on our planet. There may be others. . . .
>
> I think that a new kind of replicator has recently emerged on this very planet. It is staring us in the face. It is still in its infancy, still drifting clumsily about in its primeval soup. . . .

The new soup is the soup of human culture. We need a name for the new replicator, a noun that conveys the idea of a unit of cultural transmission, or a unit of imitation. ‘Mimeme’ comes from a suitable Greek root, but I want a monosyllable that sounds a bit like ‘gene.’ I hope my classicist friends will forgive me if I abbreviate mimeme to meme.

We present here an example of the importance of memes in the family of Trent Stephens, again in first person: My wife is adopted. She has two older brothers who are her full genetic siblings. All three of them were adopted by the Browns shortly after birth. The Browns were incapable of bearing children. Their obstetrician/gynecologist worked with an adoption agency to arrange for them to adopt a child. Arrangements were made with a woman who was expecting and who wanted to have the baby adopted. Everything was worked out before the baby was born, so the Browns were able to take their new little baby boy home from the hospital. About a year later, the Browns’ doctor called to say that the same two people who were the genetic parents of their little boy were expecting another child. Did they want to adopt it? Yes, if it was a girl. It wasn’t, but that no longer mattered. The happy parents took the new little baby boy home to grow up with his older brother. About a year later the circumstance was repeated. The Browns had planned to adopt only two children, but when they learned that the same couple was having another baby, they didn’t even qualify their answer. “Yes, we’ll take it.” They brought the future Mrs. Kathleen Stephens home to meet her two older brothers.

All my wife knows about her biological parents is that they were of northern European stock, they were Catholic, and their three children were born in Portland, Oregon. That’s all she wants to know. Her adoptive parents are Ray and June Brown. They are the most wonderful parents a girl, or son-in-law, for that matter, could have. My wife’s older brother, Rocky, is an avid, active genealogist, doing research on the Brown family lines. We have all been to the temple doing work for their deceased ancestors.
Kathleen’s father was not a member of the Church of Jesus Christ of Latter-day Saints when the children were born. Her mother was. When the children were still very young, her father joined the church. A year later the family went to the Idaho Falls Temple and was sealed for time and all eternity. Kathleen knows no more about the Catholic Church than most any other Latter-day Saint. She grew up with a strong Latter-day Saint heritage and is a devout member of the church. I know of few women who are stronger in the faith. It is her belief, and mine, that she was meant from the premortal existence to be with her brothers and her parents. Because her parents were not able to have children, she and her siblings came by another means to live with their loving parents.

My wife’s patriarchal blessing tells her that she is “wellborn.” She was blessed with a strong body, keen mind, and natural graces. She was also told that she is of the house of Israel, descended from Ephraim. She was told to be thankful to her Heavenly Father and to her earthly parents for “the wonderful things that have come to you because of your training and your upbringing.” She was admonished to pass these things on to the next generation. Her being well-born, with a strong body and a keen mind, and being blessed with natural graces are her genetic heritage from unknown parents. Her training and upbringing, for which she is so grateful, are the heritage from her adoptive parents, as are the cultivation of her keen mind and the development of her natural graces. I see a number of mannerisms in her facial expressions and behaviors that remind me of her brothers. Her abilities to cook and sew, maintain a beautiful, cozy, comfortable home, and to raise her children with a strong sense of security and faith, come from her upbringing. Her natural grace and her ability to make and keep friends, which can lead to long telephone conversations, even with a stranger who has dialed the wrong number, probably come from a combination of her genetic background and her upbringing.

In my wife’s case, and mine, I believe, memes are stronger than genes. The many wonderful things most important to her to pass on to the next generation, and the next, come from her upbringing. They are linked to her undying faith in her Savior Jesus Christ and her belief in the restored gospel. Our children’s genes, a mixed heritage from my wife and me, as well as their upbringing, have made them strong willed and independent (probably my fault in both the genes and upbringing). That heritage has sometimes made it difficult for them to readily accept the wonderful things their mother has had to offer them. But, as her patriarchal blessing promised her, she has been able to hold her children close and teach them the gospel. The gospel is the strongest of all memes in our lives. After all, it was that meme that brought my wife’s genes and mine together. We met on the front row of a Pearl of Great Price class at Brigham Young University. How much more strongly can memes influence genes than deciding what genes come together to produce the next generation?

President Boyd K. Packer recently spoke about patriarchal blessings. Quoting Elder John A. Widtsoe, he said:

“In giving a blessing the patriarch may declare our lineage—that is, that we are of Israel, therefore of the family of Abraham, and of a specific tribe of Jacob. In the great majority of cases, Latter-day Saints are of the tribe of Ephraim, the tribe to which has been committed the leadership of the Latter-day work. Whether this lineage is of blood or adoption does not matter. . . . This is very important, for it is through the lineage of Abraham alone that the mighty blessings of the Lord for His children on earth are to be consummated.” . . .

Since there are many bloodlines running in each of us, two members of one family might be declared as being of different tribes in Israel.21 D. Jeffrey Meldrum is of the declared lineage of Ephraim, as are the remainder of his family with the exception of one sibling whose patriarchal blessing states that he is of the tribe of Benjamin.

Do Latter-day Saints whose patriarchal blessings state that they are of the tribe of Ephraim have any Israelite genetic markers? Would we expect them to? How would one identify such a marker without a standard of comparison? The tribe of Ephraim as a discrete population marched off the stage of history more than two and one-half millennia ago. There is no recognized population that would represent the gene pool of Ephraim from the time of the Assyrian conquest (722 B.C.). Each of us certainly has numerous “bloodlines,” but the realization of the promises to Abraham and Israel has less to do with genetics and more to do with the transmission from one generation to the next of spiritual blessings and op-
opportunities that transcend bloodlines.

Language is another example of the principle of memes. There is often poor correlation between the ordering of populations on the basis of language as compared to the ordering based on genetic traits. Frequently, populations that share a common or closely related language are not similarly closely related genetically. Nephi states that he was educated in the learning of the Jews and in the language of the Egyptians. Later we learn that the Book of Mormon records were kept in “reformed Egyptian.” This written language had been handed down through the generations and altered according to the Nephites’ manner of speech (see Mormon 9:32). It appears that only men of learning could read the records. The language of common usage by the Nephites was Hebrew, but it had been altered by them as well (see Mormon 9:33). King Benjamin had his three sons “taught in all the language of his fathers, that thereby they might become men of understanding” (Mosiah 1:2). Zeniff stated that he had been taught “in all the language of the Nephites” (Mosiah 9:1). Why would he have made that statement if there were no alternatives? Who among us, raised in the United States, would say in opening our autobiography, “I was taught English when I was young.” Zeniff and his people lived for a time in close contact with the Lamanites, thus perhaps raising his perspective on a different language.

One way a language can be altered in a relatively short period of time is through extended contact and interaction with speakers of another language or languages and the incorporation of native words. This is especially true when the speakers of the original language find themselves in a foreign setting at a loss for words to describe unfamiliar objects and places. Of course, the influence works in both directions, and the native languages would be expected to quickly incorporate foreign words as well. It is therefore interesting to note the repeated observation of parallels to Hebrew in a number of Native American languages. Most recently, Brian Stubbs, a specialist in Near Eastern and Native American languages, has investigated parallels between Hebrew and Uto-Aztecan, a family of languages spoken in Mesoamerica. He proposes two hypotheses to explain the relationship between these two languages: (1) Uto-Aztecan was originally at its core a Near Eastern language but later was heavily influenced by non-Hebrew (“native”) tongues, or (2) Uto-Aztecan began as the result of a Creole, or mix of languages, in which Hebrew was a significant to dominant component.

In the history of the British Isles there is a striking parallel. The invaders who set themselves up as the overlords were Normans, Vikings from France who spoke an altered form of French. The commoners, the Britons, spoke the native Old English. The language of the commoners became altered by interactions with the French-speaking Normans. The language of the priests and the sacred records, the Bible, was Latin, accessible only to the learned. In the end it was the language of the common populace that won out—English. But in the process, the Old English of 1,200 years ago lost 85 percent of its vocabulary, leaving only 15 percent of the original Old English intact 1,000 years later. Likewise, in Central America it appears to have been the language of the common populace that survived, although considerably altered, while the language of the elite, Hebrew, and the sacred language of the scriptures, a form of Egyptian, became extinct.

Evidence of contact, influence, or cultural legacy need not rely on genetic mechanisms of replication and transmission from one generation to the next or from one populace to another. Memes are an example of a nongenetic form of transmission. The Lamanite legacy of rejecting the covenant is unlikely to have left an obvious trail of genetic markers, but it is quite historical, and its influence will likely be found to extend across the generations.
Divine Kinship

The principle of covenant was familiar—in fact, central—to the clannish ancient Israelites. The types and symbolisms are perhaps less apparent to us in today’s society, except perhaps in a nationalistic sense, as in one’s patriotism to homeland. The covenant originated, according to Frank Moore Cross, not only as a social means to regulate kin relationships but also as a legal means by which the duties and privileges of kinship may be extended to another individual or group.24 Through a covenant with God, ancient Israel became the “kindred of Yahweh.” Israel was converted or adopted into the family of God, with each person taking on mutual obligations. The principle of covenant was acknowledged in the Book of Mormon account as well. The prophet Alma, in recounting his conversion experience, said, quoting the Lord, “Marvel not that all mankind, yea, men and women, all nations, kindreds, tongues and people, must be born again; yea, born of God, . . . being redeemed of God, becoming his sons and daughters” (Mosiah 27:25).

Cross examines the relationship between the concepts of covenant and kinship further: “The social organization of the West Semitic tribal groups was grounded in kinship. Kinship relations defined the rights and obligations, the duties, status and privileges of tribal members. . . . Kinship was conceived in terms of one blood flowing through the veins of the kinship group. Kindred were of one flesh, one bone.”25

The apostle Paul, in his famous letter to the gentile Christians of Galatia, made it plain that all people who are of the faith in Christ Jesus and baptized unto his name become the adopted seed of Abraham and heirs to the mission and joint heirs to the promise inherent in the Abrahamic covenant with God. It is the acceptance of and commitment to the binding terms of this covenant that justify the recognition of kinship. And yet what is on the surface a legalistic arrangement of kinship is considered by the kinsman as a blood kinship and treated accordingly.

The Lord declared to Abraham,
I will make of thee a great nation, and I will bless thee above measure, and make thy name great among all nations, and thou shalt be a blessing unto thy seed after thee, that in their hands they shall bear this ministry and Priesthood unto all nations; and I will bless them through thy name; for as many as receive this Gospel shall be called after thy name, and shall be accounted thy seed, and shall rise up and bless thee, as their father. (Abraham 2:9–10)

But where is the archaeological or genetic evidence of Abraham? “Was there ever, thousands of years ago, a personage named Abraham,” asked Tad Szulc, “whom more than three billion people—more than half of humanity—venerate as the father, patriarch, and spiritual ancestor of their faiths [2 billion Christians, 1.5 billion Muslims, 15 million Jews]?26 Neither in Babylon nor Egypt is an archaeological trace of Abraham to be found. Manfred Bietak, chairman of the Institute of Egyptology at the University of Vienna, said, “Absolutely blank. . . . As far as the Egyptians are concerned, . . . it’s as if Abraham never set foot in the delta.”27 The study of the DNA of male Jews and Middle Eastern Arabs—among them Syrians, Palestinians, and Lebanese—shows to date that they share a common set of ancestors, but none can be specifically identified as Abraham. Bietak continued, “Today he still stands out as a unique spiritual figure, transcending the frontiers of great religions. However questionable the accuracy of the scriptures, however thin the archaeological and historical evidence, Jews, Christians, and Muslims still revere him as the patriarch.”28 The Abrahamic covenant is an example of a meme. That meme—Abraham’s testimony of God—changed the world forever.

Charles Keokuk (Sac and Fox, tribe closely related to the Algonquins).
(Princeton Collection, P-546, L. Tom Perry Special Collections, Harold B. Lee Library, Brigham Young University, Provo, Utah)
Ultimately, in a modern era of mobility and diversity, the matter comes down to one of personal commitment to values and beliefs, and participation in the fellowship of believers, while living among a broader community. It has less to do with genealogy or bloodlines or tribal affiliations. The Abrahamic covenant, reestablished as the new and everlasting covenant of the gospel of Jesus Christ, is extended to all. Those who embrace it become God’s “people.”

These concepts of kinship bear directly on the Book of Mormon account of a branch of Israel “run[ning] over the wall.” The data suggest that a small colony under the leadership of Nephi established a kinship within the fabric of a larger resident population. In effect, it was a situation of “them and us”—Lamanites and Nephites. The Nephites were the believers, while the Lamanites were everyone else (see, for example, Jacob 1:14; Alma 3:11). This perception differs little from the concept of “Jew and Gentile,” the latter term encompassing all non-Jews. With final destruction of the Nephite kinship, all who remained in the Americas were “Lamanites.” If this interpretation is correct, then the statement from the introduction to the Book of Mormon, “After thousands of years, all were destroyed except the Lamanites, and they are the principal ancestors of the American Indians” is fully justified. All Native Americans are in fact descended from these “Lamanites”—these “Gentiles” of the record of Nephi’s people. Lehi’s prophecy to Laman and Lemuel was realized: their heritage of dissension continued, and their legacy never died out—in the Abrahamic sense or in the Buchanan context, even if their genetic markers may have.

According to God’s promise to Abraham, remnants of the house of Israel have been scattered among all nations of the earth, like leaven in bread. Whereas leaven adds to the quality of the bread, too much leaven, to the point where it can be tasted in the bread, decreases the quality. We all benefit from our genetic and memic heritage from the house of Israel, but we probably will never find genetic traces of the leaven in most nations of the world. We probably will never find a genetic marker for the children of Lehi, for the children of Abraham, or even for the “Children of God.” Ultimately we are impressed by the realization that the fundamental question of the veracity of the claims of the Book of Mormon lies beyond the ken of modern DNA research. The final implications of the book, as a witness of the prophetic calling of Joseph Smith and as another testament of the divinity of Jesus Christ, remain within the realm of faith and individual testimony.
The Word

IN PRINCIPIO ERAT VERBUM

Papyrus Bodmer

Book of Kells
In the beginning was the Word
The Book of Mormon is perhaps the most Logos-centric of all scripture. Its significance as the word of God (Logos) is expressed in terms of its divine origin and role. Written “by the spirit of prophecy and of revelation,” this sacred text was destined to “come forth by the gift and power of God” as an additional testimony of the word of God unto the inhabitants of the earth (see title page, 1 Nephi 13:38–41; 2 Nephi 29:12–14; Mormon 7:8–9). In accordance with that prophetic role, references in the record to the word of God are rich and varied.

Like other scriptural sources, the Book of Mormon contains cosmological references to the word of God as well as metaphorical images that reveal how the word of God intersects with people's lives on a personal level. The many references to the word of God constitute an important thematic thread running through the record and indicate how fully the Book of Mormon peoples experienced the word of God in their lives. This study explores the multifaceted nature of this concept with enhanced appreciation for the Book of Mormon and its messages as the primary end in view.

Of Great Worth

Through both its narrative and commentary, the Book of Mormon places great value on written records. It is a point of emphasis, for example, that the Lord directed Lehi to send his sons on a risky mission to obtain the plates of brass from Laban (see 1 Nephi 3–4). Mormon's pleased reaction upon discovering the smaller plates of Nephi while he was abridging the larger plates is another indication of the importance of sacred records (see Words of Mormon 1:3–6). The authors of the Nephite record were familiar with earlier scriptures and displayed their reverence for them by often quoting them, sometimes after a gap of several hundred years. Moreover, there is a pervasive awareness on the part of the book's authors, narrators, and abridgers that they were recording the word of God, that the resulting record would come forth in a unique fashion, and that it would be of great worth.

Upon searching the plates of brass, Lehi was filled with the Spirit and prophesied that that record would never perish (see 1 Nephi 5:17–19). Nephi’s subsequent vision taught him that the rod of iron that his father had seen in vision was “the word of God, which led to the . . . tree of life,” a symbol of the love of God, the “most desirable above all things” (see 1 Nephi 11:22, 25). Thus it becomes clear from the outset of the Book of Mormon why the word of God came to be so highly valued by Nephi and his descendants.

Jesus Christ: The One Who Speaketh

In the Christian tradition that developed in the ancient Near East and Mediterranean region, Jesus Christ became identified with the concept of the Logos, the word of God, largely because the preface of John's Gospel equates the Savior with the Greek term for “word,” logos: “In the beginning was the Word, and the Word was with God, and the Word was God” (John 1:1). This metaphor associates Christ with concepts of the Logos borrowed from Greek philosophy and Roman Stoicism. John was highly influenced by Greek and Roman culture, which spread to Palestine with Alexander the Great’s military incursions there in the third century B.C. and with later rule by the Roman Empire. Lehi’s colony, however, had left the area toward the beginning of the sixth century B.C., thereby avoiding those influences on their culture and scriptural tradition.

Despite the Book of Mormon authors’ isolation from Greek and Roman influences, the text strongly emphasizes the association of Jesus Christ and the word of God, suggesting that the concept predates those influences. The most striking emphasis of this kind appears in Alma’s commandments to his son Shiblon:

And now, my son, I have told you this that ye may learn wisdom, that ye may learn of me that
there is no other way or means whereby man can be saved, only in and through Christ. Behold, he is the life and the light of the world. Behold, he is the word of truth and righteousness. (Alma 38:9; compare 3 Nephi 18:24; John 1:4; Doctrine and Covenants 84:45–46)

Alma’s speech is not as direct as John’s in personifying the word as Jesus Christ, yet Alma conveys the essential relationship between Christ and the word of God: that Christ is the source of “the word of truth and righteousness.” Joseph Smith’s inspired translation of John 1:1 clarifies John’s direct equivalence of Jesus Christ and the word by using a hierarchically arranged ordering: “In the beginning was the gospel preached through the Son. And the gospel was the word, and the word was with the Son, and the Son was with God, and the Son was of God” (John 1:1 JST). Here Christ is depicted as being responsible for imparting the word (the gospel).

As in John’s account, the word of God is personified in Helaman 3:29–30 as “lead[ing] the man of Christ in a . . . course across that everlasting gulf of misery . . . and land[ing] their souls . . . in the kingdom.” This rhetorical device illustrates the saving power of the scriptures (as in Lehi’s and Nephi’s visions of the iron rod that represented the word of God). Yet in this passage the role of both guiding and delivering souls is the role of Jesus Christ as the Redeemer. In this way the passage both characterizes the role of the Redeemer without explicitly stating it and personifies the scriptures as a very literal tool of redemption. Because Jesus Christ is strongly associated with the word, it is often difficult in scriptural interpretation to differentiate between the two.

The strong association between the word of God and Jesus Christ is emphasized in Moroni’s narrative insertion in Ether 4, where he records the words that the Savior spoke to him concerning the coming forth of the records. Significantly, Jesus Christ characterizes himself as speaking: “for I am he who speaketh” (Ether 4:8), and later, “for ye shall know that it is I that speaketh, at the last day” (Ether 4:10; see 1 Nephi 11:11, where the Lord speaks to Nephi “as a man speaketh with another”). Speaking to Moroni, the Savior acknowledges his role as the one who speaks the word of God (Ether 4:8) and emphasizes the power of his word: “And at my command the heavens are opened and are shut; and at my word the earth shall shake; and at my command the inhabitants thereof shall pass away, even so as by fire” (Ether 4:9). As we will now see, the power of Christ’s word is often characterized by the metaphor of the Logos-tomeus.

**Logos-tomeus: A Metaphor for the Word of God**

The numerous and varied scriptural references to the Logos-tomeus date back at least to the composition of the book of Isaiah. This metaphor characterizes the word of God, Logos, as a tomeus (Greek for “cutter”). Scripture often employs the word sword for this meaning, especially the “two-edged” sword. John A. Tvedtnes presents an extensive list of instances in which the terms rod and sword mean the word of God in both the Bible and latter-day scripture. He calls attention to how the word of God is similarly characterized in Hebrews 4:12 and Helaman 3:29–30, noting also that Hebrews 4:12 is one of the most frequently quoted scriptures in the early sections of the
Doctrine and Covenants. These passages are quoted below for easy comparison:

For the word of God is quick, and powerful, and sharper than any two-edged sword, piercing even to the dividing asunder of soul and spirit, and of the joints and marrow, and is a discerner of the thoughts and intents of the heart. (Hebrews 4:12)

Yea, we see that whosoever will may lay hold upon the word of God, which is quick and powerful, which shall divide asunder all the cunning and the snares and the wiles of the devil, and lead the man of Christ in a strait and narrow course across that everlasting gulf of misery which is prepared to engulf the wicked—and land their souls, yea, their immortal souls, at the right hand of God in the kingdom of heaven, to sit down with Abraham, and Isaac, and with Jacob, and with all our holy fathers, to go no more out. (Helaman 3:29–30)

Behold, I am God; give heed [un]to my word, which is quick and powerful, sharper than a two-edged sword, to the dividing asunder of both joints and marrow; therefore give heed unto my word[s]. (D&C 6:2; 11:2; 12:2; 14:2)

Behold, I say unto you, my servants Ezra and Northrop, open ye your ears and hearken to the voice of the Lord your God, whose word is quick and powerful, sharper than a two-edged sword, to the dividing asunder of the joints and marrow, soul and spirit; and is a discerner of the thoughts and intents of the heart. (D&C 33:1)

Despite the differences of time and location, these scriptures exhibit striking similarities. All characterize the word of God as “quick and powerful.” The Greek words that supply these meanings in Hebrews 4:12 are zωος (living) and ἐνεργής (active, productive). In addition, all of these references use a form of the construction to divide asunder. There are differences, however, in what is divided. Hebrews 4:12 and the sections from the Doctrine and Covenants make direct references to the dividing that is associated with offering sacrifices (i.e., “joints and marrow”). Helaman 3:29, Hebrews 4:12, and Doctrine and Covenants 33 emphasize the epistemological significance of the word of God and link it to the ability to discern (divide) truth from falsehood.

