WHO ARE THE CHILDREN OF LEHI?

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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.

Indian Dick's lodge, 1870 (Shoshone). (Photo by William Henry Jackson, William Henry Jackson Collection, L. Tom Perry Special Collections, Harold B. Lee Library, Brigham Young University, Provo, Utah)

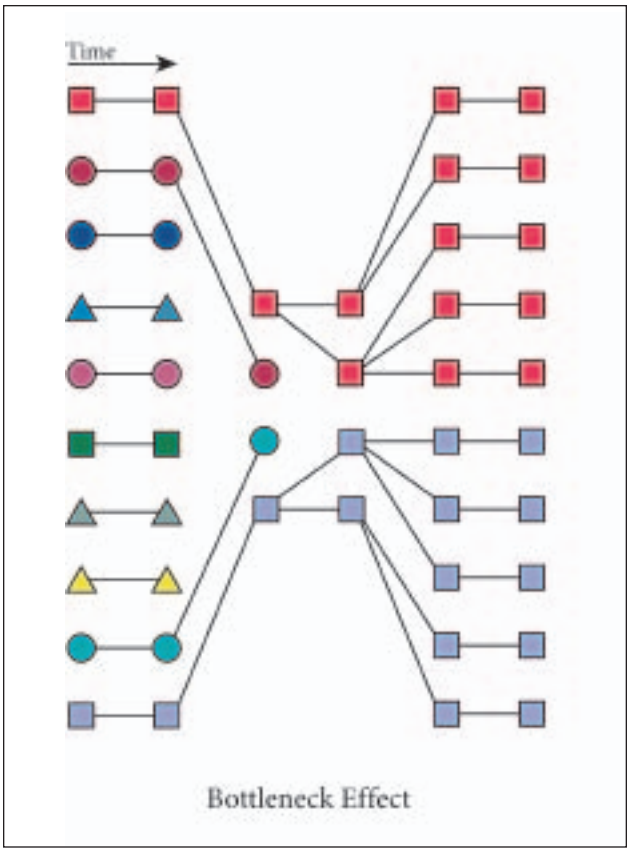
This Joseph, son of Jacob, foretold that a remnant of his seed would be preserved and inherit a land of promise. The principal characters in the Book of Mormon are said to be that remnant, "branches run[ning] over the wall," the "other sheep" of which Christ himself spoke (Genesis 49:22; John 10:16). 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.[1] 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.



Detecting a Middle Eastern source population for Lehi's descendants in the New World is complicated by many factors, one of which is the population "bottleneck" illustrated here. This is caused by the fact that the descendants of a relatively small founding population reflect only some of the genetic characteristics of the original source population. (Chart by Andrew D. Livingston)

The Science of Native American Origins

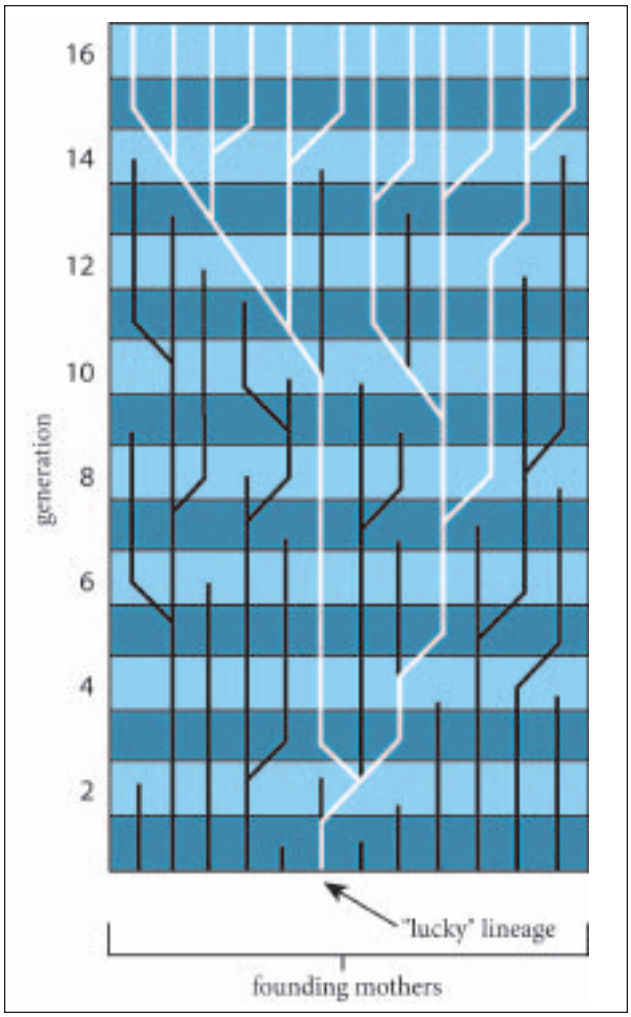
The question of North American origins emerged soon after it became clear that the Americas were not the eastern shores of the Orient. As early as 1589, José de Acosta, a Jesuit missionary in South America, proposed that so-called Native Americans had migrated to the Americas from Siberia thousands of years ago.[2] 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.[3] 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."[4]

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.[5] 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."[6]

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?



Through genetic drift, individual gene lineages may become extinct, eliminating their genetic legacy, while so-called lucky lineages carry on. Small populations, such as Lehi's colony, are especially susceptible to the effects of genetic drift in altering genetic diversity. (Chart by Andrew D. Livingston)

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.[7] Anne C. Stone and