Noting the prevalent use of this metaphor, Tvedtnes surmises, “The epistle to the Hebrews probably quoted a more ancient source, which was also borrowed in Helaman 3:29–30.” Further support of this idea is the use of the metaphor by the Jewish philosopher Philo of Alexandria, a near contemporary of Jesus Christ. Philo is known for his extensive philosophical works, including his commentaries on the writings of Moses. Two statements in his treatise entitled Heres (also known as Who Is the Heir of Divine Things?) employ the metaphor of the Logos-tomeus to emphasize the dividing function of the word of God:

He wishes you to think of God who cannot be shewn, as severing through the Severer of all things, that is his word, the whole succession of things material and immaterial whose natures appear to us to be knitted together and united. That severing word whetted to an edge of utmost sharpness never ceases to divide.¹

Thus God sharpened the edge of his all cutting word, and divided universal being.²

Philo does not characterize the word as “quick and powerful,” but he does characterize it as “sharp,” as do many of the scriptural references cited above and others that will be discussed below.

The use of the Logos-tomeus metaphor in the same general time period by Paul, Helaman, and Philo—who were geographically removed from one another—points to a more ancient source of this metaphor, one that predates the departure of Lehi’s colony to the New World. Its widespread use also indicates that different authors considered it a very apt characterization of the word of God.

As a master metaphor, the Logos-tomeus reflects belief that the word of God can divide or differentiate on many levels. On a literal level, the two-edged sword divides the sacrificial animal. On an epistemological level, the word of God helps us discern truth from falsehood. And on an axiological level, the word of God defines righteousness and unrighteousness.³ Philo’s characterization of the word as...
“dividing” is unique in that he associates it with the literal act of creation rather than with the literal act of sacrifice. Interestingly, however, Philo’s 

Heres is a commentary on Genesis 15, the chapter in which Abraham offers the sacrifices that seal his covenant with God. In fact, Philo’s discussion of the Logos-tomeus begins when he explains that Abraham “divided them [the sacrificial animals] in the midst” (Genesis 15:10).

The Word of God and Creation

Philo of Alexandria explored the dynamic of creation through the concept of the Logos-tomeus. In his view the word of God accomplishes creation through the continuous differentiation of things “material and immaterial.” From the opening verses of Genesis, we witness a similar dynamic: “And God said, Let there be light: and there was light . . . : and God divided the light from the darkness” (Genesis 1:3–4). Whether focusing on the concept of division or not, all scriptural accounts of creation seem to indicate a strong association between the spoken word of God and the creative acts of God.

In the Pearl of Great Price, God instructs Moses about the creation of the world: “And by the word of my power, have I created them, which is mine Only Begotten Son, who is full of grace and truth” (Moses 1:32). A few verses later, God associates the “uncreation” of worlds with the concept of the word as well: “For behold, there are many worlds that have passed away by the word of my power” (Moses 1:35). Interestingly, in these two scriptures the common ordering of power and word is reversed. The word is presented as an emanation of “power,” that is, something that derives and goes forth from it. The only other use of this construction in scripture occurs in Moses 2:5, Joseph Smith’s inspired translation of Genesis 1:5: “And I, God, called the light Day; and the darkness, I called Night; and this I did by the word of my power, and it was done as I spake.” Significantly, it is God who speaks to Moses, recognizing that Jesus Christ emanates from Him and equating “the word” directly with Jesus Christ, His Only Begotten Son. But God the Father is also acknowledging that the words that Jesus Christ speaks (and thus the creative acts that Jesus Christ accomplishes) originate with Him. He explains to Moses, “My works are without end, and also my words, for they never cease” (Moses 1:4).

This association between the word of God and creation also appears in the Book of Mormon. The first reference occurs in Jacob’s speech to the Nephites: “For behold, by the power of his word man came upon the face of the earth, which earth was created by the power of his word” (Jacob 4:9). We notice that in this passage, unlike the passages in the Book of Moses, “power” emanates from “his [God’s] word.” Moroni presents the same association between word, power, and God’s act of creation:

Who shall say that it was not a miracle that by his word the heaven and the earth should be; and by the power of his word man was created of the dust of the earth; and by the power of his word have miracles been wrought? (Mormon 9:17)

The fact that Jacob, who was one of the original colonists, and Moroni, who was the last known survivor of his people, both appeal to this imagery shows its enduring importance for Nephite teachers.

Power and the Word of God

Scripture indicates that the power of the word of God is not limited to the initial acts of creation, but exerts control over the physical world as well. Helaman 12, one of Mormon’s admonitory insertions into his history of the Nephites, presents a stirring litany on the power of the word of God over the natural elements. Mormon writes:

O how great is the nothingness of the children of men; yea, even they are less than the dust of the earth. For behold, the dust of the earth moveth hither and thither, to the dividing asunder, at the [spoken] command of our great and everlasting God. (Helaman 12:7–8)

Significantly, the power of the word of God over natural elements can be transferred to individuals, a common theme in scripture. When this happens, the word of God is often characterized as the release of a power not intrinsic to the person speaking. In many of these instances the power of the word of God is tied directly to miracles. Two such instances are recorded about the disciples of Christ who suffered persecutions:

And they were cast down into the earth; but they did smite the earth with the word of God, insomuch that by his power they were delivered out of the depths of the earth; and therefore they could not dig pits sufficient to hold them. (3 Nephi 28:20)
Therefore they did exercise power and authority over the disciples of Jesus who did tarry with them, and they did cast them into prison; but by the power of the word of God, which was in them, the prisons were rent in twain, and they went forth doing mighty miracles among them.

(4 Nephi 1:30)

One of the most moving passages in the Book of Mormon appears in Mormon 8:24. Having taken over the sacred records after his father’s death, Moroni discusses the valiant who have died and how they will cry from the dust. The following verse summarizes many of the miracles that the people of God were able to bring about by the power of his word:

And he knoweth their prayers, that they were in behalf of their brethren. And he knoweth their faith, for in his name could they remove mountains; and in his name could they cause the earth to shake; and by the power of his word did they cause prisons to tumble to the earth; yea, even the fiery furnace could not harm them, neither wild beasts nor poisonous serpents, because of the power of his word. (Mormon 8:24)

The Book of Mormon also emphasizes that it was the word of God that allowed Old Testament prophets to perform miracles. In rebuking his brothers for criticizing his desire to carry out the Lord’s command to build a ship, Nephi points out all that Moses was able to accomplish through the power of the word of God. After citing many examples of Moses’ miracles, Nephi concludes:

And it came to pass that according to [God’s] word he did destroy them; and according to his word he did lead them; and according to his word he did do all things for them; and there was not any thing done save it were by his word. (1 Nephi 17:31)

The experiences of Lehi and his family in the wilderness are strikingly similar to the experiences of Moses and the Israelites in the desert. Both are displaced groups who must hearken to the word of the Lord in order to reach their promised destinations. Nephi’s summation of the Israelites’ experiences—that “according to [God’s] word he did do all things for them; and there was not any thing done save it were by his word”—echoes the experiences of Lehi’s group. The emerging Nephite culture continued to value the word of God, a fact mirrored thematically throughout the Book of Mormon. As we will see, the Nephite record depicts the differing roles of the word of God in people’s lives.

The Word of God as Comforting

The word of God is often characterized as providing comfort to those who accept it. In an early example, Jacob calls the Nephites together to chasten those in transgression. Before spelling out their iniquities, he says, “And it supposeth me that they [the innocent] have come up hither to hear the pleasing word of God, yea, the word which healeth the wounded soul” (Jacob 2:8).

Later in the record we find a similar characterization of the word of God. Ammon and the other sons of Mosiah have just been reunited after their missions to the Lamanites. Ammon rejoices in the power that the word of God has brought about in the lives of the people whom they have taught:

Behold, how many thousands of our brethren has he loosed from the pains of hell; and they are brought to sing redeeming love, and this because of the power of his word which is in us, therefore have we not great reason to rejoice? (Alma 26:13)

The Word of God as Discomforting

Just as the word of God can be comforting to those who accept it, it can be discomforting—“hard,” “sharp,” or “strict”—to those who reject it. This dichotomy is a prevalent theme in the Book of Mormon. The prophet Jacob explains it in these terms:

O, my beloved brethren, give ear to my words. Remember the greatness of the Holy One of Israel. Do not say that I have spoken hard things against you; for if ye do, ye will revile against the truth; for I have spoken the words of your Maker. I know that the words of truth are hard against all uncleanness; but the righteous fear them not, for they love the truth and are not shaken. (2 Nephi 9:40)

Nephi expresses a similar sentiment after explaining the vision of the tree of life to his brothers:

And it came to pass that I said unto them that I knew that I had spoken hard things against the wicked, according to the truth; and the righteous have I justified, and testified that they should be lifted up at the last day; wherefore, the guilty taketh the truth to be hard, for it cutteth them to the very center. (1 Nephi 16:2)
Nephi’s speech contains a reference to the Logos-tomeus metaphor in which the truth of the word of God acts as a “cutter” (“it cutteth them”) and causes pain to the guilty. Abinadi expresses the same idea when he challenges King Noah and his wicked priests: “I perceive that it [his message] cuts you to your hearts because I tell you the truth concerning your iniquities” (Mosiah 13:7).

The characterization of the word of God as “sharp” also applies to the dichotomy of how the righteous and the unrighteous receive the word of God. An early example of this is recorded in Lehi’s speech to Laman and Lemuel, wherein he rebukes them for their treatment of Nephi:

And ye have murmured because he hath been plain unto you. Ye say that he hath used sharpness; ye say that he hath been angry with you; but behold, his sharpness was the sharpness of the power of the word of God, which was in him; and that which ye call anger was the truth, according to that which is in God, which he could not restrain, manifesting boldly concerning your iniquities. (2 Nephi 1:26)

Mormon discusses in similar terms the preaching of the word at the time of King Benjamin: “And there were many holy men in the land, and they did speak
the word of God with power and with authority; and they did use much sharpness because of the stiff-neckedness of the people” (Words of Mormon 1:17). In his second epistle to his son Moroni, Mormon notes that he too must use “sharpness” when addressing the people: “Behold, I am laboring with them continually; and when I speak the word of God with sharpness they tremble and anger against me; and when I use no sharpness they harden their hearts against it” (Moroni 9:4).

The word of God also offends the wicked because of its strictness, as seen in Alma's reflections at the end of his mission to the Zoramites:

Now Alma, being grieved for the iniquity of his people, yea for the wars, and the bloodsheds, and the contentions which were among them; and having been to declare the word, or sent to declare the word, among all the people in every city; and seeing that the hearts of the people began to wax hard, and that they began to be offended because of the strictness of the word, his heart was exceedingly sorrowful. (Alma 35:15)

Jacob, when chastising the Nephites for their iniquities, notes the sorrow that the righteous feel when witnessing iniquity: “And because of the strictness of the word of God, which cometh down against you, many hearts died, pierced with deep wounds” (Jacob 2:35).

The Word of God as Nourishing

Another dimension of the word of God is that it can provide nourishment. For example, Jacob challenges his fellow Nephites: “For behold, after ye have been nourished by the good word of God all the day long, will ye bring forth evil fruit, that ye must be hewn down and cast into the fire?” (Jacob 6:7). In discussing conversion, Moroni likewise employs the metaphor of the word of God as a nourishing agent:

Their names were taken, that they might be remembered and nourished by the good word of God, to keep them in the right way, to keep them continually watchful unto prayer, relying alone upon the merits of Christ, who was the author and the finisher of their faith. (Moroni 6:4)

In speaking comforting words to the Nephites who have survived the destructions following his crucifixion, the Savior characterizes himself as providing nourishment:

O ye people of these great cities which have fallen, who are descendants of Jacob, yea, who are of the house of Israel, how oft have I gathered you as a hen gathereth her chickens under her wings, and have nourished you. (3 Nephi 10:4)

The imagery that Jesus Christ employs in this passage expresses the idea that he nourishes his people by imparting his word unto them, either directly or through prophets. Only one scriptural reference outside of the Book of Mormon characterizes the word of God as nourishing: “If thou put the brethren in remembrance of these things, thou shalt be a good minister of Jesus Christ, nourished up in the words of faith and of good doctrine, whereunto thou hast attained” (1 Timothy 4:6).

Of course, one must embrace and partake of the word of God in order to be nourished. Thus Jacob counsels the Nephites to “feast upon” the word of God:

Wherefore, do not spend money for that which is of no worth, nor your labor for that which cannot satisfy. Hearken diligently unto me, and remember the words which I have spoken; and come unto the Holy One of Israel, and feast upon that which perisheth not, neither can be corrupted, and let your soul delight in fatness. (2 Nephi 9:51; compare Isaiah 55:1–2)

The image of feasting upon the word of God appears six times in scripture, all in the Book of Mormon. In the excerpt from Jacob’s speech cited above, the image of feasting on the word is visually developed. The word of God is eternal; thus it is like food that cannot spoil. It is also abundant and pleasing, so Jacob states, “Let your soul delight in fatness.” Nephi employs this metaphor of feasting in the closing chapters of 2 Nephi: “Wherefore, if ye shall press forward, feasting upon the word of Christ, and endure to the end, behold, thus saith the Father: Ye shall have eternal life” (2 Nephi 31:20, see 2 Nephi 32:3). Jacob uses the metaphor twice when he addresses the Nephites in the temple (see Jacob 2:9; 3:2).

In Alma’s speech to the poor of the Zoramites, the images of being nourished by the word and feasting upon the word appear in a slightly different context. Alma counsels them to nourish the word of God, completing the imagery that we are not only nourished by the word, but that we need to nourish it as well: “If ye will nourish the word . . . by your faith . . . it shall be a tree springing up into everlasting life” (Alma 32:41). This process will produce fruit, he explains, and “ye shall feast upon this fruit even until ye are filled” (Alma 32:42). Alma empha-
sizes that those who do not nourish the word “can never pluck of the fruit of the tree of life” (Alma 32:40), a point that resonates with Nephi’s imagery in 1 Nephi 11:25.

The word of God can also be “tasted,” as seen in Alma’s commandments to his son Helaman:

For because of the word which [God] has imparted unto me, behold, many have been born of God, and have tasted as I have tasted, and have seen eye to eye as I have seen; therefore they do know of these things of which I have spoken, as I do know; and the knowledge which I have is of God. (Alma 36:26)

This metaphor is very similar to feasting upon the word of God, but it is found in the Bible as well. It first appears in Psalms: “How sweet are thy words unto my taste! yea, sweeter than honey to my mouth” (119:103). Alma, however, uses this image in the more active sense of gaining understanding: because he has preached the word of God, many people have come to understand the things of God as he understands them. Paul employs this image in a similar sense, but he discloses its perilous aspect when he explains that those who have been “once enlightened, and have tasted of the heavenly gift, and . . . tasted the good word of God,” and later “fall away” cannot be “renew[ed] . . . unto repentance” (Hebrews 6:4–6).

The word of God as Enlightening

The Book of Mormon also testifies that it is the word of God that enlightens us and expands our minds (see Alma 32:34). This concept is often conveyed through the images of light and darkness in which the word of God is characterized as bringing people into the light and unto understanding. Through Jacob, the Lord prophesies that he “will be a light unto them forever, that hear my words” (2 Nephi 10:14). In a speech to his brethren, Nephi makes a similar point and then adds a warning about spiritual darkness: “After I have spoken these words, if ye cannot understand them it will be because ye ask not, neither do ye knock; wherefore, ye are not brought into the light, but must perish in the dark” (2 Nephi 32:4). Alma develops this dichotomy of light versus darkness more fully in his speech to the people of Zarahemla. Recounting the conversion of those who embraced his father’s teachings, he states:

Behold, he [God] changed their hearts; yea, he awakened them out of a deep sleep, and they awoke unto God. Behold, they were in the midst of darkness; nevertheless, their souls were illuminated by the light of the everlasting word; yea, they were encircled about by the bands of death, and the chains of hell, and an everlasting destruction did await them. (Alma 5:7)

The enlightening word of God enables us to discern truth from falsehood. For example, it can expose and “divide asunder” the temptations and snares of the devil (see Helaman 3:29). Alma 35 records that the rulers, priests, and teachers of the Zoramites would not listen to Alma and Amulek because the word of God “did destroy their craft” by which they propagated lies and deceit in order to exercise power over the people (see vv. 3–5). Understanding this quality of the word of God, Alma, at an earlier time, relinquished the judgment-seat and embarked on a ministry in which he hoped to “pull down, by the word of God, all the pride and craftiness and all the contentions which were among his people, seeing no way that he might reclaim them save it were in bearing down in pure testimony against them” (Alma 4:19).

In Nephi’s writings the image of “feeling” the word means “to understand” or “to internalize” the word. Nephi chastises his brothers because their lack of understanding is a direct result of their unresponsiveness to the word of God:
Ye are swift to do iniquity but slow to remember the Lord your God. Ye have seen an angel, and he spake unto you; yea, ye have heard his voice from time to time; and he hath spoken unto you in a still small voice, but ye were past feeling, that ye could not feel his words; wherefore, he has spoken unto you like unto the voice of thunder, which did cause the earth to shake as if it were to divide asunder. (1 Nephi 17:45)

The Word of God and the Last Days

Excluding the book of Ether, the narrative time recorded in the Book of Mormon dates from around 600 B.C. to around A.D. 421. Throughout this 1,000-year period, the numerous Book of Mormon authors shared an understanding of the importance of the records they were keeping and knew through prophecy that the resulting book would come forth in a unique fashion. This knowledge was made known to even the earliest prophets. In his closing words to his son Joseph, Lehi prophesied of the Prophet Joseph Smith and of the coming forth of the Nephite record (see 2 Nephi 3:11–15). Nephi recognized from the beginning that he was making plates and keeping sacred records for a “wise purpose” (1 Nephi 9:5; see 1 Nephi 6; 19). Enos, knowing the struggles that his brethren, the Lamanites, would endure, prayed “that the Lord God would preserve a record of my people, . . . that it might be brought forth at some future day” (Enos 1:13). The Lord responded, “Thy fathers have also required of me this thing; and it shall be done unto them according to their faith; for their faith was like unto thine” (v. 18).

Several scriptures in the Book of Mormon refer specifically to the fact that the records would be “brought forth” in the latter days. Two images are commonly used to express this idea: that the words contained in the records would “hiss forth” and that the Book of Mormon peoples would figuratively “cry from the dust.”

The word hiss has varied meanings in the scriptures. Interestingly, it is found only in the Old Testament and the Book of Mormon. As a noun or verb, hiss can be used in a derogatory sense: “And I will make this city desolate, and an hissing; every one that passeth thereby shall be astonished and hiss because of all the plagues thereof” (Jeremiah 19:8; emphasis added). This is the most common sense of hiss in the Old Testament, and this sense appears three times in the Book of Mormon (see 1 Nephi 19:14; 3 Nephi 16:9; 29:8). Isaiah used the verb hiss in a positive sense to convey the meaning of gathering: “And he will lift up an ensign to the nations from far, and will hiss unto them from the end of the earth: and, behold, they shall come with speed swiftly” (Isaiah 5:26). Isaiah’s words are repeated in 2 Nephi 15:26. In the Old Testament, Zechariah records, “I will hiss for them, and gather them” (Zechariah 10:8).

Whereas the Lord will “hiss” to gather his people, the Book of Mormon describes that the records, the word of God, would “hiss forth.” Unique to the Book of Mormon, this construction refers specifically to the coming forth of the scriptures. The Lord prophesies to Nephi:

And also, that I may remember the promises which I have made unto thee, Nephi, and also unto thy father, that I would remember your seed; and that the words of your seed should proceed forth out of my mouth unto your seed; and my words shall hiss forth unto the ends of the earth, for a standard unto my people, which are of the house of Israel; and because my words shall hiss forth—many of the Gentiles shall say: A Bible! A Bible! We have got a Bible, and there cannot be any more Bible. (2 Nephi 29:2–3)

Moroni uses this same image in one of the last verses of the Book of Mormon:

I declare these things unto the fulfilling of the prophecies. And behold, they shall proceed forth out of the mouth of the everlasting God; and his word shall hiss forth from generation to generation. (Moroni 10:28)

The image of crying from the dust is also unique to the Book of Mormon, and its initial use, like the image of hissing forth, comes from the Lord. Lehi records the following prophecy in his closing remarks to his son Joseph:

And the words which he shall write shall be the words which are expedient in my wisdom should go forth unto the fruit of thy loins. And it shall be as if the fruit of thy loins had cried unto them from the dust; for I know their faith. And they shall cry from the dust; yea, even repentance unto their brethren, even after many generations have gone by them. And it shall come to pass that their cry shall go, even according to the simplicity of their words. (2 Nephi 3:19–20)
Nephi repeats this image in his farewell at the close of 2 Nephi: “I speak unto you as the voice of one crying from the dust: Farewell until that great day shall come” (33:13).

Moroni commonly repeats the words of earlier Book of Mormon authors, demonstrating his understanding of and appreciation for scripture. As noted above, he reiterates in the closing verses of his book that the scriptures would “hiss forth.” He also adopts the image that the Book of Mormon peoples will “cry from the dust” and uses this image on three occasions—the first in Mormon 8:23 (the Lord will remember his covenant with Moroni’s predecessors who “shall cry, yea, even from the dust will they cry unto the Lord”), the second in Ether 8:24 (those “who have been slain” by a secret combination will “cry from the dust for vengeance”), and the third in Moroni’s farewell speech:

And I exhort you to remember these things; for the time speedily cometh that ye shall know that I lie not, for ye shall see me at the bar of God; and the Lord God will say unto you: Did I not declare my words unto you, which were written by this man, like as one crying from the dead, yea, even as one speaking out of the dust? (Moroni 10:27)

Toward Fuller Appreciation and Understanding

This study has analyzed the varied and rich ways that the word of God is characterized in the Book of Mormon. We often approach the scriptures on different levels. At times we focus on the narrative stories that edify us and serve as examples in our lives. At other times we focus on the advice of the prophets concerning spiritual and temporal subjects. Searching the subtleties of the language of the Book of Mormon helps us to appreciate the importance of scripture in developing an understanding of our lives and our relationship with our Heavenly Father and the Lord Jesus Christ. Because Jesus Christ speaks to us through scripture, the language of scripture mediates our understanding of who we are and who we strive to be.

As we study the word of God in the Book of Mormon, we recognize important similarities and differences in how this concept is characterized in other scripture. Significantly, however, the fundamental characteristics of the word of God are constant throughout scripture, namely, that the word of God played an essential role in the creation, that it holds a continuing influence over the natural elements, and that it can be transferred to individuals. Certain images associated with the word of God also remain constant throughout scripture, most notably the metaphor of the Logos-tomeus. Some images are unique to the Book of Mormon because they describe a unique circumstance, such as the concept that the Book of Mormon peoples would “cry from the dust.” As expected, other images in the Book of Mormon seem to have come directly from the Old World, such as the concept of “tasting” the word or “hissing,” and seem to have evolved during the 1,000-year narrative period of the Book of Mormon. All of these images serve to demonstrate the multifaceted and powerful nature of the word of God.
SECRET COMBINATIONS

AND FLAXEN CORDS

Anti-Masonic Rhetoric & the Book of Mormon
The appearance of terms such as *secret combinations* and *flaxen cord* in the Book of Mormon has led critics to claim that the book reflects a 19th-century-American cultural milieu. Those two particular terms tie especially to the world of Freemasonry, they assume, and reveal that Joseph Smith simply borrowed them and wove them into what they believe is a fabricated narrative. What are we to make of such claims? For one thing, a search of literature shows that those terms were by no means peculiar to Joseph’s environment but appear in a wide range of early American and British publications. Moreover, the Book of Mormon applies the terms to situations that were foreign to Joseph’s world.
Secret Combinations and the Masons

In 1826 a bricklayer named William Morgan mysteriously disappeared from Batavia, New York. Because Morgan was in the process of publishing a book on Freemasonry that disclosed the ceremonies and practices of the order, suspicion fell on the Masons. Politicians seized upon the issue, an anti-Masonic party fielded candidates in several elections, Freemasonry was attacked in state legislatures, and anti-Masonic agitation played a part in the presidential election of 1828.

Historians and critics have often claimed that the Book of Mormon reflects the anti-Masonic rhetoric that was rife in upstate New York during the years preceding its publication. For example, Fawn Brodie stated that “Joseph Smith was writing the Book of Mormon in the thick of a political crusade. . . . And he quickly introduced into the book the theme of the Gadianton band.” Another author likewise claims that “Book of Mormon accounts of robbers resemble reports of early nineteen-century political insurgencies because the scriptural narrative was imbued with the anti-Masonic rhetoric permeating Joseph Smith’s culture.” A third writer asserts that secret societies which promise their initiates power and wealth—complete with elaborate ritual, secret signs and tokens, and special clothing—are not distinctive cultural traits and do not require cultural transmission to have their existence. However, there is a noticeable linguistic dependency on anti-Masonic rhetoric in the Book of Mormon’s description of ancient secret societies.

At first glance this claim of rhetorical or linguistic influence on Joseph Smith and thereby the Book of Mormon may seem unlikely. Most anti-Masonic writing was florid even by the standards of the time and formed an odd contrast to the lean vocabulary and spare narrative style of the Book of Mormon. But what critics mean when they speak of the presence of anti-Masonic rhetoric in the Book of Mormon is that the book adopted certain words and phrases that the anti-Masons also used. For example, one author asserts that “secret oaths, secret plans, secret words, secret combinations, secret signs, secret abominations, secret band, secret work, secrets—all [such expressions] were anti-Masonic terms of the time.” But there is no reason to believe that the anti-Masons held the copyright on the word secret. Its presence in the Book of Mormon only shows that Joseph Smith and his contemporaries spoke a common language.

Most writers focus their attention on just two of these terms: secret society and secret combination. The anti-Masons frequently referred to the Masonic fraternity as a secret society. The term does occur three times in the Book of Mormon (3 Nephi 3:9; Ether 9:6; Ether 11:22), but it also appears in many writings of the time that have no connection to Freemasonry. It was widely used in reference to temperance societies; college fraternities; criminal organizations; medieval Moslem sects; covert Protestant groups in Catholic countries; revolutionary movements in France, Germany, Ireland, Poland, and Italy; and a variety of other movements. When anti-Masonic writers spoke of secret societies, their use of the term clearly referred to more than just the Masonic fraternity. For example, a speaker to an anti-Masonic
convention held in 1828 stated that the delegates were not only opposed to Masonry but intended to “discourage the growth and continuance of ALL secret societies whatever.”

The term secret combinations is more distinctive and deserves closer scrutiny. Critics of the Book of Mormon have long argued that its presence in the Book of Mormon betrays the book’s 19th-century origins and that in upstate New York in the 1820s it could only have been a reference to Freemasonry. Even Mark D. Thomas, a sympathetic commentator, suggests that the term was a “code name for Masonry.” Another author states that “at the time of the Book of Mormon’s publication the term ‘secret combinations’ was used almost exclusively to refer to Freemasonry.” In support of these claims, such authors point to seven occurrences of the term found in four upstate New York newspapers between 1827 and 1829.

At first this list may look impressive, but aspects of timing and location do not match up with what we know of Joseph Smith’s whereabouts during the same period. Indeed, on closer examination, it is most unlikely that any occurrences of the term could have directly influenced the Book of Mormon. The first instance of the term secret combination occurred in March 1827 in a newspaper published in Batavia, New York, about 60 miles from Palmyra. Three more instances appeared in Palmyra newspapers in July, November, and December of 1828. At that time Joseph Smith was living not in Palmyra but in Harmony, Pennsylvania, a distance of two or three days’ travel. The remaining three occurrences were published in Palmyra newspapers in September, October, and November of 1829, several months after the translation was completed and the copyright secured and while the printing was under way. Therefore, the argument that Joseph Smith adopted the term from anti-Masonic writings cannot be sustained by these sources. It will stand only if it can be shown that these newspaper articles are representative of a wider range of anti-Masonic writings, yet to be identified, that Joseph Smith might reasonably be expected to have read.

But even that idea is a matter of some uncertainty. In 1830 James Creighton Odiorne published a collection of popular anti-Masonic writings entitled Opinions on Speculative Masonry. This 280-page anthology included 29 speeches, sermons, editorials, and letters by various anti-Masonic writers from New York and Massachusetts, most of which had previously circulated in pamphlet form. Yet in this entire collection the term secret combination occurs only once. If the term were a generally understood code name for Freemasonry, it is difficult to explain why it is almost absent from a book of this kind. Perhaps the cluster of occurrences cited in newspapers of the time does not accurately represent the wider circle of anti-Masonic writings.

In any case, as Daniel C. Peterson has noted, “it is difficult to see why the joining of a common adjective like ‘secret’ to a common term of the day like ‘combination’ should be regarded as a technical piece of esoteric jargon so distinctive as to constitute a definitive test of authorship or a conclusive refutation of the Book of Mormon’s historical authenticity.” Peterson has also noted that the identification of the term as exclusive to Freemasonry rests entirely on a reading of a very narrow sample of documents. Naturally a researcher who looks only at anti-Masonic writings will find the term only there.

What is needed, before one can confidently declare that the phrase “secret combination” was never used in non-Masonic contexts in the 1820s and 1830s, is a careful search of documents from that period of American history that have nothing to do with the controversy surrounding the Masons. This has not yet been done.

Peterson has reported one such non-Masonic use of the term by President Andrew Jackson in a letter written to Sam Houston in 1826 at the height of excitement over William Morgan’s disappearance. This occurrence alone demonstrates that the term secret combinations was not universally considered to refer to Masonry, particularly because Jackson himself was an active Mason. One critic of the Book of Mormon cites another non-Masonic case, a letter published in January 1829 in an anti-Masonic newspaper that applies the term to a college fraternity, Phi Beta Kappa.

Thomas takes note of Peterson’s work and correctly observes that to support the claim that secret combinations referred to something broader than Masonry, it is necessary to find more ample evidence that the term was used in non-Masonic contexts.

If the discussion of conspiratorial organizations contains roughly the same frequency of usage of the term “secret combinations,” then we may be justified in saying that this phrase was a non-specific symbol that did not contain any subtle
However, if this phrase is largely absent from general conspiratorial language in the early nineteenth century, then it would be reasonable to conclude that “secret combination” was generally understood as referring to Masonry. In their efforts to discover how the term was used during the 19th century, both Peterson and Thomas turned to legal records. In 1990 Peterson found a number of court cases in which the term secret combinations described illegal conspiracies of various kinds, none of which had any connection to Freemasonry. Unfortunately, the earliest case found by Peterson dated to 1850. Thomas took a different approach: he found six cases involving illegal labor combinations from the period between 1806 and 1829, but he failed to find the term in those reports.

Collections of computerized legal documents are now more extensive, and a search for the term secret combination(s) turns up 50 cases from the 19th century, including 6 dated before 1850. These cases make it possible to trace the courts’ use of the term to around the time of the publication of the Book of Mormon. In 1819, for example, the Court of Appeals in Kentucky used the term to describe a scheme to obtain control of a valuable horse. In 1825 the Supreme Court of New York decided a case in which a number of people had participated in a scheme involving a series of sham conveyances of property. The court described this arrangement as “a fraudulent and secret combination.” The Supreme Court of Tennessee in 1833 used the term in a case involving the duties of surety for a constable. In 1840 the Kentucky Court of Appeals contrasted the duties of a toll bridge operator with those of a common carrier of freight and noted that property carried over a toll bridge “is not exposed to the same hazard from secret combinations.” The South Carolina Court of Appeals and Errors ruled in 1841 that a bank might sometimes be justified in suspending species payments for a time when it is the victim of “secret combinations of foreign and hostile institutions.” Finally, the Illinois Supreme Court in 1849 employed the term in connection with irregularities in the sale of a hotel in Quincy. Significantly, none of these cases had any relation to Freemasonry.

Occurrences of the term are not confined to reports of court cases. Recently other historical documents from 18th- and 19th-century America have become available in a form that facilitates word searches. For example, the Library of Congress now makes some documents from the founding period available on the Internet, and the Making of America Collection at the University of Michigan and Cornell University contains many books and articles from the latter part of the 19th century and a few items from as early as 1815. Although these sources are just a small sample of the historical materials in archives and libraries around the country, they show that the term secret combinations was in use soon after the beginning of the 18th century and continued to be used throughout the 19th century, usually in contexts unrelated to Freemasonry. Table 1 shows occurrences of the term up to 1850, and table 2 tabulates the term’s various appearances in items published between 1851 and 1900.

What did secret combinations mean to the contemporaries of Joseph Smith and to other 19th-century readers? Even Thomas, who does not believe that the term applied exclusively to the Freemasons, thinks that it had a rather narrow meaning: “The Book of Mormon and early nineteenth-century usage understand ‘secret combinations’ as oath-taking, murderous societies that destroy nations.” But an examination of the passages from the 18th and 19th centuries shows that the term had a wide range of usage and was, in fact, hardly more than a general synonym for a conspiracy. The following list of meanings, though not exhaustive, illustrates some of the ways in which the term secret combination(s) appeared in American discourse during that time period.
1. A covert alliance of princes or states. English historian John Strype states in *Annals of the Reformation*, published in 1709, that "the chiefest Popish potentates entered into a secret combination to destroy the reformed religion utterly." This meaning of the term continued throughout the 18th and 19th centuries. In 1846 a writer spoke of "a secret combination of Catholic princes" arrayed against Luther, and another historian employed the term to describe a secret alliance between Austria and Russia in the 18th century.

2. A conspiracy against a monarch by members of the nobility. David Hume, in his monumental *History of England*, published in the middle of the 18th century, twice refers to a conspiracy among the barons of King John as a "secret combination." In an American short story published in 1837, the term describes a court conspiracy against the Emperor Constantine. In another case it points to the plot to assassinate Julius Caesar.

3. A criminal conspiracy to get gain. Writers frequently referred to predatory criminal organizations as secret combinations. For example, in 1788, during the trial of Warren Hastings for conspiring with native rulers to plunder the provinces of India, English writer and statesman Richard Brinsley Sheridan described the scheme as a "secret combination." Frank Soulé, an early historian of the state of California, describes the criminal syndicates that sprang up there during the gold rush:

While this constant immigration favored the freedom of criminals from arrest, it also helped to extend their acquaintance among kindred rogues. Wherever they went, they knew there were one, two, or half a dozen noted haunts for fellows like themselves, upon whose aid they could always rely, to execute new outrages, to swear an *alibi*, or give any kind of false testimony that might be wished; to fee counsel or offer straw-bail, or to plan an escape from pursuit or prison of themselves, or some hotly pressed associate in crime. Thus there was gradually formed a secret combination among the chief thieves, burglars and murderers of the country, minute ramifications of which extended down to the pettiest pilferers.

On occasion, these criminal organizations, like the Gadianton robbers, may have adopted the paraphernalia of a secret society. A piece of serial fiction written in the mid-19th century describes a "secret and well-organized combination" of horse thieves who operated throughout the eastern states: "Their business was to steal horses, which were transferred by agents and runners from hand to hand, and thus passed from North to South and *vice versa.*" The writer goes on to say that the gang "had secret signs, grips, and watch-words. They had also, their landmarks; and a perfect stranger, belonging to this band, could travel through the State as over familiar ground."

4. Economic conspiracies in restraint of trade. Schemes to rig the bids at an auction or to raise prices or wages or to resist the introduction of new technology were frequently characterized as "secret combinations."

5. A conspiracy by the politically elite to manipulate the government for their own purposes. The existence of secret combinations of this kind was a matter of great concern in the early republic. For example, in 1788, during the debates of New York’s state convention to ratify the federal constitution, Alexander Hamilton, who was a delegate from the city and county of New York, argued in favor of electing members of the Senate for fixed terms in order to make them independent, to some degree, of the state legislatures:

In this, the few must yield to the many; or, in other words, the particular must be sacrificed to...
the general interest. If the members of Congress are too dependent on the state legislatures, they will be eternally forming secret combinations from local views.37

Hamilton wrote the term again the following year in a letter to George Washington. Washington had solicited Hamilton’s advice regarding his conduct as president and how he could best support the dignity of the office. Hamilton was of the opinion that the president should keep the people at a respectful distance but that senators and foreign ambassadors should have unrestricted access to the president to avoid the creation of a clique of presidential advisers who might manipulate and deceive him.38 Although the term secret combination never occurs in *The Federalist,* the word combination appears frequently in those portions written by Hamilton. In fact, Hamilton was greatly concerned about preventing the formation of corrupt political oligarchies, or combinations, and saw the checks and balances of the Constitution as a remedy.39 The anti-Federalists expressed similar concerns about “combinations, secret or open.”40

During the early 1820s, controversy arose over congressional nominating caucuses that selected candidates for president. These caucuses were criticized as elitist and undemocratic. During the election of 1824, the congressional caucus, with only a quarter of the members attending, gave its support to William Crawford. Andrew Jackson, John Quincy Adams, Henry Clay, and John C. Calhoun refused to accept the decision of the caucus. A spirited debate ensued in the United States Senate during which Senator John Holmes stated:

When the Representatives act with open doors, and expose their views and motives to the world, the people’s rights are safe, the danger lies in secret combinations, in compacts to divide and distract—in private meetings to prevent public meetings. It is here that bargains may be made, and management and intrigue be practiced with success.41

Later in the century a historian rehearsed a plot by a number of prominent men in Kentucky, called the Spanish associates, to take the settlements into an alliance with Spain, which at that time controlled New Orleans and navigation on the Mississippi, in direct opposition to the wishes of the majority of the citizens. This cabal was called “a secret combination of influence and management.”42 Cliques of corrupt politicians in the New York legislature were also referred to in this way. Writers spoke of “a secret combination of bankrupt brokers and political financiers”43 that deprived the city of New York of its independence and wrote of “the Canal Ring,” a “secret combination” of corrupt contractors and politicians that siphoned off most of the revenues of the Erie Canal.44

6. A conspiracy to ruin the reputation of an individual by spreading false information. From 1808 to 1828 Quaker congregations in New York and Pennsylvania were racked with doctrinal controversy. These contentions eventually led to a schism that divided the Quakers for more than a century. On one side was the liberal Hicksite party, who gathered around the popular preacher and abolitionist Elias Hicks. On the other side was the orthodox party, led by several ministers, including the English Quaker Anna Braithwaite.

In 1824 the Hicksites, who were prominent in rural Pennsylvania and upstate New York, issued a pamphlet entitled *The Errors of Anna Braithwaite in Relation to the Doctrines Held and Preached by Elias Hicks and the Revilers Exposed: Being an Examination of a Pamphlet Issued by the Secret Combination, Associated for the Purpose of Destroying the Religious Character of Elias Hicks, Termed “Calumny Refuted.”*45
<table>
<thead>
<tr>
<th>Date</th>
<th>Author</th>
<th>Context</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1788</td>
<td>Richard Brinsley</td>
<td>A conspiracy between British officers and local rulers to plunder the provinces of India</td>
<td>Chauncey A. Goodrich, <em>Selected British Eloquence: Embracing the Best Speeches Entire of the Most Eminent Orators of Great Britain for the Last Two Centuries</em> (1856), 429</td>
</tr>
<tr>
<td>1788</td>
<td>Alexander Hamilton</td>
<td>Members of the Senate and state legislators</td>
<td>Jonathan Elliot, <em>The Debates in the Several State Conventions on the Adoption of the Federal Constitution</em> (1861), 318</td>
</tr>
<tr>
<td>1824</td>
<td>Hickite Quakers</td>
<td>A group of orthodox Quaker ministers</td>
<td><em>The Errors of Anna Braithwaite in Relation to the Doctrines Held and Preached by Elias Hicks and the Revilers Exposed . . .</em> (1824)</td>
</tr>
<tr>
<td>1825</td>
<td>New York Supreme Court</td>
<td>A fraudulent attempt to conceal assets through sham conveyances of property</td>
<td>Esek Cowen (reporter), <em>Fellows v. Fellows</em>, in <em>Reports of Cases Argued and Determined in the Supreme Court and in the Court for Trial of Impeachments and Correction of Errors of the State of New York</em> (1852), 4685</td>
</tr>
<tr>
<td>1833</td>
<td>Tennessee court</td>
<td>Responsibility for the malfeasance of a constable</td>
<td>George S. Yerger (reporter), <em>Wells v. Gant</em>, in <em>Reports of Cases Argued and Determined in the Supreme Court of Tennessee During the Year 1833</em> (1843), 494</td>
</tr>
<tr>
<td>1835</td>
<td>no author listed</td>
<td>May refer to Freemasons (reference is unclear)</td>
<td>“The Press and the Convent Question;” <em>New England Magazine</em>, June 1835, 454</td>
</tr>
<tr>
<td>1837</td>
<td>Mrs. Harrison Smith</td>
<td>From a piece of serial fiction about the Byzantine court</td>
<td>Mrs. Harrison Smith, “Constantine: or, The Rejected Throne, Concluded,” <em>Southern Literary Messenger</em>, December 1837, 725</td>
</tr>
<tr>
<td>1840</td>
<td>Kentucky court</td>
<td>Duties of the toll bridge operator and a common carrier of property</td>
<td>James G. Dana (reporter), <em>Frankfort Bridge Co. v. Williams</em>, in <em>Reports of Select Cases Decided in the Court of Appeals of the Commonwealth of Kentucky</em> (1851), 405</td>
</tr>
<tr>
<td>1843</td>
<td>church council</td>
<td>Congregants who circulated false charges of delinquency about their pastor</td>
<td>“Exparte Council at Reading, Massachusetts;” <em>New Englander and Yale Review</em> 5 (October 1847): 560</td>
</tr>
<tr>
<td>1843</td>
<td>South Carolina court</td>
<td>A run on a bank by other financial institutions</td>
<td>R. H. Spears, <em>State v. Bank of South Carolina</em>, in <em>Reports of Cases Argued and Determined in the Court of Appeals and Court of Errors of South Carolina from November 1842 to May 1843</em> (1843), 455</td>
</tr>
<tr>
<td>1844</td>
<td>no author listed</td>
<td>The conspiracy to assassinate Caesar</td>
<td>“Cicero’s Letters with Remarks by William Melmoth;” <em>The Southern Quarterly Review</em> 6 (October 1844): 358</td>
</tr>
<tr>
<td>1846</td>
<td>no author listed</td>
<td>An alliance of Catholic princes opposed to Luther</td>
<td>“Michelet’s Life of Luther;” <em>North American Review</em> 63 (October 1846): 457</td>
</tr>
<tr>
<td>1849</td>
<td>Illinois court</td>
<td>Collusion among bidders</td>
<td>E. Peck, <em>Webster v. French</em>, in <em>Reports of Cases Determined in the Supreme Court of the State of Illinois from November Term 1849 to June Term 1850</em> (1850), 267</td>
</tr>
<tr>
<td>1850</td>
<td>no author listed</td>
<td>The Spanish Associates, a group that attempted to ally Kentucky with Spain prior to statehood</td>
<td>“Early Spirit of the West, No. 1;” <em>Debow’s Review</em> 8 (April 1850): 327</td>
</tr>
</tbody>
</table>
It is entirely possible that Joseph Smith, a young man with a keen interest in religious controversy, might have been familiar with this pamphlet. But we cannot be certain.

As Peterson has pointed out, Andrew Jackson used the term *secret combination* in that same way in 1826. Another instance of this usage is found in an article published in 1847 reporting on a church council that censured members of a New England Protestant congregation for “organizing of a secret combination, and circulating a document containing charges of delinquency” against their minister.6

7. An insurrectionary movement. In many parts of the world, the 19th century was a period of political ferment as authoritarian governments tried to maintain control in the face of strong opposition. Often liberal and national movements adopted secretive methods to avoid the inquisitive eyes of the police. They administered oaths and punished informers. They used secret passwords and signs for recognition and frequently resorted to terrorism and assassination to achieve their ends. American and English writers often referred to these movements as secret combinations. The term is, for example, applied to the secret societies opposing the Manchus in China,67 covert opposition to the Bourbons and Louis Philippe in France,68 radical

<table>
<thead>
<tr>
<th>Usage</th>
<th>Number of occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contemporary revolutionary movements in Brazil, China, England, France, Germany, Italy, Ireland, or Portugal</td>
<td>20</td>
</tr>
<tr>
<td>The Ku Klux Klan</td>
<td>11</td>
</tr>
<tr>
<td>Historical political conspiracies from ancient Greece through the 17th century</td>
<td>10</td>
</tr>
<tr>
<td>Economic combinations to manipulate markets or raise prices</td>
<td>8</td>
</tr>
<tr>
<td>Labor movements</td>
<td>8</td>
</tr>
<tr>
<td>The Know-Nothings, or anti-Catholic agitators</td>
<td>7</td>
</tr>
<tr>
<td>Southern secessionists or slaveholders</td>
<td>6</td>
</tr>
<tr>
<td>Political cabals of various kinds in the United States</td>
<td>5</td>
</tr>
<tr>
<td>Organized criminal syndicates</td>
<td>3</td>
</tr>
<tr>
<td>Freemasons</td>
<td>2</td>
</tr>
<tr>
<td>Jesuits, Catholic immigrants</td>
<td>1</td>
</tr>
<tr>
<td>The conspiracy against Jesus in the New Testament</td>
<td>1</td>
</tr>
<tr>
<td>Early Christians as viewed by the Roman state</td>
<td>1</td>
</tr>
<tr>
<td>A slave uprising in Texas</td>
<td>1</td>
</tr>
<tr>
<td>An uprising of Mexicans along the Texas border</td>
<td>1</td>
</tr>
<tr>
<td>College fraternities</td>
<td>1</td>
</tr>
<tr>
<td>A lynching party</td>
<td>1</td>
</tr>
<tr>
<td>A Native American uprising</td>
<td>1</td>
</tr>
<tr>
<td>Uncertain references</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2
Usage of the Term “Secret Combination(s)” in Documents in the “Making of America” Archives, 1851–1900

72 VOLUME 12, NUMBER 1, 2003
student societies in the German schools and universities, and radical movements in England and Portugal. Most commonly the term points to revolutionary movements in Italy and Ireland.

Even in the United States, insurrectionary movements were sometimes called “secret combinations.” The following passage refers to an abortive slave revolt reported in the 5 September 1856 edition of a Texas newspaper called the True Issue:

It is ascertained that a secret combination had been formed embracing most of the Negros in the county, for the purpose of not fleeing to Mexico, but of murdering the inhabitants—men, women and children promiscuously. To carry out their hellish purposes, they had organized into companies of various sizes, had adopted secret signs and passwords, sworn never to divulge the plot under penalty of death, and elected captains and subordinate officers to command the respective companies.

8. A movement that seeks to prevent the application of laws. At times the term was applied to groups that, for reasons of conscience or ideology, resisted the legal authority of the government. For example, John C. Calhoun characterized the Underground Railroad, which helped slaves escape into Canada, as a “secret combination.” During the 1850s the term frequently referred to the American Party, or the Know-Nothings as its members came to be called, who opposed immigration and endeavored, by legal or illegal means, to prevent immigrants and Catholics from voting or holding public office.

After the Civil War, the Ku Klux Klan, which resisted federal authority in the former states of the Confederacy, was often called a “secret combination.”

Secret Combinations and the Book of Mormon

The expression secret combinations appears in the Book of Mormon in one, perhaps two, of these senses—conspiracy against a reigning king and an insurrection movement (which, under a monarchy, is tantamount to a conspiracy against a reigning king). What is striking at first glance is the very narrow range of meaning that the term exhibits therein. Furthermore, as we have seen, owing to the widespread occurrence of the term in Joseph Smith’s environment, the claim that the expression secret combination derives from 19th-century anti-Masonic writings is flawed and cannot be sustained. The matter should be considered closed. Besides, to argue that Joseph Smith borrowed anti-Masonic language requires explaining how it was that Joseph adopted such language and yet turned out to be a supporter of Freemasonry.

But that still leaves us with this question: Could not Joseph Smith have adopted this term from his environment? Possibly, but not very likely. In the first place, the narrow range of meaning for the term in the Book of Mormon erodes any position that claims Joseph Smith borrowed it from his environment. Second, many of the publications cited in categories two and seven (the two usages of secret combination that best approximate Book of Mormon usage of the term) appeared long after the translation and publication of the Book of Mormon. Third, those works dealt chiefly with matters of European history and culture at a time when monarchs and monarchies were still the norm. Such features, of course, were not a part of the contemporary American world of Joseph Smith. Yet the Book of Mormon employs the expression secret combination within the setting of court intrigue and political insurrection. Fourth, unlike any contemporary...

Various movements adopted secretive methods to avoid discovery. They administered oaths and punished informers, used secret passwords and signs for recognition, and resorted to terrorism and assassination to achieve their ends. American and English writers often referred to these movements as secret combinations.
American and British source that repeats the term, the Book of Mormon plainly states that the devil is the author and founder of such plots, not people. For example, “it is he [the devil] who is the author of all sin. And behold, he doth carry on his works of darkness and secret murder, and doth hand down their plots, and their oaths, and their covenants, and their plans of awful wickedness, from generation to generation” (Helaman 6:30). Further, “there are also secret combinations, even as in times of old, according to the combinations of the devil, for he is the founder of all these things; yea, the founder of murder, and works of darkness” (2 Nephi 26:22). This sort of declaration mirrors nothing in Joseph Smith’s world.

Concerning plots against a reigning king, the earliest record in the Book of Mormon, the book of Ether, preserves an account of a certain Akish who, after marrying the granddaughter of the king, gathered his family members and put them under oath to support him in whatever he might do (see Ether 8:11–18). Then, “because of the secret combinations of Akish and his friends, behold, they did overthrow the kingdom of Omer,” the reigning monarch (Ether 9:1). Such deadly intrigues at court, it is plain, were not part of the fabric of Joseph Smith’s world. Yet it is this very context in which the oldest mention of “secret combinations” appears in the Book of Mormon record. A slight variation on this theme occurs in the early chapters of 3 Nephi. There we read of a secret combination that had grown in such strength that it posed a serious threat to both the Nephite and Lamanite hegemonies. In effect, it had become as a nation. It was curtailed only by an extraordinary show of unity and force (see 3 Nephi 1:27–5:6). But this secret combination renewed itself and overthrew the government eight years later, ushering in an era of a corrupt monarchy and tribal rule (see 3 Nephi 6:19–7:14). All of these situations, which the Book of Mormon describes in some detail, were foreign to Joseph Smith’s world. The secret combinations described in the Book of Mormon simply do not fit into early-19th-century America.

The Flaxen Cord

Another term that has attracted the attention of critics of the Book of Mormon is flaxen cord. During the Masonic initiation ceremony, the candidate is led forward by a rope fastened twice around his neck. This rope, called a cable tow, is symbolic of a mason’s obligation to respond to the call of a brother mason who is in need of assistance. One author sees a veiled reference to this ceremony in 2 Nephi 26:22:

And there are also secret combinations, even as in times of old, according to the combinations of the devil, for he is the founder of all these things; yea, the founder of murder, and works of darkness; yea and he leadeth them by the neck with a flaxen cord, until he bindeth them with his strong cords forever.

But because the Book of Mormon identifies the devil as the originator of secret combinations, the above passage stands against the notion of Masonic influence on Joseph Smith. Interestingly, one author contends that “the nineteenth century Book of Mormon reader would almost certainly have seen this passage as an allusion to and prophecy of masonry.” If that were the case, one would expect to find widespread references to this interpretation in contemporary sermons, journals, and letters. No writer, however, cites any examples of 19th-century authors who actually understood the verse in this way; and, in fact, any connection between the flaxen cord and the Masonic initiation ceremony seems to have gone largely unnoticed until the late 20th century.

Most readers of Joseph Smith’s era, steeped as they were in the language of the Bible, would probably have recognized the flaxen cord as a reference to the binding of Samson. When that hero was first bound by the men of Judah and then assailed by the Philistines, “the cords that were upon his arms became as flax that was burnt with fire” (Judges 15:14).
The legate, therefore, as soon as he arrived in the north of France, sent over two knights templars to desire an interview with John at Dover, which was readily granted: he there represented to him in such strong, and probably in such true colors, his lost condition, the disaffection of his subjects, the secret combination of his vassals against him, the mighty armament of France, that John yielded at discretion, and subscribed to all the conditions which Pandolph was pleased to impose upon him.


I have thought that the members of the Senate should also have this right of individual access on matters relative to the public administration. In England & France Peers of the realm have this right. We have none such in this Country, but I believe that it will be satisfactory to the people to know that there is some body of men in the state who have a right of continual communication with the President. It will be considered as a safeguard against secret combinations to deceive him.

—Alexander Hamilton, letter to George Washington, 1789

Napoleon, a man capable of sincere friendship, had relied too much and too long on the existence of a like feeling in the Russian Emperor. And, misled perhaps by the sentiment of his own energy, did not sufficiently allow for the daring intrigues of a court where secret combinations of nobles formed the real government.

—William Napier, History of the Penninsular War, 1831

An indirect, but no less clear and palpable violation of this Constitution is committed by the secret combinations which are believed to exist in many of the Northern States, having for their object the enticing, decoying, and seducing of slaves to escape from their owners, and the passing of them secretly and rapidly, by means organized for that purpose, into Canada, beyond the reach of the provision.

—John C. Calhoun, from the address of the southern delegates in Congress to their constituents, 1849

Kien-Lung was succeeded, in 1799, by his 15th son, Kia-King. His reign was frequently disturbed by internal commotions; for in China there exist secret combinations of malcontents of all classes. In their nightly meetings, they curse the emperor, celebrate Priapian mysteries, and prepare everything for the arrival of a new Fo, who is to restore the golden age.

—Encyclopedia Americana, 1851

Some of the provinces were infested with banditti, and the stringent measures adopted to suppress them gave more offence than the previous insecurity of property and life. Then the policy was changed, and the robber bands were broken up through agreements made with their captains, and by granting pensions for life to the chief offenders. Political assassinations, always the opprobrium of Roman politics, had become frequent, and secret combinations were more powerful than the government.

—“Pius the Ninth and the Revolutions at Rome,” North American Review, January 1852

―“Secret Combination(s)”: A Term Not Peculiar to Anti-Masonic Rhetoric―
Flax is the common name for a group of plants of the Linaceae family and for the fiber produced from those plants. The stems are used to produce the fiber from which linen is made, while the seeds are made into food or medicine or are pressed for oil. The oldest known piece of woven fabric is a 9,000-year-old fragment of linen found at the archaeological site of Cayonu in southeastern Turkey. The same site yielded flax seeds that show signs of domestication, making flax one of mankind’s oldest cultivated crops. By 6,000 B.C., flax was widely grown throughout the Middle East. Egypt, in particular, produced a valuable linen whose strength and fineness of weave have not been surpassed even today.

Although domesticated flax \textit{(linum usitatissimum)} was cultivated throughout the Old World, it was unknown in the Americas until introduced by European settlers in the 17th century. However, a number of varieties of wild flax, some of which resemble the cultivated plant, are native to the Western Hemisphere and were sometimes gathered by Indians to create fishnets and twine.

Until recent times, flax was a common material for cords and ropes because it is soft, strong, and resistant to moisture. Cords of flax do not stretch and are therefore useful for measuring. When a flaxen cord is burned, the ash retains its outward form but crumbles at the touch, making it a symbol for fragility.

Flax is mentioned 11 times in the Bible. In the Book of Mormon, only Nephi, who would have been familiar with the fiber from the Old World, refers to it. The Book of Mormon does, however, refer to “linen” several times. John L. Sorenson has suggested that this fabric may have been woven from henequen, a fiber that resembles flax but is made from the leaves of the maguey plant.
He later submits to stronger and stronger bonds until at last he gives away his secret and is inescapably bound “with fetters of brass” (Judges 16:21).%

Although phrases such as *flaxen cords*, *cords of flax*, and *threads of flax* are found frequently in 19th-century novels, sermons, and political writings, they do not seem to have been applied to the Masonic cable tow. Instead, they were conscious allusions to the story of Samson and proverbial metaphors for fragile moral or social ties that the subject could break if he or she wished. Thus in 1821 the American poet William Cullen Bryant described the Protestant Reformation in these words:

> The web, that for a thousand years had grown O’er prostrate Europe, in that day of dread Crumbled and fell, as fire dissolves the flaxen thread.64

The New England mystic Jones Very stated in 1839 that “the common bonds of humanity,—they are weak as flaxen cords in the giant hands of our selfishness.”65 In some cases preachers used the flaxen cord to represent the bonds of sin. A celebrated Scottish preacher, in a collection of sermons first published in 1855 and widely read in the United States, says, “It is as easy for God to break thy tyrant’s strongest as his lightest chain. A chain of iron and a thread of flax are all one to God.”66

The flaxen cord was also used in a political sense as a symbol of the bonds of the Constitution. A delegate to the Indiana State Constitutional Convention stated that “written Constitutions are only made to be violated, and in the hands of a triumphant majority are but as flaxen cords in the hands of a giant.”67 Even William Seward, who had been prominent in the anti-Masonic movement, could use the term, without any consciousness of a Masonic connection, to describe the federal union as “a Confederacy of discordant States bound by a flaxen cord.”68 Because the metaphor was so widely used, there seems to be no reason why its appearance in the Book of Mormon should be seen as a subtle reference to Masonry. Joseph Smith may have used a common figure of speech to express a similar idea in the original record, or perhaps Nephi himself recognized the homiletic potential of the story of Samson found on the plates of brass. Another possibility is that the Masonic ceremony merely gave concrete form to an ancient and widely understood metaphor.

**Conclusion**

Those who reject the historicity of the Book of Mormon generally seek for clues to its content in the events and ideas that were current in Joseph Smith’s environment. The centerpiece of these environmental explanations is the supposed presence of anti-Masonic rhetoric in the Book of Mormon. But the mere occurrence of metaphors such as the flaxen cord or terms such as *secret society* or *secret combinations* is not enough to show that the book is a product of the 19th century. These expressions were a part of Joseph Smith’s language and culture and occur widely in other 19th-century writings. Naturally, he could draw upon them in translating the history and ideas of the ancient record into a book that his contemporaries would understand. [2]
VOLCANIC DESTRUCTION in the Book of Mormon:
Possible Evidence from Ice Cores

Benjamin R. Jordan
The eighth chapter of 3 Nephi preserves one of the best accounts from antiquity of a natural disaster. It documents the destruction of entire cities and the deaths of, in all likelihood, tens of thousands of people during a terrible storm and accompanying earthquakes. The effects of the storm, including extremely high winds and intense lightning (see 3 Nephi 8:5–7, 12, 16), would have devastated crops and people. Recovery from such events would most likely have taken months, if not years. One of the most commonly asked questions concerns the cause of the storm. Because of its nature as described in the report, in conjunction with the movement of large amounts of earth that buried whole cities (see 3 Nephi 8:10), a number of studies have concluded that the storm resulted from volcanic activity. If that is so—and I think that the evidence for this view is strong—then it may be possible to also find evidence in ice cores that scientists have begun to collect and study during the last half century.

Fallout materials from major volcanic eruptions, in the form of ash or sulfuric acid particles, are often trapped in the ice sheets covering Greenland and Antarctica. My purpose in this study is to address whether or not there is evidence in the ice cores collected in those areas for a large volcanic eruption at the time of Christ's death. Was there an eruption in the time period roughly around A.D. 30–40? (Attempts to precisely date the death of Jesus raise questions beyond the scope of this study.) The answer, based on published studies of ice-core research, is a tentative yes.

**Background**

Dr. Bart J. Kowallis gives the most extensive treatment of the subject in a BYU Studies article, published in 1998, in which he makes a point-by-point comparison of the descriptions given in 3 Nephi with documented accounts of historical eruptions. He discusses how such things as thunder and lightning (3 Nephi 8:6–7, 12, 17, 19), whirlwinds (v. 12), quaking of the earth (v. 12), rending of rocks (v. 18), and a vapor of darkness (vv. 20–21) are all possible during a single eruption. Kowallis admits that such destruction would have been mostly local in nature. But considering the likelihood that “the area over which the Book of Mormon peoples roamed was . . . only a few hundred miles long and wide,” the idea of a volcanic eruption being the source of the destruction is an entirely plausible explanation. The *Journal of Book of Mormon Studies* recently cited more evidence that strengthens Kowallis’s comparisons.

If a volcanic eruption was the cause of such destruction, then there may be some geologic evidence of such an event. Kowallis notes that it was suggested in a FARMS lecture given by Marlon Nance on October 25, 1996, that it should be possible to geochemically characterize and date ash layers from sediment cores collected from the seafloor around Mesoamerica. This might make it feasible to identify ash from the possible eruption in question. In addition, there should be deposits covering the landscape around the source volcano. The difficulty is that most of Mesoamerica is dominated by volcanic deposits (see fig. 1). After Indonesia, it is the second most volcanically active region on the earth. My
dissertation research in Mesoamerica, although involving the correlation of much older volcanic deposits, has allowed me to see firsthand just how difficult it would be to find a particular deposit left from a single eruption during a specific year. Without any kind of local historical record of such an eruption, it would be far more difficult than trying to locate the proverbial needle in a haystack (the needle at least has different characteristics than the hay does). It would be more like identifying an individual cornfield in Nebraska.

There is another possibility, however, for direct evidence of a volcanic eruption during the time period in question. It was suggested in a recent issue of the *Journal of Book of Mormon Studies* that the evidence for an eruption might be found in glacial ice-core records. I undertook the task of searching for such evidence from the extant literature. This is not the first time that the ice-core records have been applied to naturally occurring events in human history. Ice-core research has already been used to help confirm the climatic changes that forced the Vikings to abandon their colonies in Greenland and the New World, the unusual atmospheric phenomena at the time of Julius Caesar’s murder, and the volcanic eruption that may have brought on the end of the Minoan civilization. Ice-core records have even been correlated to known volcanic eruptions in Mesoamerica. A good example is that of the Ilopango volcano in El Salvador. This was an eruption that some archaeologists believe helped spread the Maya Proto-Classic civilization throughout Mesoamerica, due to the migration of large numbers of people out of the disaster area. Additionally, Richardson B. Gill, in his book *The Great Maya Droughts*, cites very strong evidence for the influence of volcanoes on the Maya civilization.

**Glacial Ice-Core Records**

Almost all of the research done to date involving ice cores has focused on global environmental change. The ice cores from Greenland and
Antarctica are important in the study of climate change because they serve as records of changes in the earth's atmosphere. This is because various gases and/or aerosols, along with other particles, became trapped within the ice as they were deposited with the original snow (see fig. 2). In this process, over time the snow becomes firn, a dense but porous form of ice that increases in density gradationally from the top to the bottom. Once the firn is buried to a certain point, it becomes compacted enough to form solid ice. Within this ice are trapped air bubbles that contain samples of the gases and/or aerosols that fell with the snow. In the coldest areas of a glacier or ice sheet, these air bubbles remain undisturbed; and it is thought that, except for the decay of radioactive element impurities and some extremely slow diffusion across ice crystal boundaries, no chemical reactions take place. Each year another layer is added, and over time a record of the earth's atmospheric history is formed. Core samples are drilled from this compacted snow and ice (see fig. 3). Individual years can be identified because the concentrations of various impurities that were deposited, like dust and nitrate, vary noticeably between summer and winter. Often the annual layers can be clearly seen (see fig. 4). This is important in the study of active volcanoes because, in addition to extruding the obvious materials like rock and ash, violent volcanic eruptions inject large amounts of various gases into the atmosphere (see fig. 9). This is done in two ways. The first consists of ash and gases carried by columns of superheated air that convectively rise directly from the vent of the volcano. The second is by ash clouds that rise, also due to convection, from pyroclastic flows, consisting of superheated rock, ash, and gas as they rush down the sides of a volcano during an eruption. The most important of these gases are hydrogen sulfide and sulfur dioxide, which oxidize and combine with water in the atmosphere to produce sulfuric acid aerosol—otherwise known as acid rain. Sulfate in the atmosphere tends to block incoming sunlight. Large eruptions that propel material as high as the stratosphere can affect the climate for years. The effects are mostly the cooling of land and ocean temperatures due to the blocking of incoming solar radiation. Even in the troposphere, where most of the earth's weather occurs and where the volcanic gases are quickly washed out, climatic effects can be felt. This is because the sulfuric acid at these lower altitudes acts as condensation nuclei for clouds. The clouds, in turn, can cool the earth's surface by reflecting incoming sunlight or warm it by trapping heat radiating from the ground. If the eruption is large enough—and this is the key point for this study—some of these released gases, along with the aerosols they form, may be suspended long enough to become stored in glacial ice. Researchers use the evidence for volcanic eruptions that they find in ice cores in order to model small-scale climate changes.

The flip side of looking at the influence of volcanoes on the environment is that the history of global volcanism can be inferred from environmental evidence in the ice cores, such as the sulfuric acid contents of the various ice layers. This makes it possible to recreate earth’s volcanic history without written records—at least in regard to a broad chronology. Once this history is known, it may be possible to identify an individual eruption during a specific time period.
Core Methodology

Volcanic gases are detected in the ice by measuring the acidity of the ice. The acidity is based on the concentrations of nitric acid, sulfuric acid, hydrochloric acid, and hydrofluoric acid. The acidity is most often measured using electrical conductivity. Once a large increase in acidity is found in a layer, that layer is tested to determine the concentrations of the above acids. If a large amount of sulfuric acid is found, that is generally accepted as evidence of a volcanic eruption.

Ambiguities

Unfortunately, the ice-core record is not always clear. Whether or not evidence of a volcanic eruption is recognized in it is determined by a number of factors. Most of these are caused by natural processes, while others have to do with sampling and interpretation. For instance, the amount of sulfur released into the atmosphere does not always represent the size of an explosive eruption. An example is the 1793 Laki eruption in Iceland, which produced huge amounts of sulfur dioxide but was not significantly explosive.

One of the most important factors is the height in the atmosphere reached by any erupted material—thus the size of the eruption is critical. This is because gases that remain in the troposphere and do not reach the stratosphere tend to be washed out rather quickly, preventing widespread deposition of the erupted ash and aerosols.

Even if material makes it to the stratosphere, material erupted at low latitudes near the equator may be hard to detect. Over the last 150 years there has been an average of 20 volcanic eruptions per year. Most of these are too small to reach the stratosphere, but all of these eruptions together can still contribute to a volcanic “background signal” in the ice cores (see fig. 7). In other words, at any given time—even as you read this—there is a lot of volcanic material dispersed in the atmosphere. Because there are so many active volcanoes in the high northern latitudes (Alaska, Japan, Iceland, and Russia), there is an extremely high background signal from them. This makes it difficult to distinguish minor events in the high latitudes from major events in the low latitudes, including Mesoamerica. The evidence from a large eruption in the tropics might be too diffused by the time it reaches the higher latitudes, where the ice traps it, to show up against the volcanic background signal created by a number of much smaller eruptions in those latitudes.

In the Southern Hemisphere there is another problem. Although it has its own explosive volcanoes, which would create the same sort of problem as found in Greenland, Antarctica as a whole lies at a greater distance from explosive volcanic sources, which are mostly in the Northern Hemisphere, and thus does not receive as much volcanic material. The southern continent also has very low precipitation rates. This low precipitation makes it difficult to reliably date the layers in the cores, because ash and aerosols might not be deposited at all.

Another factor is that the tropopause, the boundary between the troposphere and the stratosphere, is at a higher altitude in the low latitudes than it is in the high latitudes. This makes it more difficult to get material into the stratosphere, where it could be dispersed to the poles (see fig. 2). Local and regional weather conditions also have an effect. The dispersal direction of an eruption cloud can even vary depending on the season. As mentioned above, it is possible that no precipitation takes place when the volcanic gases are transported over, say, Greenland. Thus the aerosols will remain in the atmosphere and
be deposited someplace else. Even after deposition, the sulfate-enriched snow may be scoured away by wind before the next precipitation event. Global wind regimes and air temperature, of course, play roles as well. When El Chichón, a volcano in southern Mexico, erupted in 1982, the wind patterns were such that the eruption cloud stayed within the tropics for six months—longer than was expected.35 Warmer temperatures lead to melting, and melting tends to increase the nitrate concentration and thus nitric acid, which obscures the sulfate and sulfuric acid signal.36 Melting also tends to muddle the core chronology.37

The perfect example of the complex factors that influence whether or not an eruption is detectable comes from the Mt. Pinatubo volcanic eruption in the Philippines in June 1991. Although located near the equator in the Northern Hemisphere, it has yet to be detected in Northern Hemisphere ice cores,38 even though it has been recognized in Antarctic ice cores.39 No one knows why this is the case.

There is also the fact that there are still only a limited number of ice cores, which limits the ability to correlate individual events between different cores. This increases the possibility for error in assigning known events to records in an individual core.40

Finally, researchers tend to ignore any acid signal that seems to be from an eruption with a Volcanic Explosivity Index (VEI) number less than 4.41 Just as earthquakes are measured using the Richter scale, volcanic eruptions are measured using the VEI. Both represent magnitude. The VEI is based on a scale from 0 to 842 and measures the volume of material erupted.43 It is thought that any eruption with a magnitude less than 4 will most likely not reach the stratosphere. But unless it is a known historic eruption, deciding what magnitude a concentration of sulfuric acid represents is filled with ambiguity. It is entirely possible for a distant, large (greater than 4), explosive eruption to leave only a small acidic “spike” in the ice, while a small (less than 3), nearby eruption could leave a large one. Eruptions with a magnitude of 3 tend to get overlooked, even though, according to the VEI, an eruption of magnitude 3 is considered “severe, violent, terrific” and can be of a duration of one to six hours.44 This is important because an event large enough to generate the three-hour time period set in 3 Nephi might have a VEI magnitude of a 3 and thus not be reported in the modern literature, even if it is evident in the ice-core record.

Ice-Core Dating

Unless researchers are interested in a specific interval in time, most do not sample every layer of the cores, which makes it possible to miss the peaks of some events. So any record must be seen as minimalist—there were many more eruptions than are indicated in the research literature.45 Also, any date of a layer in the ice will be two to three years later than the eruption due to the travel time required for the material to reach Greenland or Antarctica from the volcanic source.46 This point, too, is important for this paper’s purpose.

The oldest accepted written record of an eruption is the A.D. 79 Vesuvius eruption that destroyed Pompeii.47 Geologically, other eruptions are known, but the lack of historical records makes it very difficult to identify specific eruptions as sources for individual acid peaks. Many signals that appear in the ice cores, even during the last 200 years, are from unknown sources.48 Dating tends to be fairly good because it is almost like counting tree rings, although, due to some of the ambiguities mentioned earlier, it is not quite that simple. The margin of error in dating is determined in two ways. The first is to compare
two cores from different locations that cover the same time period and attempt to line up large acid concentration spikes between them. The second is simply to count layers and attribute large spikes to known events. In the words of Gregory Zielinski, a prominent ice-core researcher:

Dating error [in Greenland] is now thought to be 1% for the last 30,000 years of record. . . . Time lines for established volcanic events as derived from both the chemical signal . . . and the presence of tephra [volcanic glass] from known historical eruptions were used to verify the counting [of ice-core layers] and to correlate with other ice cores from Greenland. Because the original layer counting came to within 10 years of the signal thought to be related to the A.D. 79 Vesuvius eruption, the cumulative dating error may only be about 0.5% for the last 2100 years.49

Thus, at least in this case, the error for dating an eruption like Vesuvius that occurred within the same general time period as the possible Book of Mormon event is about 10 years.

Having a knowledge of a known eruption can color the interpretation of the ice-core record as well. In doing research, sometimes we see what we are looking for, not because it is really there, but because it fits our expectations. Part of the dating of the core relies on matching the spikes or peaks with documented eruptions and thus establishing the date for a given layer by inferring that it represents an eruption of a certain date. Although this is probably fairly reliable, it does leave the door open for some ambiguity. What if a documented eruption does not leave an ice-core record, but an undocumented one occurring the same year as the documented one? In other words, any acidic spike in the ice-core record around A.D. 79 is considered to be a record of Vesuvius even if it isn’t. In all fairness, there is no way of knowing otherwise without some other record. However, this could be a problem for the possible Book of Mormon event because at least two eruptions with a VEI of at least 3 are thought to have taken place during the same relative time period as the events in 3 Nephi. These were in A.D. 19 and A.D. 46. Both occurred at the island of Santorini in the Mediterranean.50

The Evidence

So where does all of this bring us? Is there any evidence from ice cores of a volcanic eruption around the time of Christ’s death? The short answer is yes, but it is far from conclusive. It does, however, add some strength to the arguments for a volcanic origin for the destruction narrated in 3 Nephi.51

The strongest evidence comes from a core known as the Camp
Century ice core, collected in northwest Greenland (see fig. 8). A continuous measurement of the core’s acidity profile was made extending from a depth in the ice of 558 meters to the bedrock beneath the ice. This profile corresponds to a time span from A.D. 43 to 100,000 B.C. The authors illustrate, in chart form, all of the “unambiguous volcanic signals” with VEI ratings of 3 or greater for the time period spanning 150 B.C. to A.D. 43. There is clearly a signal at approximately A.D. 37 or 38 (see fig. 5). However, the potential error is plus or minus 30 to 40 years. The authors do not discuss the signal because it is minor compared to some of the others that they are clearly more interested in.

In two other sets of cores from Greenland—the Greenland Ice Core Project (GRIP) ice cores and the Dye 3 ice cores—volcanic signals were detected during the same time period. The Dye 3 ice core shows a distinct acid spike at A.D. 47 (see fig. 7). Unfortunately, the acid is predominantly nitric acid, which is not related to volcanism and is most likely, as discussed by the researchers, a result of warm air temperatures and melting. The sulfate component of this spike is still twice the amount of the background, which does indicate volcanism, but the signal is too diluted by the nitric acid to be completely unambiguous. However, the possibility of a volcanic source contributing to the A.D. 47 spike from the Dye 3 core is strengthened by a core drilled at Plateau Remote in

Fig. 8. Locations of ice cores from Greenland. (Drawn after Richard B. Alley, 2000; see note 14 herein)

Fig. 9. San Cristóbal volcano in Nicaragua. This is an example of one of the many active volcanoes in Mesoamerica. Note the steam and gases venting from the volcano.
east Antarctica (see fig. 6). This core contains a clear volcanic signal at A.D. 46. It has a dating error of "a few years"—but the authors give no further specifics.53 There are other small but strong acidic spikes between A.D. 1 and A.D. 47 within the Dye 3 core, but the authors do not discuss them in the article.

In the GRIP ice core, there is a spike around A.D. 1, but it is not discussed either. There are no others before that of A.D. 80, which the authors relate to the eruption of Vesuvius. The GRIP core is thought to be a better record of pure volcanic eruptions because it does not appear to have been subject to melting. However, its location at a higher altitude (3238 m) and latitude (72.58° N) may also have resulted in its not recording some events that were recorded in the Dye 3 core, which is from a lower altitude (2480 m) and latitude (65.18° N). Certain layers in the Dye 3 core are clearly volcanic, based on their sulfate content, but do not appear in the GRIP cores—for instance, a large event in the Dye 3 at A.D. 178. This event, however, is not discussed by the authors. They state that there is an error of plus or minus two years at the A.D. 934 level in the GRIP core, but at the 1084 B.C. level, in both the GRIP and Dye 3 cores, that error is plus or minus 10 years.54

There is nothing in any of the records to indicate what or where the sources of the eruptions might have been. However, recent evidence has been discovered of an eruption at Tacaná volcano on the border of Mexico and Guatemala. This event is dated between A.D. 25 and A.D. 72 and correlates with an interruption of construction at the city of Izapa. The eruption was followed by mudflows that inundated parts of Izapa.55 This eruption was moderate in size—similar to that of Soufrière Hills, Montserrat, in the early 1990s—and unlikely to have been the sole cause of the destruction described in 3 Nephi. Determining whether or not this eruption caused or contributed to that destruction at all requires additional research.

Conclusion

My purpose in this paper was to lay out the ice-core evidence for a volcanic eruption around the time of Christ’s death that might be correlated with the destruction discussed in 3 Nephi. There is evidence for large eruptions, within the margin of error, for the period of A.D. 30 to 40. However, so far it is not possible to determine the exact geographic location of those eruptions. Despite this, the discovery of a volcanic eruption at Tacaná volcano during the period in question, combined with the ice-core record, seems to strengthen the argument for an eruption as part of the cause of destruction described in 3 Nephi. This evidence is not conclusive and leaves the door open for some criticism of the volcanic hypothesis, but it cannot be argued that there is no evidence outside the Book of Mormon for a volcanic eruption during that time period. The benefit from this study remains: there is evidence for volcanic eruptions during the time period described in 3 Nephi 8. In the end, it is up to the reader to decide how much this evidence strengthens the argument for a volcanic origin of the great destruction.
Moroni
The Final Voice
Mark D. Thomas
WE WERE ALL CREATED WITH AN INSTINCT TO FIND MEANING IN OUR LIVES THROUGH STORIES. OUR MINDS SEEM TO BE PROGRAMMED TO SEARCH FOR NARRATIVE WALLS THAT SHAPE WHO WE ARE, THUS FULFILLING WHAT, ACCORDING TO ONE HASIDIC RABBI, IS OUR PURPOSE: “GOD MADE MAN BECAUSE [H]E LOVES STORIES.” WE PASS THROUGH LIFE FROM ONE HOUSE OF THE MIND TO THE NEXT. WE MOVE FROM STORY TO STORY THAT EMPOWERS US WITH MEANING EVEN AS IT RESTRICTS US IN A NARROW SPACE OF THOUGHT AND ACTION.

Jews place a piece of the Torah on the doorpost of their houses so that the physical house mirrors the spiritual home. Yet on every person’s doorway is an invisible story. When we leave the confines of our physical house, we walk in the path of an ever-present narrative of meaning. These stories cling to us like shadows and influence our daily speech, thought, and actions. We ritually repeat our varied stories to friends in casual conversation, to fellow church members in testimony meeting, to prospective employers through our résumés, to medical doctors probing our ailments, and in countless other situations that reflect our innate and insatiable hunger for social and individual meaning.

When we hear or tell a story, it may reinforce, undermine, or simply describe the foundation of the stories in which we live. For example, the parables of Jesus effectively took a sledgehammer to the house of first-century Judaism with revolutionary teachings such as blessed are the poor, blessed is the oxymoronic “good” Samaritan, blessed are the persecuted, honored is the penitent prodigal son, and so on.

But the primary function of the Book of Mormon narratives, which differs from that of the parables of Jesus, is to help build a house of meaning in which individuals and societies may live. In fact, the Book of Mormon presents the principles of the universal human home: the new birth of the natural man and the elimination of secret combinations are two of its bearing walls.

The Book of Mormon is particularly appealing to those whose house of meaning has fallen—spiritual wanderers who have lost or misplaced their home somewhere along the way. The Nephite stories build a pattern from which anyone might—and everyone can—construct a home.

But Moroni provides an ironic ending to this story. He tells us of the destruction of ancient houses of meaning. He himself is the master wanderer, literally homeless for at least two decades after the wreckage at Cumorah. Left without companion or family or heir, and having witnessed the horrific demise of his people, he comes to a despairing realization: “Whither I go it mattereth not” (Mormon 8:4).

How can he end a book, intended to build a home, with such woeful destruction, with the utter annihilation of not one but two civilizations? He appears more like a Samson tearing down temples of corruption than a Moses building tabernacles in the wilderness of the soul. In fact, long after telling of the
desolation of the Nephites, Moroni goes back to include his father’s decades-old letter in the record to reveal in graphic detail the unspeakable atrocities accompanying the Nephite fall (see Moroni 9). The letter seems out of place at the conclusion of a sacred record. Why, in a story dedicated to the building of a spiritual world, does he highlight the destruction of that world? Or does he? Examining the literary forms that Moroni employed in the Nephite record helps us to make sense of his ironic focus on death and destruction at the end of a veritable book of life.

**The Three Endings of a Book**

A first impression of Moroni’s narratives might be that they are a jumble of unrelated and unorganized sermons, letters, and narratives—a recitation of sacramental prayers here; a sermon on faith, hope, and charity there; an address to those who doubt miracles next to that. But an attentive analysis of the narrator’s commentary reveals a meticulously orchestrated narrative strategy. Our task is to tease out its architectural intent in order to see God in the details and to better appreciate the whole narrative house.

We will begin by analyzing each of the three concluding segments that Moroni wrote in an effort to close the record. Within each discrete segment, he alternates between narrative and commentary about the narrative, between a tour of the house and an architectural commentary on that house. Thus he relates the narrative of the Nephites’ destruction and then comments on it for readers (see Mormon 8–9) and uses the same approach in covering the Jaredite history (see the book of Ether). In his own book, he includes his father’s sermon and letters as well as his own comments for readers (see the book of Moroni).

Although modern writers eschew this unusual strategy of narrator commentary, we will see how surprising and stunning its effect is in the hands of Moroni.

Of course, narrator commentary appears throughout the Book of Mormon, but (with the possible exception of Nephi) never so much as in the passages from Moroni. Most Nephite narrators, especially Mormon, add asides to explain portions of the story. Moroni also comments on particulars, but by virtue of being the one assigned to bury the whole book, he interprets the significance of the entire work in a global and final manner. For this reason, Moroni is the most visible of narrators in the Book of Mormon. He is also the most self-conscious and apologetic:

Lord, the Gentiles will mock at these things, because of our weakness in writing. . . . When we write we behold our weakness, and stumble because of the placing of our words; and I fear lest the Gentiles shall mock at our words. (Ether 12:23, 25)

And only a few [things] have I written, because of my weakness in writing. (Ether 12:40)

And I am the same who hideth up this record unto the Lord. . . . And if there be faults they be the faults of a man. (Mormon 8:14, 17)

Condemn me not because of mine imperfection, neither my father, because of his imperfection, neither them who have written before him; but rather give thanks unto God that he hath made manifest unto you our imperfections, that ye may learn to be more wise than we have been. (Mormon 9:31)

This nervous tour of the narrative house by the embarrassed builder may reveal one of the reasons why Moroni ended the record three separate times: he was trying to end well and was not entirely pleased with his efforts. The interpretive strategy in this study is to compare, in summary form, those endings with one another and then to join each narrative to its narrator commentary. In this way we will see the builder on tour as he points out his and his predecessors’ work. We start with Moroni’s first “final ending.” The narrative is designated N, and the narrator commentary is designated C.
The literary structure of Mormon 8–9 breaks down into narration and narrator commentary as follows:


We know that Moroni intended to end his writing well before the final words in Moroni 10 because he tells us as early as in Mormon 8 that he will not write any more:

I, Moroni, do finish the record of my father, Mormon. Behold, I have but few things to write. . . . [m]y father hath made this record, and he hath written the intent thereof. And behold, I would write it also if I had room upon the plates, but I have not; and ore I have none, for I am alone. . . . And how long the Lord will suffer that I may live I know not. (Mormon 8:1–5)

But even though Moroni has told us he is closing and has given us a closing formula, he cannot bring himself to finish. He goes on for another six pages in our edition before he finishes his first ending. Because he has told us that he wishes he could give us more information, it is not surprising that he starts writing again and concludes with a second ending after the Jaredite story.

Ending Number 2: The Farewell Ending in Ether 12

Yet alive, Moroni somehow finds more room on the plates to build us the second wing of his narrative house. This we know as the book of Ether. He begins this book by stating that he is the translator and narrator. A variety of reasons help explain why Moroni included his abridgment of the Jaredite record in the book of Ether after he thought he had finished the Book of Mormon record, but that discussion would divert us from our purposes here. Let me simply say that the book of Ether is a confirmation of the Nephite message and is a preview of a promised book of revelations to appear after the coming forth of the Book of Mormon (see Ether 3:13–5:1).

The narrative and the narrator commentary in the book of Ether can be outlined as follows:

I. [C] Ether 1:1–33. Introduction to the Jaredite record.

II. Ether 1:34–6:12. Traveling to the promised land.
   A. [N] Ether 1:34–2:8. The assembly of Jared, his brother, and their family and friends to leave for the promised land.
   D. [C] Ether 3:17–18. Moroni’s commentary on the significance of this visit of Christ.
   F. [C] Ether 4:8–5:6. Moroni’s address to
the latter-day reader regarding revelation and the Jaredite record.


IV. Ether 12:1–15:34. Destruction of the Jaredites.
   A. [N] Ether 12:1–5. Ether’s warning of destruction and sermon to the Jaredites on faith and hope.
   B. [C] Ether 12:6–12:41. Moroni’s interruption of Ether’s sermon to apply it to the reader and to discuss faith, hope, and charity. His farewell ending before concluding the book of Ether narration.

The second formal farewell to the reader follows a different form and serves a different function than does the signature ending in Mormon 8. I will call this second type of ending the “farewell ending.” It both ends the work and wishes the reader well (“farewell”), but then warns or rejoices that the narrator will meet the reader at the final judgment. This kind of ending evokes the solemnity and profundity of the narrator’s final words, often just before death. Thus it combines a formulaic ending with either prophetic warning or joyous exhortation associated with the judgment. It is an ending also utilized by Nephi, Jacob, Enos, and Mormon. Here is the farewell ending that concludes Nephi’s writings:

And now, my beloved brethren, all those who are of the house of Israel, and all ye ends of the earth, I speak unto you as the voice of one crying from the dust: Farewell until that great day shall come. And you that will not partake of the goodness of God, and respect the words of the Jews, and also my words, and the words which shall proceed forth out of the mouth of the Lamb of God, behold, I bid you an everlasting farewell, for these words shall condemn you at the last day. For what I seal on earth, shall be brought against you at the judgment bar; for thus hath the Lord commanded me, and I must obey. Amen. (2 Nephi 33:13–15)

The farewell ending to a distant reader with its more sermonlike quality, its finality, is understandably found in narrator commentary. In Nephi’s case above, it immediately follows a defense of the truthfulness of his words. The outcome of the final judgment will rest, at least in part, upon how we react to the narrator’s message. I can think of no more powerful way to end a story; it evokes the mystery of ancient nobles, it evokes the power of the narrator’s dying words, and it evokes the finality of the final judgment as a meeting place and as the judgment upon readers’ reactions to those words—and the readers constitute “the house of Israel” and the “ends of the earth.”

The signature ending, on the other hand, is far more prosaic and matter-of-fact. It is generally a simple designation of authorship without preaching. For that reason it is often found in correspondence between characters within the narrative. Moroni’s second farewell, the farewell ending, however, is an address to readers, and what an address it is! It appears in the final narrator commentary section in Ether 12:38–41, just before Moroni concludes his final narrative regarding the destruction of the Jaredites:

And now I, Moroni, bid farewell unto the Gentiles, yea, and also unto my brethren whom I love, until we shall meet before the judgment-seat of Christ, where all men shall know that my garments are not spotted with your blood. . . . Amen.

Here Moroni ends his message with both a statement of love and an implied prophetic warning. However, he provides yet another final farewell ending, though, as we will see, it ends in a much different tone and has a very different purpose.

Ending Number 3: The Final Farewell Ending in Moroni 10

After his first two attempts to conclude the record, Moroni returned to building this “house of Israel,” perhaps in part because he was dissatisfied with his efforts in writing a grand summary for his story and its accompanying narrator commentary. He may have added multiple endings simply because
he lived longer than he expected. But because he changed his entire narrative approach in the final ending, it is probable that he continued to write at least in part because he was not entirely satisfied with his first two endings. After his first formulaic ending, he added many more pages of narration and narrator commentary. Maybe this final ending provides the resolution that has evaded him in his previous endings. Moroni begins his third attempt at finality with an explanation:

I had supposed not to have written more, but I have not as yet perished. . . . Wherefore, I write a few more things, contrary to that which I had supposed: for I had supposed not to have written any more. (Moroni 1:1–4)

Moroni’s final effort in his own book follows this structure:

III. Moroni 7–10. Sermons and letters.

In this third ending something very different from the prior two endings is happening. The text consists largely of a sermon (Moroni 7) and letters directed to persons in the frame of the Nephite narrative, and with the exception of Moroni 9, the narrative is mostly doctrinal in nature even though it is not a commentary from the narrator. Also, the portion that is a commentary, Moroni 10, at least at first glance, does not appear to be commentary on narrative. Why does Moroni make these changes in his narrative and commentary patterns? What does this shift in Moroni’s narrative strategy indicate?

These changes in the third ending have important interpretive consequences. They indicate narrative shifts from the ancient narrative to the reader’s implied narrative. Let me explain this in detail. After destroying the house of Nephi and the house of Ether in the first two endings, the book of Moroni hands us the hammer to rebuild what has been lost. The words and narrative structure become the walls in which the reader lives. Hence the commentary in the book of Moroni is not tied to this or that ancient story but rather to how the reader can reconstruct the Nephite and Jaredite houses. Before that, we were given a tour of the Nephite and Jaredite houses with accompanying commentary. Then, in the book of Moroni, the builder turns to us, the readers, with a set of plans and points to our lot across the street. This is now about our own home. That is what the structure in the book of Moroni accomplishes, and it explains why the narrative and commentary of this ending differ from the earlier pattern. This narrative technique shifts from providing commentary on the Nephites and Jaredites to providing commentary as tools for the reader’s own implied narrative. In this fashion Moroni jumps from the ancient destruction stories to the reader’s own future story. This narrative strategy explains the purpose of the irony of what can be termed a book of death (the narratives of the Jaredite and Nephite destructions) in a book of life (the Book of Mormon as a whole).

The third ending makes the reader’s life an extension of the Book of Mormon. We finish the story with the tools that Moroni gives us in his third and final ending. The structural outline of the book of Moroni presented above is essentially a summary of those tools. This is what I mean when I use the term implied narrative—the narrative of my completion of the house of Nephi in my own age and time. Thus the commentary in the third ending is in fact commentary on the narrative; it extends the Book of Mormon narrative to the reader’s own implied narrative.

So the outmoded technique of narrator commentary makes the Book of Mormon our own book, our own narrative house. Mark Twain may have seen the Book of Mormon as “chloroform in print” (a clever wordplay on the book of Ether), and literary critics
may be biased against its antiquated technique of narrator commentary, but the literary proof is in the pudding. It is no wonder that Parley P. Pratt and thousands of others have read this book through the night with joy and astonishment; the narrative technique has enabled them not only to live in the ancient narrative house but also to build their own houses of meaning.

Before dealing further with the final ending formula, let us examine the form of the letters from Mormon to his son Moroni (Moroni 8–9) in order to better grasp why this narrative plan in the third ending is so effective. These letters resemble the ancient Greek letter-writing form, especially the letter in Moroni 8. This is the same ancient form utilized by Paul in the New Testament. The form is not an abstract theological treatise but a concrete and personal communication. Mormon’s letters do contain deductive logic, scriptural arguments, and doctrine, but they are not abstract treatises. We also find in them the very personal nature of the communication from father to son. The letters contain expressions of personal love, prayerful concern for Moroni’s welfare, and joy in his faithfulness, and they encourage Moroni not to give up despite the hopelessness of the circumstances. The clear affection expressed by Mormon for his son in these decades-old letters stands in contrast to the brutality of the ending scenes of the Nephites in the final letter.

The consensus of recent scholarship on ancient letter writing argues that the presence of the writer (parousia) was an important part of letter writing from earliest times. Such a personal letter was intended to communicate as one would in person. The Greek letter-writing form found in the Book of Mormon contains the typical greeting, prayer for welfare, dialogue, and caring farewell that one finds common in intimate personal relationships in which one is personally present. Mormon’s letters convey his longing to be with his son and evoke for...
the modern reader the presence of a long-dead father.

Following the letters and sermon of his father, Moroni gives his final farewell. In this we also find a very personal message. We have seen how both Nephite's farewell and Moroni's second farewell ending contain prophetic warnings about the final judgment. Moroni's third and final ending in Moroni 10:34 is notable and unusual for its positive, irrefpressible hopefulness:

And now I bid unto all, farewell. I soon go to rest in the paradise of God, until my spirit and body shall again reunite, and I am brought forth triumphant through the air, to meet you before the pleasing bar of the great Jehovah, the Eternal Judge of both quick and dead. Amen.

On this personal note the Book of Mormon ends. Previous farewell endings have led us to expect a warning as part of the rehearsal for the meeting before the bar of God. But here Moroni anticipates only joy at the end. We will return later to the reason for the surprising pleasantness in this third and final ending.

**Reading the Three Endings**

Having finished Moroni's record, we may draw some conclusions about its structure. We have seen how Moroni is the most self-conscious of the Nephite narrators. He is clearly not satisfied with his effort, and he senses its importance (hence his three attempts to end the record and his apologies for the weakness of his writing). His self-consciousness is further revealed in the fact that his commentary is usually more than an interpretation of the attached narrative. In reality, his commentary is an interpretation of the entire Book of Mormon. Clearly his primary narrative goal in his various commentaries is to relate the Book of Mormon as a whole to latter-day readers—not only to provide a narrative house for the reader but also to shout a prophetic warning and exhortation to change. His focus in the first two endings is on destruction. Passing quickly over hundreds of years and a long string of kings, he devotes a large portion of the Jaredite record to the scene of destruction. In fact, nearly one-third of that long history of dozens of generations is devoted to the final Jaredite destruction. In other words, when we begin to interpret Moroni, we soon find that he wants the book to interpret and warn us. His first two endings focus on destruction of nations.

Moroni's second purpose, apparent in the seemingly random doctrinal expositions and arguments of all three endings, is to defend the Book of Mormon itself. For example, in three separate sections, Moroni either quotes Ether and Mormon or directly discusses faith, hope, and charity. Why? At least one of the reasons is to defend the Book of Mormon's existence to skeptical latter-day readers. It is not by accident that after exhorting readers to have faith, hope, and charity—because we must believe in what we cannot see, and because a witness will not come until after a trial of our faith—Moroni despairs that those readers will mock what he is writing, that they will not have faith in what he writes, that they will not have charity. In other words, he is exhorting them to exercise faith, hope, and charity by accepting the Book of Mormon itself (see Ether 12). He prays to God that readers of the record might have charity to believe in the book despite his weakness in writing (see Ether 12:35–36). Moroni ends his book by arguing that those who have faith, hope, and charity will believe in the truth of his words in the Book of Mormon (see Moroni 10:18–29).

The same purpose lies behind Moroni's inclusion of his father's sermon on faith, hope, and charity (see Moroni 7). This sermon is addressed to believers among the Nephites but contains a defense of the Book of Mormon that Moroni aimed at latter-day readers. This sermon argues that the days of miracles
and angelic visitations have not ceased with the coming of Christ but must continue in all ages and that one must judge whatever invites to do good and to believe in Christ to be a true product of Christ. Why did Moroni include in the record this sermon with its arguments against rejecting as evil that which is of God? Because he saw the day of his readers, a time when many would reject revelation, new scripture, and miracles that would occur after Christ’s coming. In other words, he feared that readers would reject the Book of Mormon and its doctrines outright, without a serious reading.

Throughout Moroni’s writings, various doctrines are defended, and subtly the acceptance of these various doctrines is used as support for the Book of Mormon. We see this same defense of the Book of Mormon in Moroni’s first narrator commentary in Mormon 8–9. Here Moroni speaks to various groups among latter-day readers: those who do not believe in Christ, those who doubt current revelation, and those who reject miracles. The unifying thread in all of these random sermonettes is the Book of Mormon, which preaches of Christ, proclaims revelation in every age, and predicts its own coming forth through the miraculous power of God. So when Moroni says the following with passionate repetition, he is defending the Book of Mormon itself and the latter-day work that it would spawn:

> And now, behold, who can stand against the works of the Lord? Who can deny his sayings? Who will rise up against the almighty power of the Lord? Who will despise the works of the Lord? Who will despise the children of Christ? Behold, all ye who are despisers of the works of the Lord, for ye shall wonder and perish. (Mormon 9:26).

Finally, in all three endings Moroni exhorts readers to pray to find the truth of what is before them, the most famous being Moroni 10:4–5:

> And when ye shall receive these things, I would exhort you that ye would ask God, the Eternal Father, in the name of Christ, if these things are not true. . . . And by the power of the Holy Ghost ye may know the truth of all things.

In summary, Moroni’s two grand organizing principles throughout all three endings are (1) to apply the Nephite and Jaredite stories (especially the destructions of those two nations) to latter-day readers; and (2) to include a variety of doctrinal, logical, and scriptural arguments that are a subtle
(at first they appear un-related) yet thorough defense of the Book of Mormon and its doctrines.

We have examined common narrative purposes throughout all three endings and the unique way in which the book of Moroni builds on and transforms the narrative structure of the first two endings. This transformation through three endings leads us back to the question of why we find the irony of the narrative of death in a book of life.

After ending the Nephite record twice with tales of distressing annihilation, Moroni ends a final time with a message of hope—a set of instructions on how to put the house of meaning back together. The three endings can be summarized, in order of appearance in the record, as past destruction 1 (the Nephites), past destruction 2 (the Jaredites), and future restoration. Following the “building instructions” on how to ordain, baptize, administer the sacrament, and so forth, Moroni’s final farewell in Moroni 10 ends with a sermon based on a series of hopeful exhortations for that future restoration:

Now I, Moroni, . . . seal up these records, after I have spoken a few words by way of exhortation
and put on thy beautiful garments, O daughter of Zion; and strengthen thy stakes and enlarge thy borders forever. . . . And now I bid unto all, farewell. (Moroni 10:1–4, 7–8, 18–19, 27, 30–31, 34; compare Isaiah 52:1–2; 54:2)

The power of these final words comes in the strength of Moroni’s repetitious exhortations, especially his paraphrasing of Isaiah about restoring the ancient walls and enlarging the tent of the holy city. In the Book of Mormon this restoration is understood on a literal level to mean the return of Jews and others to their promised lands in the latter days. It is also understood here and elsewhere in the Book of Mormon on a spiritual level to refer to the restoration of the gospel in the latter days. From the torture rack of two national destructions, Moroni sees into the future and exhorts modern readers to embrace that spiritual restoration. But he, like many great martyrs in all ages, is not destroyed; somehow his enemies can never reach him. Even though everything he loves in life is dead or dying, there is some foundation rock in him that cannot be toppled by the winds of chaos.

Faith in Christ is a sustaining theme throughout the Book of Mormon. Christ is the answer to the existential limits of life facing all people. Certainly faith in Christ is the answer to the limits facing Moroni (the loss of all cultural meaning and context and the painful realities of loneliness and impending death). He tells of the sustaining power of this faith in his second ending:

And now I, Moroni, bid farewell unto the Gentiles . . . until we shall meet before the judgment-seat of Christ. . . . And then shall ye know that I have seen Jesus, and that he hath talked with me face to face, and that he told me in plain humility, even as a man telleth another in mine own language, concerning these things. (Ether 12:38–39)

Besides this faith, two other things sustain Moroni after the utter destruction of his people—memory and hope. The memory is the presence of a father long dead, and the hope is the presence of latter-day readers who will set up the spiritual house again. Earlier we noted Mormon’s fatherly compassion in his letters and sermon and Moroni’s cheer at the thought of meeting readers at God’s bar (see Moroni 10). So memory and hope are not just mental images or principles for Moroni, but come to him in the form of living realities that sustain him—living in the presence of those not present (as we have seen in the literary function of letters). That is why Moroni, in the face of doom, is never cynical; his spiritual home somehow survived, unseen and quietly within him, to pass on to us.

But the presence goes both ways. More than a voice from the dust, Moroni is a presence from the dust. If salvation is a dramatic narrative event, then it is best represented by a story and by presence within that story as we read it. Salvation is more than an abstract future concept—it is living, dramatic, and sacred presence. As we read and experience Moroni, the elixirs of death become God’s apothecary for life as we drink in the presence of the lonely survivor.

Quietly in this story that ends with utter destruction, there is an inner building of a spiritual home based on the presence from faith, the presence from memory, and the presence from hope. Moroni is a type. This holy wanderer on the border of life and death, on the boundary of meaning and meaningless, passes a note to us regarding the collapse of our own house on the top of our own final Cumorah. We think we are reading of the fall of Moroni’s world when we are only reading of what can happen in our own world if we disregard his salvific call to “come unto Christ” (Moroni 10:32).

Although our houses may fall before they can be rebuilt on sure foundations, Moroni’s house never falls. His narratives of the twin Cumorahs of Nephite and Jaredite destruction are eclipsed by his wonderfully joyous blueprint of salvation in his third and final attempt to end effectively the book that would become the keystone of the latter-day restoration.

The story of Moroni is the story of lonely survival. He finished his work decades after his friends were gone and his world was destroyed. His survival through memory and hope offers a model as we wander in the wilderness alone, after our own Cumorah, hoping to find some presence in a narrative home. And at some point, we will find a new stone box, the house of death, in which we (like the golden plates of Moroni) will find rest.
A Priceless Gem

Andrew E. Dadson

Turning 12 was a milestone for me as far as discovering the Book of Mormon is concerned. Before then, any book of more than 20 pages terrified me. At this turning point, I started boarding school, where my faith was severely tested. In this surprising crucible of trials and hardships, delving into the Book of Mormon brought me enormous spiritual strength, and I discovered for the first time a gem whose luster would guide me for the rest of my life.

I was born in Ghana, West Africa, and grew up in a loving home with parents who revered the Lord and taught their children in his ways. When my Methodist parents became converts to the Church of Jesus Christ of Latter-day Saints when it was introduced in Ghana in 1980, I was only five years old. We held regular family prayers and weekly family home evenings in which my parents shared biblical stories with us and encouraged us to keep the commandments of God. They taught us how to pray and exercise faith in the Lord at all times. Because our spiritual discussions centered more on the Bible than on the Book of Mormon, when I left home for boarding school, I was not as well armed to defend my faith as I might otherwise have been.

Boarding school in Ghana at that time was in some respects a traumatic and daunting experience for a 12-year-old. It was customary for older students to bully junior students and make life unpleasant for them whether they had committed an offense or not. For instance, a freshman might be required to crawl 10 feet on a rough cement floor on his bare knees, or his food might be taken from him, no questions asked. Being treated this way and witnessing the trials of others provided me a glimpse of what life might have been like without the wonderful gift of agency. In our spiritual lives, our agency allows us to choose our own actions, but in secondary school, agency was not always an option without serious consequences: you either obeyed or you suffered punishment. Admittedly, my life in the boarding school was not always grim. In fact, the wonderful and memorable moments far outnumbered my dismal experiences. Moreover, I concluded that most teenagers view the painful experiences as merely a rite of passage into adulthood.

My major challenge at boarding school was my interaction with students from varied backgrounds who were predominantly Catholic. The diverse student population consisted of youth from all over the country who spoke a number of dissimilar tribal languages. Fortunately, English, Ghana’s official language and the school’s language of instruction, unified us. While in secondary school, I was never officially persecuted or ostracized because of my religion, though occasionally my classmates and fellow dormitory residents made snide comments about my clean speech and aversion to drinking, smoking, and other

Andrew Dadson at home on vacation from boarding school.
questionable activities. Never was I teased for reading the Book of Mormon. Rather, curious students would sometimes have me explain the origin of the book as well as my “peculiar” religious beliefs. I was amazed that any students had even heard of the church, let alone the Book of Mormon.

My secondary school was founded by Catholic missionaries in 1930 and was named after the famous archbishop St. Augustine. The school’s strict curriculum required that everyone attend early morning mass once a week and Sunday church service. I was not obliged to partake of the sacrament, or the body of Christ, as the Catholics call it; however, I learned a lot from the sermons preached and often wondered about the many differences and similarities between Latter-day Saint and Catholic beliefs and practices.

Some of the differences came to light occasionally, and sometimes the contexts were quite embarrassing. One day my ninth-grade teacher asked me to pray at the beginning of class. I said what seemed to me a beautiful prayer, making sure I followed all four steps that I had learned in Primary. I also addressed Heavenly Father respectfully with thee, thou, and thine. Immediately after I said “amen,” my teacher thanked me for praying and inquired, “How come you still use archaic pronouns in your prayers?” I was the laughing stock of the class that day.

I always kept a copy of the English version of the Book of Mormon in my suitcase. I didn’t have time to study it daily, but I read and thought about it often. I felt that the most important weapon I had in my spiritual arsenal was this small blue book. For instance, when my friends inquired why I thought sprinkling was inadequate for baptism, I would read the words of Jesus Christ recorded in 3 Nephi 11:23–27 to answer them. Of course, since the Book of Mormon evidence was so clear on such points, they would often ask me to provide additional evidence from the Bible. We would argue back and forth until we came to a standstill.

Encounters of this kind helped me to understand why Joseph Smith said, “The Book of Mormon [is] the most correct of any book on earth, and the keystone of our religion, and a man would get nearer to God by abiding by its precepts, than by any other book” (Book of Mormon introduction). The Book of Mormon provides concise and explicit responses to doctrinal questions, whereas the Bible seems contradictory on several topics, especially when read without modern-day revelation and the guidance of the Holy Ghost.

I certainly did not feel that the Book of Mormon made me superior to my Catholic friends, but I knew without a doubt that my scriptural foundation was much firmer than theirs. Unfortunately, until this point in my life, I hadn’t bothered to “experiment” on the word of God as Alma counsels us to do in Alma 32, or to “read,” “ponder,” and “ask” as Moroni exhorts in Moroni 10:3–4. Since my baptism at age eight, I had lived and thrived, or at least so I thought, on the borrowed light of my church leaders, teachers, and parents. I had assumed the authenticity of the Book of Mormon and had not bothered to pray specifically for a spiritual confirmation regarding it. I did, however, pray often for strength to live the principles I continued to learn from the Book of Mormon.

A literal transformation occurred when I began to take seminary classes in ninth grade. My seminary teacher tried to come to my school once every two weeks. He was a very jovial and enthusiastic teacher who loved the Lord and showed it openly. He was a high school teacher and an athletic coach by profession, and he also ran a personal clothing business on the side. But even with his hectic schedule, he made time for us. One other Latter-day Saint student attended seminary regularly with me. We did not interact very much between seminary classes, because we had different academic emphases and dormitories. With packets for the entire seminary program available to us, we were never out of homework. For me, the wonders of the scriptures unfolded quickly. I simply loved seminary. Studying the scriptures was fun, and I looked forward to memorizing scripture mastery verses. My eyes lit up when I learned to cross-reference using the Topical Guide. Most important, I felt my soul expand as the Lord poured down knowledge upon me in a way that I had never before experienced.

A manifestation of this spiritual outpouring enabled me to connect and relate scriptural stories, chapters, and verses from not only the Book of Mormon but also from the Bible, the Doctrine and Covenants, and the Pearl of Great Price. For instance, I discovered a powerful correlation between 2 Nephi 2, 2 Nephi 9,
and Alma 34. Until this point, all I knew about the atonement was that Christ had died to make eternal life possible for everyone—the fall of Adam and Eve was an enigma, the need for an atonement was obscure, and the benefits of this unparalleled sacrifice were mostly evasive. But those chapters, read together, explained very clearly the advent of physical death and our spiritual alienation from God resulting from the transgression of our first parents. These passages threw a floodlight on the subsequent need for reconciliation with God through the atonement of Jesus Christ, and further, they established very clearly why Christ was the only qualified being to die on our behalf. Careful study of these chapters also taught me why the Savior voluntarily chose to suffer such an ignominious death and what the tragic consequences would have been otherwise. To me these passages were and are pivotal “to the convincing of the Jew and Gentile that Jesus is the Christ” (Book of Mormon title page). Even today, each time I read these passages of scripture with real intent, I feel my testimony of the Savior resurge, and I am infused with gratitude for him and for all that he has done for humanity.

Slowly but surely, I worked through the seminary program and completed my initial study of the Book of Mormon. With this personal accomplishment—remarkable for me—I began to “wax strong in the presence of God” (D&C 121:45). I remember my father’s reaction very clearly when I told him that I had read every single verse of the Book of Mormon. “Really!” he retorted in utter disbelief. “That is incredible.”

But reading the entire book for the first time was only the beginning of what I expect to be a lifelong, intimate relationship with the most remarkable book the Lord has brought forth in our day.

At the completion of seminary, the natural thing to do was to put Moroni’s counsel into practice: to “ask God, the Eternal Father, in the name of Christ, if these things are not true” (Moroni 10:4). After all, I wanted to know for myself, and asking Heavenly Father was the only requirement. When I finally prayed regarding the authenticity of the book, the Lord visited me through the warmth of the Spirit as if to say, “You’ve known this all along, my son.” With my stronger testimony of the Book of Mormon came a conviction of Joseph Smith as prophet, seer, and revelator—the first prophet of this last dispensation and the Lord’s instrument in bringing forth his church out of darkness and obscurity. My testimony of the Church of Jesus Christ of Latter-day Saints and its leadership was fortified. The plan of salvation provided answers to questions that had long perplexed me—where I came from, why I am here on earth, and where I will go after death. I understood and loved the principle of repentance. Further, I learned at this early age that walking with the Lord did not necessarily mean that our paths will be paved with gold at all times: trials, challenges, and temptations are an integral part of mortal life. The Lord’s words of encouragement to the sons of Mosiah apply to us as well: “Bear with patience thine afflictions, and I will give unto you success” (Alma 26:27).

My greatest challenge in high school was yet to come. On 18 June 1989, I left school with the intention of attending worship services at a nearby Latter-day Saint meetinghouse. But instead of ushers in clean white shirts to welcome me, I saw policemen stationed there to inform members of a “freeze” the government of Ghana had imposed on our church services. This stunned me. Apparently, announcements of the action had been made over radio and television, but since I did not have regular access to these media at boarding school, I had not been notified. The government had mistakenly identified the Church of Jesus Christ of Latter-day Saints as an intelligence group that was a threat to the stability of the country. This allegation was, of course, completely unfounded. But the sanction, which blatantly violated our constitutional rights, was to last for a year and a half. I was troubled and devastated for quite some time. However, my family and the Book of Mormon were a steady source of help and comfort.

During that time, I devoured the Book of Mormon as never before. As often as I could, I went home and read from the Book of Mormon with my family and partook of the sacrament in the comfort and safety of our home. We identified with the poorer class of the Zoramites who had been cast out of their synagogues “because of [their] exceeding poverty; and [they had] no place to worship [their] God” (Alma 32:5). We were comforted by the Spirit of the Lord and knew that, though we were cast out and despised by our enemies, the Lord heard our sincere cries in our afflictions (see Alma 33:10–11).
Our God did not turn his back on us.

After what seemed an eternity, in November of 1990 the ban was lifted. One unexpected benefit of the freeze was the public attention that the church received, evidenced by the influx of new members soon after the ban was lifted. We also experienced a stronger kinship and solidarity among ourselves—family members and church members alike. Generally, members felt fortified and more committed. The Lord had consecrated our afflictions for our gain (see 2 Nephi 2:2). Additionally, a number of my friends developed an unprecedented interest in my religious beliefs. A few friends invited me to explain my religious beliefs and standards to them. One Catholic friend in particular went home with me on a number of occasions to attend our family church service. I believe that the principal deterrent to his becoming a Latter-day Saint was his age: as a minor in a Catholic school, he would have had to clear nearly insurmountable obstacles in order to embrace a new religion.

In retrospect, the Book of Mormon sustained me during this period through its stories and especially through the powerful testimony of the Savior it inspired in me. I developed a spiritual strength that made me feel almost invincible at times. My power to resist temptations and keep the commandments was magnified greatly. The Lord kept his promise to me: “I will not leave you comfortless; I will come to you” (John 14:18). And he did indeed come to me in a way that words are inadequate to describe.

A few years before the freeze in Ghana, in the Conference Report of October 1986, President Ezra Taft Benson, a prophet of the Lord, declared:

Is there not something deep in our hearts that longs to draw nearer to God? If so, the Book of Mormon will help us do more than any other book... It is not just that the Book of Mormon bears testimony of Christ, though it indeed does that too. But there is something more. There is a power in the book which will begin to flow into your lives the moment you begin a serious study of the book. You will find greater power to resist temptation. You will find the power to avoid deception. You will find the power to stay on the strait and narrow path... When you begin to hunger and thirst after those words, you will find life in greater and greater abundance. These promises—increased love and harmony in the home, greater respect between parent and child, increased spirituality and righteousness—these are not idle promises, but exactly what the Prophet Joseph Smith meant when he said the Book of Mormon will help us draw nearer to God.¹

I found fulfillment of the prophet's words in every respect. When I was in the 11th grade and living on a meager allowance, I resolved to be a faithful tithe payer. I strongly desired to learn for myself the benefits of sacrifice: Lehi left behind his gold, silver,
home, and precious things (see 1 Nephi 2:4); King Lamoni’s father was willing to give up all his possessions to know God (see Alma 22:15); and the Anti-Nephi-Lehies were willing to give up their own lives rather than take the lives of their attackers (see Alma 27:29). How much would I be willing to sacrifice to help advance God’s work? My parents gave me the equivalent of about five dollars every month. They did not require me to pay tithing, but I craved the blessings the Lord extends to faithful tithers and resolved to put his promises to the test. As a result, he blessed me far beyond my expectations. For example, my final results for the British Ordinary Level Examination were among the best in all of West Africa. It was evident to me that studying hard for the examination was only one key to my success; the other was my eagerness to keep the law of tithing. The Book of Mormon played a crucial role in motivating me to live so as to receive the blessings that President Benson promised to all who seriously study the book.

By the time high school was over, so much had my testimony of the Book of Mormon and the Savior increased that I knew a mission was right for me. My brief but very real acquaintance with the Book of Mormon had left me in awe of the magnanimity and love of our Heavenly Father and Jesus Christ. I had not talked to anyone previously about going on a mission. In fact, it was a big surprise when I announced it to my family. Education had always been the primary emphasis in my family, and it seemed illogical that with my good grades I now desired to take a different path, at least for a while. But I had made up my mind to devote two years of my life to telling people about the Book of Mormon and inviting them through its power to “come unto Christ, and be perfected in him” (Moroni 10:32). I will be forever grateful for the opportunity I had to serve the people in the Ivory Coast from February 1996 to March 1998. With each life I helped transform, my testimony grew. The small blue copy of the Book of Mormon worked miracles in changing habits, lives, and souls.

Several years have gone by since my initial acquaintance with the Book of Mormon at the age of 12. Now it has become my personal handbook. I read, ponder, and pray about it almost daily. What is amazing about the Book of Mormon is the literal power it offers to seekers of truth. Every single time I read it with real intent, hungering and thirsting to receive a spiritual confirmation, the Lord hears and answers me. The contents never grow old with repeated reading. In fact, it seems the words are reenergized each time I revisit them. While the other canons of scripture are also powerful, experience has taught me that the Book of Mormon brings one closer to the Savior faster. For me, it is truly another testament of Jesus Christ. The Book of Mormon promise—to bring us to Christ—extends to all: “He inviteth . . . all to come unto him and partake of his goodness; and he denieth none that come unto him, black and white, bond and free, male and female; and he remembereth the heathen; and all are alike unto God” (2 Nephi 26:33). The Book of Mormon will become a priceless gem to anyone who will diligently read it and subsequently strive to incorporate its teachings into his or her life. This precious gem will only glow brighter and brighter, illuminating that person’s righteous path.
What’s in a Word? Etymology!

The Book of Mormon teaches that scriptural records are important for two reasons: to preserve the words of prophets and to preserve the language of our ancestors. Preserving the language of the scriptures is one way to pass down the truths of the gospel from generation to generation:

And behold, it is wisdom in God that we should obtain these records, that we may preserve unto our children the language of our fathers; and also that we may preserve unto them the words which have been spoken by the mouth of all the holy prophets, which have been delivered unto them by the Spirit and power of God, since the world began, even down unto this present time.

(1 Nephi 3:19–20)

One way to gain insights in scripture study is to look up the semantic origins of key words in the text. Although “we cannot ascribe anything like ‘fixed’ meanings to words,”1 studying entries in a good dictionary or electronic concordance can illuminate the range and history of a word’s senses. Searching out the etymology of a word is somewhat akin to seeking out the genealogy of an ancestor:

Etymology, we are doing it,
our etymology,
And the truth we gain, when we’re doing it,
is very plain to see.
We gain insights from many words we read;
we learn philology.
It’s a record of our language,
just like a family tree.
Words still living now and their ancient roots
have senses we can glean,
And sometimes we learn gospel insights when
we study what words mean.
All things testify of the love of Christ

when we search faithfully.
It’s the language of our fathers,
a scripture treasury.2

The term etymology, which derives from Greek, refers to the “true” origin, or root meaning, of a word. Because language always changes, the word root (etymon) develops new meanings as people over time use the word in new forms (reflexes). Different forms of the same root can show up in various languages as cognates (related forms). Like a family history, a word history can link us to the thoughts and feelings of people who lived in the past.

In order to follow the etymological roots of words in present-day English and in the 19th-century-English translation of the Book of Mormon, it helps to look at the direct-line ancestry of English as proposed by historical linguists. Philologists call this pedigree the orthogenetic line of a language. Some scholars have estimated dates and reconstructed ancestor languages for earlier periods of English; however, these dates may or may not correspond exactly to biblical events and timetables. In the table that follows, the boldfaced words represent the direct-line ancestors of English in the language families indicated. We cannot trace the history of English words back to the Adamic language because we do not have written records from earlier time periods to attest the connection between ancient languages that emerged from the Proto-World period. However, some scholars have reconstructed the roots of words in English and other languages back to their Indo-European origins using the scientific principles of the comparative method. Harvard professor Calvert Watkins provides many of these IE roots in his appendix to the 3rd edition of the American Heritage Dictionary.3 He lists the IE roots and the related words derived from them that came into contemporary English from Old English, Latin, Greek, Old Norse, and other languages.
To apply an etymological method to the scriptures, we can begin by identifying key words in a passage. The English word heart is a very important lexical item in 3 Nephi 25:5–6 (see also Malachi 4:5–6):

 Behold, I will send you Elijah the prophet before the coming of the great and dreadful day of the Lord; and he shall turn the heart of the fathers to the children, and the heart of the children to their fathers, lest I come and smite the earth with a curse.

Then we can look up the transliterated Hebrew forms and meanings of heart using the electronic concordance included in The Scriptures: CD-ROM Resource Edition 1.0, available at distribution centers of the Church of Jesus Christ of Latter-day Saints. The transliterated form of heart in Malachi 4:6 is lēḇh-, which has the following meanings and connotations as paraphrased from Strong’s concordance, a tool in the concordance program: “the heart; the most interior organ; also used figuratively for the feelings, the will and even the intellect; likewise for the center of anything.” The Hebrew idea of lēḇh- as a center for emotion, desire, and intelligence is parallel to the Oxford English Dictionary entry for the English word heart: “the seat of feeling, understanding, and thought”; “MIND, in the widest sense, including the functions of feeling, volition, and intellect” (definition 5a).

In Watkins’s AHD appendix, we learn that heart traces back to Old English heorte, which in turn traces back to the reconstructed Indo-European form *kerd-, meaning “heart.” The literal meaning of heart as an essential body part has remained about the same, but the word also has a metaphorical extension, so that heart in 3 Nephi 25:6 refers to one’s thoughts and feelings, not the physical organ of the human circulatory system.
The word *heart* underwent noticeable sound changes from Indo-European to Germanic to Old English. The IE initial /k/ segment changed into an /h/, and the final /d/ changed to a /t/, in the Germanic sound shift called “Grimm’s Law.” This helps us see that the English word *heart* and the words *cardia* and *cardiac*, which originated in Greek, are cognates that we have borrowed for medical terminology.

The word *heart* is also a cognate with the word *courage*, which comes to us from Latin, so by metaphorical extension the phrase take *heart* in English means “have courage.” The same Latin reflex gives us the English word *record*, providing a striking connection between the “records of the fathers” (Abraham 1:31; see also Ezra 4:15) and the “heart[s] of the fathers” (3 Nephi 25:6; Malachi 4:6). According to the *Oxford English Dictionary*, the verb *record* means “to get by heart, to commit to memory, to go over in one’s mind” (def. I1a). Etymologically speaking, to “re-cord” is to learn things by heart so that we can ponder them again and again. Records of personal and family history enable our children to “re-member” and “re-turn” to us. Scriptural records enable the hearts of the Lord’s children to turn to the hearts of the prophets, and they enable righteous forebears to speak directly to the hearts of their descendants. Doctrine and Covenants 128 discusses at length the importance of record keeping in performing temple ordinances for our ancestors. This connection between the Spirit of Elijah, redeeming the dead, and keeping holy records seems apparent in Alma 37:3: “these plates of brass . . . have the records of the holy scriptures upon them, which have the genealogy of our forefathers, even from the beginning.”

A different Latin derivation of Indo-European *kərd-* reveals a cognate relationship between the English word *heart* and the concept of “believing” or “trusting.” The words *credence*, *credible*, *credo*, and *credulous* stem from Latin *credere*. However, this connection is attested with a negative connotation, or a pejorative semantic shift, in Doctrine and Covenants 123:7: “that spirit . . . hath . . . riveted the creeds of the fathers, who have inherited lies, upon the hearts of the children, and filled the world with confusion.” In this verse, a creed can be a set of beliefs that turns the hearts of the children away from the words of the true prophets and toward the misguided traditions of their forefathers.

A more positive connotation, or amelioration, links the cognate *grant* from the same Latin root *credere* to the word *heart*. That link adds insight to Alma 33:23, where Alma says, “I desire that ye shall plant this word in your hearts. . . . And then may God grant unto you that your burdens may be light.” A grant is a gift from the heart of one person to the heart of another; to grant something is to give a heartfelt blessing in covenant settings (see Psalm 20:4; Alma 24:10; 31:31; D&C 5:24).

To enhance scripture study, readers may wish to ponder the meaning of key words in relation to their etymons, reflexes, and cognates. Ralph Waldo Emerson, the great New England philosopher of the 19th century, observed that “every word was once a poem.” When we use a good dictionary as part of our scripture study, we can find poetic connections in words. Such explorations can touch our hearts with deeper feelings and fill our minds with further insights. The etymology of words can endorse gospel principles by bearing witness of the Lord and his truths:

> And behold, all things have their likeness, and all things are created and made to bear record of me, both things which are temporal, and things which are spiritual; things which are in the heavens above, and things which are on the earth, and things which are in the earth, and things which are under the earth, both above and beneath: all things bear record of me. (Moses 6:63)

As we let the words of the scriptures bear record of Christ, our hearts will be turned to him and he will grant us his richest blessings.

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Hugh Nibley: A Legend in His Own Time

It is tempting to call Boyd Jay Petersen’s book Hugh Nibley: A Consecrated Life (Salt Lake City: Greg Kofford Books, 2002) a monument to a monument, but that would sound too much like a stone effigy, and this is a biography that lives and breathes with the verve and wit of its subject. As an artifact, it is a beautiful example of the bookmaker’s art, with its mosaic portrait of Hugh Nibley on the cover and its smooth, readable typeface. The many photos add immeasurably to its beauty.

Boyd Petersen, Nibley’s son-in-law, has written a personalized account that manages to be a professional and brilliant evocation of the life and times of one of Mormonism’s most celebrated scholar-thinkers. When I say “one of,” I find myself trying to come up with the names of others in his class. There are only a few who could stand with Nibley. Leonard Arrington once placed him in the company of Lowell Bennion and Sterling McMurrin, calling them the three “leading Mormon intellectuals of the late twentieth century.” Arrington’s taxonomy emphasized McMurrin as a defender of ideas, Bennion as a defender of people, and Nibley as a defender of the faith. I don’t disagree, but like most labels, these are too simplistic. As Bennion’s biographer, however, I noticed many parallels in the lives of Bennion and Nibley, which can be summarized as a devotion to “the things that matter most.”

As a biographer, I can only stand back and marvel at Boyd Petersen’s achievement. At first, I read through all of the footnotes, thinking that they and likely other portions of the work could stand a bit of pruning. But upon reading further, I found myself unwilling to part with any part of the book, from its lengthy footnotes and quotations to its stunning photos and insightful commentaries.

Petersen’s introductory chapter on Nibley’s legendary status among Latter-day Saints is prefaced by a disarming essay by Hugh’s daughter Zina, Petersen’s wife. Her amusing “vignettes” from her life with her father will inspire readers to recall their own encounters with Nibley. Even I have Nibley vignettes to add. For example, I was present at the first East Coast Sunstone symposium, when, as described by Petersen, Nibley addressed 600 puzzled but admiring listeners (p. 398). We were so awed by his knowledge that we forgave him for being inscrutable. A few years later, when I interviewed him for Dialogue, I was impressed with his purple running shoes and his satirical yet lovable personality. I was thrilled when he handed me a speech—one he had delivered on the occasion of the church’s sesquicentennial—with the words, “I want you to publish this” (see “How Firm a Foundation! What Makes It So,” Dialogue: A Journal of Mormon Thought 12 [winter 1979]: 29–45).

Petersen reports that, not long after entering the Nibley family circle, he noticed that no one seemed to be archiving the family records. He began the task as a service to his children, but soon realized that he was on the tip of an iceberg. When he dipped into the treasure house of letters Nibley had preserved—letters to and from his mother, his best friend, his children—Petersen realized that he had the makings of a first-rate biography. When Boyd and Zina Petersen came to study in the D.C. area, they became my helpful friends. As Boyd and I compared notes on the Bennion and Nibley projects, I realized that a son-in-law could write the definitive biography of a revered figure like Hugh. As a family member, Boyd had access to all of the records, all of the writings, and all of the relatives, friends, and
colleagues of this amazing man. The book’s lively quality stems partly from the fact that “most of the information in this book comes from sources that have never seen print before” (p. xii), offering the authentic thrill that primary sources bring to the narrative.

In selecting a way to present the massive amount of information available to him, Petersen hit on the congenial plan of interspersing narrative chapters with thematic ones in “sort of a mosaic” (p. xii). As a result, the long recital of life events is broken up into manageable pieces of background information explaining how and why the themes of Nibley’s life and thought developed as they did. The theme chapters could make a separate book, but they blend in well with the narrative ones and enliven them with portraits of Nibley as social critic, naturalist, and sharp wit. There are also chapters on his life of faith and his scholarship on the Book of Mormon, the Pearl of Great Price, and the temple. There is an astounding chapter on his pacifism. (I found his war experiences to be totally riveting, worthy of movie treatment.) Another chapter covers his relationship with the Hopi. Through this appealing organizational structuring, Petersen succeeds in his ambition to present a “coherent portrait of the man and his views on particular issues” (p. xii).

Nibley’s ancestry is gracefully sketched—material that could have been tedious is presented creatively. The chapter on his Scottish heritage is framed by Nibley’s last visit to his illustrious grandfather, Charles W. Nibley, presiding bishop of the church and second counselor to President Heber J. Grant. The elder Nibley was a successful businessman who, ironically, advised Hugh to stay out of business. Hugh took his advice because he had inherited a respect and love for church leaders. In fact, his middle name, Winder, was bestowed after his mother received a blessing from John R. Winder, who was president of the Salt Lake Temple.

From that point on, the book is an exciting journey through Nibley’s remarkable life. Accounts of his childhood and youth show his early talents for poetry, art, and scholarship combined with a love for the wilderness. Experiences with his family’s lumber business led him to become an environmentalist who opposed the cutting of trees and even the killing of any living thing. He became a voice in the wilderness for the wilderness. As a young man he slept in the woods and still carries the scar from a wolf bite to show for it. One of his reasons for accepting an appointment to Brigham Young University was the attraction of the Wasatch Range and its healing qualities. He also grew to love the deserts of Utah and Arizona and the Hopi people who lived on the Third Mesa. Petersen believes that Nibley could have been a nature writer, for “the same drive and determination that pushed him to learn another language, or read another book, or write another article also pushed him to explore another canyon, climb another mountain, or hike another . . . trail” (p. 67). As an environmentalist, Nibley criticized industrial polluters, referred to the cutting of the redwoods as “a form of murder,” and opposed the sport of hunting. His warnings fell largely on deaf ears, Petersen observes.

Nibley’s later service in the Army Air Force, during which he survived D-day on Omaha Beach and was exposed to the horrors of war on both sides of the war, made him a pacifist. Petersen writes that Hugh “witnessed the atrocities of the European campaign [and] later visited Dachau and German cities firebombed by the British. These scenes left him with memories so horrific that he refuses to talk of them to this day.” The account of his military career is told mainly through eloquent letters. The astute chapter on Nibley as social critic grows naturally from his youthful experiences and military service. His writings have a prophetic quality, painting pictures of the future very much like scenes from the Book of Mormon and other ancient texts. His writings reveal his conviction that the scriptures are constantly teaching valid lessons for today.

When Nibley arrived on the BYU campus on May 25, 1946, he found a campus in the middle of a postwar boom. He was 36 and unmarried. Having survived a few failed romances, he was ready to take the advice of Elder John A. Widtsoe, who advised him to marry soon. In fact, Hugh went further by vowing that he would marry the first young woman he met on campus. She turned out to be Phyllis Draper, a woman he met on campus. She was 16 years younger than he, four months later they were married. Petersen paints the marriage as an inspired union, a true love
story that produced eight talented children whom Hugh described as “fun.” Like other fathers of the time, he was often distant, but it is clear that he delighted in their individual personalities.

Petersen’s informal writing style is a perfect fit for his subject. He describes Nibley’s works as a combination of “great depth and wisdom . . . with a certain ‘hipness’ —youth and vitality that makes him fun. . . . Hugh Nibley combines both arcane tidbits from such sources as the Dead Sea Scrolls or the Patrologia with quotes from pop culture like ‘The Muppet Show’ or ‘Hill Street Blues.’ . . . This ability to put old things in context with the new was not only interesting, but entertaining” (p. xi).

Unafraid to look into certain controversial corners of Nibley’s life, Petersen succeeds in painting an affectionate picture while avoiding the hagiographer’s idealizing brush. He stays focused on Nibley, touching only lightly on the lives of his children and allowing them considerable privacy. “While I have talked at great length with my brothers- and sisters-in-law, . . . I have included comments from them only when they focus on their father’s life,” writes Petersen, who adds that he fully respects their right to tell their own stories (p. xiv). He concludes that Nibley’s scholarly obsessions and his local celebrity status made him atypical of Latter-day Saint fathers but also gave his children a home “brimming with books, ideas, and conversation” (p. xv).

In summing up Nibley’s legendary qualities, Petersen sagely remarks:

Mormon culture . . . needed someone who stood for a combination of pure intellect and pure spirituality . . . untainted by commercial exploitation, academic politics, groupieism or trying to build a following. . . . Hugh not only fills that role but actually is that person. It’s not a mask. . . . This book is an effort to preserve the truth that lurks beneath these stories and to preserve the status of this hero in our culture. (pp. xxx–xxxi)

Writing this book was a labor of love for Boyd Petersen. Reading this book was a labor of love for me. Hugh Nibley has formulated a cohesive philosophy of life and death and a theology of faith that permeate this biography and make for enjoyable reading and reflection. Overarching this towering achievement is his wonderful sense of humor and a love of life that cuts through most of the doom-laden bombast of our time. His massive collected works are nearing completion. I recommend this biography as an indispensable companion to them.
Nahom and the “Eastward” Turn

Nephi preserves few geographic details in the rather sparse narrative of his first book. He writes about Jerusalem, the Red Sea, and “the sea, which we called Irreantum” (1 Nephi 17:5). This last sea, of course, is the Indian Ocean, whose waters wash against the southern shore of Arabia.

From his party’s journey, Nephi also notes stopping places that received their names from his father, notably the Valley of Lemuel and Shazer (see 1 Nephi 2:10, 14; 16:13). These latter locales are more difficult to pinpoint because we have nothing to go on except Nephi’s passing references to each place. Moreover, he does not preserve local names if there were any, although the Valley of Lemuel may well be the modern Wadi Tayyib al-Ism (Valley of the Good Name) in northwest Arabia.¹

In one instance, however, Nephi does preserve a local name, that of Nahom, the burial place of Ishmael, his father-in-law. Nephi writes in the passive, “the

Valley of Nahom/Nihm, looking east. (Photo by S. Kent Brown)
place which was called Nahom,” clearly indicating that local people had already named the place. That this area lay in southern Arabia has been certified by recent *Journal* publications that have featured three inscribed limestone altars discovered by a German archaeological team in the ruined temple of Baran in Marib, Yemen.2 Here a person finds the tribal name NHM noted on all three altars, which were donated by a certain “Bi‘athar, son of Sawâd, son of Naw‘ân, the Nihmite.” (In Semitic languages, one deals with consonants rather than vowels, in this case NHM.)

Such discoveries demonstrate as firmly as possible by archaeological means the existence of the tribal name NHM in that part of Arabia in the seventh and sixth centuries B.C., the general dates assigned to the carving of the altars by the excavators.3 In the view of one recent commentator, the discovery of the altars amounts to “the first actual archaeological evidence for the historicity of the Book of Mormon.”4

It is important to emphasize that in the world of archaeology, written inscriptions are the evidence most sought after because they often establish names and dates, key ingredients for interpreting the past. The inscriptions on the three altars from the seventh and sixth centuries B.C., all mentioning the NHM tribe, prove beyond doubt the existence of this name in that region of Yemen during the first half of the first millennium B.C. when Nephi’s party was on the move.

The case for Nahom, or NHM, in this area is made even more tight by recent study. It has become clearly apparent from Nephi’s note—”we did travel nearly eastward” from Nahom (1 Nephi 17:1)—that he and his party not only had stayed in the NHM tribal area, burying Ishmael there, but also were following or shadowing the incense trail, a trading road that by then offered an infrastructure of wells and fodder to travelers and their animals. From the general region of the NHM tribe, all roads turned east. How so? Across the Ramlat Sab‘atayn desert, east of this tribal region and east of Marib, lay the city of Shabwah, now in ruins. By ancient Arabian law, it was to this city that all incense harvested in the highlands of southern Arabia was carried for inventorying, weighing, and taxing. In addition, traders made gifts of incense to the temples at Shabwah.5 After this process, traders loaded the incense and other goods onto camels and shipped them toward the Mediterranean and Mesopotamian areas, traveling at first westward and then, after reaching the edges of the region of the NHM tribe, turning northward (these directions are exactly opposite from those that Nephi and his party followed). Even the daunting shortcuts across the Ramlat Sab‘atayn desert, which left travelers without water for 150 miles, ran generally east–west. What is important for our purposes is the fact that the “eastward” turn of Nephi’s narrative does not show up in any known ancient source, including Pliny the Elder’s famous description of the incense-growing lands of Arabia. In a word, no one knew of this eastward turn in the incense trail except persons who had traveled it or who lived in that territory. This kind of detail in the Book of Mormon narrative, combined with the reference to Nahom, is information that was unavailable in Joseph Smith’s day and thus stands as compelling evidence of the antiquity of the text. —ED.

(This review is based on the recently published study by S. Kent Brown, “New Light from Arabia on Lehi’s Trail,” in *Evidences and Echoes of the Book of Mormon*, ed. Donald W. Parry, Daniel C. Peterson, and John W. Welch [Provo, Utah: FARMS, 2002], 55–125, especially 81–85, 88–90.)
ENDNOTES

Before DNA
John L. Sorenson and Matthew Roper


4. Many are listed and summarized in John L. Sorenson, as in note 3 above.

5. Lehi’s party left from southern Arabia. In most cases, pre-Portuguese voyages from that spot into the Indian Ocean went east following the predominating winds to reach the southwestern part of the Indian peninsula. Such routes crossed the New World on the coast of the "west sea," we can only conclude that Nephi’s ship had proceeded via the Malacca Straits (Singapore) and thence across the Pacific Ocean, so that their "west sea" was the promised land would have been on the Pacific side of America.


10. Clarence H. Webb ("The Extent and origin of the American Culture," American Antiquity: A Quarterly Review of American Anthropology 26 [1961]: 297–321) long ago pointed out significant similarities between early Mesoamerica and the undefined New World of Point Point, Arizona. There is no trace of those shared features at any site in the intervening 1,200-mile interval. To all appearances, people from the former area traveled directly to western Mexico or elsewhere.

11. See Robert N. Zeatin (review of Ripples in the Chichimec Sea: New Considerations of Southwestern-Mesoamerican Interactions, ed. F. J. Mathien and R. H. McGuire, eds. [Carbondale: Southern Illinois Univ. Press, 1986, pp. 294–65]), who comments on the "parochialism" of American "isolationist" archaeologists who resist any idea that some area other than their own bit of turf was responsible for developments there. On the other hand, he accuses some of considering "the Southwest as little more than an outpost of Mesoamerica." His review of these preferences demonstrates, we believe, that the personal opinions of individual archaeologists, not the quality of the evidence they muster, often determine their viewpoints on this matter.


18. See Times and Seasons, 15 Sept. 1842, 922, which says that the Jaredites "covered the whole continent from sea to sea, with towns and cities." See also Sorenson, Geography of Book of Mormon Events, 9–15, 75–76.


20. The 15 Sept, 1842 Times and Seasons article also suggested that the "wonderful ruins of Palenque" in Chiapas, Mexico, "are among the mighty works of the Nephites," and that they compared favorably with the temple of Nephi. Since the Book of Mormon places the land of Nephi four miles from the land southward, this early model would seem to exclude South America.


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26. See, for example, B. H. Roberts,


41. In Conference Report, April 1929, 15.


45. For further citations in the Book of Mormon, see John L. Sorenson, “When Lehi’s Party Arrived in the Land,” 1–34.


47. Ixtlilxochitl, Obras Históricas, 1:15–16.

48. The late Thomas S. Barthel, in a number of publications recorded eruditely that Hindu cultural and linguistic elements were introduced at different times to central Mexico and Paleonque by intruders from “Greater India.” See especially “Hindu-Maya Secretism: The Paleonque Focus,” Ibero-Americanistas 11 (1985): 51–63; and also his “Planetary Series in Ancient India and Prehispanic Mexico: An Analysis of Their Relations with Each Other,” Tritus 30 (1981): 203–30. Maurice Swadesh believed that the Nahuatl (Aztec) language showed some signs of a possible European; see his “On Interhemisphere Linguistic Connections,” in American and History: Essays in Honor of Paul Radin, ed. Stanley Diamond (New York: Columbia Univ. Press, 1960), 86. Swadesh’s views were independently confirmed in linguistic analyses by the late Mary LeCron Foster of the University of California, Berkeley, in “Old World Language in the Americas,” 1, an unpublished paper read at the annual meeting of the Association of American Geographers, San Diego, 20 April 1992; and also in her “Old World Language in the Americas: 2,” an unpublished paper given at the annual meeting of the Language Origins Society, Cambridge University, September 1993; see also the Festschrift session of Sorenson and Roper.


51. History of the Nahuas before la Huasteca (México Instituto de Investigaciones Antropológicas, Serie Antropológica 26, Universidad Nacional Autónoma de México Ciudad Universitaria), 112.


53. See Annals of the Cahokias, 194.


58. Hints of linguistic complexity exist in the Book of Mormon; see, for example, Omni 1:17, 25;
Mosiah 24:4; Alma 7:1 and 9:21; Moroni 10:15–16; and Ether 12:23–26.

66. See the discussion in Sorenson, Ancient Past, American Indian, 30–36.


70. See Reed, Ancient Past, 10.


75. Because of their length, full references are omitted from this group, either presently or prehistorically.

90. This point is confirmed with regard to the Maya Late Classic (“Izana style”) portrait figures by two prominent scholars. Rómán Piña Chan said, “They are extraordinary for their faithfulness to their human models” (quoted in Linda Schele and Jorge Pérez de Lara, Hidden Faces of the Maya [Poway, Calif.: ALTI, 1997], 11). Schele and de Lara observed that “the Maya figurines represented individual people who had readable expressions on their faces” (p. 13).


93. This definition in tracking historical phylogeny versus within sexu- ality reproducing populations (phylogeny) versus within sexuality reproductive populations (sexology) was first elucidated by Willi Hennig in his Phylo- genetic Systematics (Urbana:

94. The distinction in tracking historical relationships among sexu- ally reproducing populations (physiology) versus within sexuality reproducing populations (sexology) was first elucidated by Willi Hennig in his Phylo- genetic Systematics (Urbana:

95. DNA and the Book of Mormon: A Phylogenetic Perspective Michael F. Whitney

1. The most noted is that of Thomas W. Murphy, “Lamanite Genesis, Genealogy, and Gene- tics,” in American Apocrypha, ed. Dan Vogel and Brent Lee Metcalfe (Salt Lake City: Signature Books, 2002), 47–77; see the “Editors’ Introduction” therein, vii–viii.


3. For a review of studies, including some from the early 19th century; see John L. Sorenson, The Geography of Book of Mor- mon Events: A Source Book (Provo, Utah: FARMS, 1992), 7–35. Consult also Sorenson’s study An Ancient American Set- tling for the Book of Mormon (Salt Lake City: Deseret, 1983), 91–95, 138–189; and When Lehi’s Party Arrived in the Land, Did They Find Others There? (Salt Lake City: Deseret, 1985), 91–95, 138–189; and When Lehi’s Party Arrived in the Land, Did They Find Others There? (Salt Lake City: Deseret, 1985), 91–95, 138–189.

Phylogenetic Perspective


Who Are the Children of Lehi?

5. Crawford, Native Americans, 122.
6. Crawford, Native Americans, 3.
25. In his decision to lead a mission to the apostate Zoramites, Alma recognizes that the word of God can transmit virtue: "And now, as the preaching of the word had a great tendency to lead the people to do that which was just—yea, it had had more powerful effect upon the minds of the people than the sword, or anything else, which had happened unto them; for it did also make them desire that they should try the virtue of the word of God" (Alma 31:35).
27. Richard D. Rust notes that feastng on the word is “implicitly a sacrificial rite” (feasting on the Word: The Literary Testimony of the Book of Mormon (Salt Lake City: Deseret Book and FARMS, 1997), 245.
28. Paul uses the phrase past feeling in Ephesians 4:19, but it appears nowhere in the Bible or in other LDS scripture besides the Book of Mormon. The verb to feel is used to express other unique concepts in scripture. For example, to feel after is used to convey the meaning “to seek after” (Acts 17:27 and D&C 101:8). Jesus Christ uses the expression in D&C 112:13: “Behold, I, the Lord, will feel after them.” Interestingly, Exodus 10:21 and 3 Nephi 8:20 both refer to a darkness that can be “felt”: “Like the concept of the word of God, the verb to feel possesses rich and varied meanings in scripture.
29. The words an hizzing and hiss in the KJV translate derivatives of Hebrew as meaning to hiss or whistle as a signal or summons.
30. In 2 Nephi 29 the Lord associates the gathering of his people with the gathering of his word: “And it shall come to pass that my people, which are of the house of Israel, shall be gathered home unto the lands of their possessions; and my word also shall be gathered in one” (v. 14).

Secret Combinations and Flaxen Cordes Anti-Masonic Rhetoric and the Book of Mormon

Paul V. Moulton

1. Interestingly, William Morgan’s widow, Lucinda, joined the church in 1834. Some historians claim she later became a plural wife to Joseph Smith. Regardless, there is no evidence that Joseph Smith knew William Morgan.
6. My brief electronic search of the Making of America Archives at the University of Michigan (http://moa.umdl.umich.edu) and Cornell University (http://moa.cit.cornell.edu/moa) turned up no occurrences of secret society or secret societies in 19th-century documents. Only a relative few refer to Free masonry. (These sources were available online as of April 2003.)
7. Remarks on Secret Societies,


58. This matter has been reviewed recently by Terry L. Givens, By the Hand of Mormon: The Ameri- can Scripture That Launched the New World Religion (New York: Oxford Univ. Press, 2002), 163–64.


60. William Morgan, Illustrations of Masonry (Cincinnati: M. Gardiner, 1851), 39.


62. Thomas, Digging in Cumorah, 203.


68. William B. Reed, The Diplomatic Year: Being a Review of Mr. Seward’s Foreign Correspondence of 1862 (Philadelphia: John Campbell, 1863), 7; emphasis in original. For another example see James Williams, Letters on Slavery from the Old World: Written During the Canvass for the Presidency of the United States in 1860 . . . (Nashville: Southern Methodist Publishing House, 1861), 205.

F眩sidarbox

Paul Moirrison


3. See Erekold 403; and Robert G. Hatfield, The American house-carpeter: a treatise upon architecture, cornices and mouldings, framing, doors, windows, and stairs. Together with the most important principles of practical geometry (New York: Wiley, 1852), 42.


7. For the purpose of this paper and to avoid confusion, I use the term Mesoamerica rather than Central America. The difference between the two is that Mesoamerica is generally ac- cepted as being the land extending from central Mexico through Honduras and Nicaragua, whereas as Central America extends from the Mexican-Guatemalan bor- der through Panama. My definitions follow those given in Random House Webster’s College Dictionary (1992). Almost all of the active volcanism in the region extends from northern Costa Rica to central Mexico, so Mesoamerica is the appropriate term for use in this paper. For actual locations of the region’s active volcanoes, see figure 1 or the inside cover of Haraldur Sigurdsson, ed., Encyclopaedia of Volcanoes (New York: Academic Press, 2000).


22. See Kossinna, “In the Thirty and Fourth Year,” 146, for how this effect in the wake of the April 1816 Tambora volcanic eruption in Indonesia influenced Joseph Smith Jr’s family to move from New England to New York.


25. As mentioned earlier, sulfuric acid is key evidence of a volcanic eruption because concentrations of sulfate ions, which are a direct measure of sulfuric acid, increase independently of sea salt or continental dust, whose chemical spikes also appear in the ice cores; a “spike” of sulfate ions indicates a volcanic source (see n. 11 above, especially the articles authored or authorized by Gregory Zielinski). Determination of the chemical character of the cores is usually by the following methods: (1) ion chromatography, which detects the majority of water-soluble ions; (2) laser-light scattering, which detects the concentration of insoluble components; (3) electrical conductivity, which reflects the acidity of the core (see Gregory A. Zielinski et al., Potential Atmospheric Impact from the Toba Mega-Eruption—71,000 Years Ago, Geophysical Research Letters 23 [1996]: 837–40) and can use both direct current and alternating current, the former to detect the total acidity of the ice and the latter to measure both the acidity and the total salt content (see L. Karlh et al., “A 500-Year Geophysical Research Accumulation at Amundsen Western Dronning Maud Land, Antarctic, Derived from Electrical and Radioactive Measurements on a 120-m Ice Core,” Journal of Geophysical Research 105 [2000]: 12471–85); and (4) titration of melt-water from the core.

For the purposes of this article, the most important of the above methods are electrical conductivity and ion chromatography. Electrical conductivity is used to indicate areas of high acidity (see Claus Hammer’s article in n. 20 above and Julie M. Paine et al., “Glaicochemical and Paleo of Volcanic Aerosols,” in Norman D. Watkins Symposium: Environmental Impact of Volcanism, 76–82; Zielinski et al., “Volcanic Aerosol Records and Tephrochronology of the Summit, Greenland, Ice Cores,” Journal of Geophysical Research 102 [1997]: 26625–40; Zielinski, “Use of Pale-Records in Determining Variability,” 417–38 and references therein). These areas are then sampled and measured, typically using ion chromatography, in order to determine the sulfate content (see references in n. 11 above and Henrik B. Clausen et al., “A Comparison of the Volcanic Records over the Past 2000 Years from the Antarctic Ice Core Project and Dye 3 Greenland Ice Cores,” Journal of Geophysical Research 102 (1997): 26627–23). Titration is no longer a common method.


29. Tom Simkin et al., Vulcans of the World: A Gazetteer, and Chronology of Volcanism during the Last 10,000 Years (Stroudsburg, Penn.: Hutchinson Ross, 1981).

30. For example, see figure 2 and the respective caption in Jihong Cole-Dai et al., “A 4100-Year Record of Explosive Volcanism from an East Antarctica Ice Core,” Journal of Geophysical Research 105 (2000): 24433.


43. Gill, Great Moya Droughts, 235. In addition, the VEI does not tell how much sulfur dioxide was released during an eruption. Thus the strength of the corresponding acid spike in an ice core does not exactly indicate the size of an eruption. See Robock and Free, “Volcanic Record in Ice Cores,” 334.

44. Newhall and Self, “Volcanic Explosivity Index,” 1232.


46. Cole-Dai et al., “A 4100-Year Record of Explosive Volcanism,” 24434. This is also extensively explained and discussed in Gill, Great Moya Droughts.


50. Simkin et al., Vulcans of the World, 112.

51. It should also be mentioned, because of the number of ambiguities involved, that the lack of evidence would not necessarily mean that a volcanic eruption was not the cause of the destruction. Typically, as discussed above, through the course of a single year multiple eruptions occur whose explosions are not recorded in the ice-core records of Greenland and Antarctica.


Moroni: The Final Voice
Mark D. Thomas

2. There are variations on this ending formula throughout the Book of Mormon. For example, see Alma 54:14; 54:23–24; 58:41; 60:36; 3 Nephi 3:10; 5:19–26.

3. See 2 Nephi 3:13–15; Jacob 2:77; Enos 1:26–27; Mormon 7:22 and references therein. Each end a section of narrator commentary with comments similar to a farewell—this is a kind of minifarewell. In addition to Moroni’s farewell and signature endings, there are other, prosaic endings that simply state the facts of transition of narrators and narration. The ending to the Words of Mormon is such an example.

4. In these letters, Mormon frequently uses the phrase “and now . . .,” which is typical for ancient Hebrew letters as well as in the Hebrew Bible itself. See David Noel Freedman et al., eds., The Anchor Bible Dictionary (New York: Double- day, 1992), s.v. “Letters.” Aside from that feature, the formal features of Mormon’s letters seem to be rather patterned after the Greek letter form used by the apostle Paul. Stowers has identified five ancient Hebrew greetings. Four of the five refer to Yahweh, and the fifth is a greeting to the recipient and his or her household. None of these formal elements are found in the greetings in Mormon’s letters. His letters do, however, mention “grace” as a greeting, as the prayers for the recipient, and as subject matter (compare 1 Corinthians 13:1–13 to Moroni 7:21–48), thereby resembling the Pauline letters and the Greek form that Paul followed. Also see John L. White, Light from Ancient Letters (Philadelphia: Fortress, 1986); William G. Doty, Letters in Primitive Christianity (Philadelphia: Fortnight, 1973); and Stanley K. Stowers, Letter Writing in Greco-Roman Anti- quity (Philadelphia: Westminster, 1966).

5. For a discussion of presence in the Greek letter writing form,
6. See Ether 12:1–41; Moroni 7:1–48; 8:14–17; 10:18–29. In Moroni 8:14–17 the clear reference to faith, hope, and charity is to prove the impropriety of infant baptism. In the other passages cited above, the three virtues are cited in part to defend the Book of Mormon.

7. See Mormon 9:21; Ether 4:7–16; Moroni 10:4–5. In Ether 4 the reader’s ability to obtain revelation is compared to the revelations of the brother of Jared in preceding passages. The entire journey of the brother of Jared in those passages is based on a series of six prayers that are answered by revelation. It is clearly an exemplary tale demonstrating the correlation of prayer and revelation.

8. For the Nephite interpretation of Isaiah 52:1–2 and 54:2, see the reading and interpretation by Jacob in 2 Nephi 6–11 and by Jesus in 3 Nephi 20–23. These passages from Isaiah are interpreted to refer first and literally to the gathering of Israel; second, literally to the gathering of all nations to their land of inheritance; and finally, spiritually to the restoration of the lost gospel of Jesus Christ in the latter days. The context of the passage from Moroni 10 suggests that Moroni interpreted the restoration in the spiritual sense of coming unto Christ and accepting the Book of Mormon. This is the restoration that Moroni is suggesting as the final message of hope.

[With Real Intent]

A Priceless Gem
Andrew E. Dadson

[What’s in a Word?]

What’s in a Word? Etymology!
Cynthia L. Hallen
2. Adapted from Jeanne P. Lawler, “Family History—I Am Doing It,” Children’s Songbook of the Church of Jesus Christ of Latter-day Saints (Salt Lake City: The Church of Jesus Christ of Latter-day Saints, 1995), 94.


[A Reader’s Library]

Hugh Nibley: A Legend in His Own Time
Mary Lythgoe Bradford
1. One of Bennion’s definitions of religion was paraphrased from the philosopher W. P. Montague through his student Sterling McMurrin: “Religion is the faith that the things that matter most will not ultimately be at the mercy of the things that matter least.” Petersen publishes a letter from Nibley responding to a request from McMurrin for philosophical ideas about religion. Characteristically, Nibley bears his forceful testimony of the gospel in capital letters: “I KNOW THE GOSPEL IS TRUE” (p. 430).

[Nahom and the “Eastward” Turn]


5. On these ancient laws, see Nigel Groom, Frankincense and Myrrh: A Study of the Arabian Incense Trade (London: Longman Group Ltd., 1981), 169–70, 181, 183–84. Concerning the taxation of incense and the gifts to the temples, see Pliny the Elder, Natural History, 12.32 (§65).
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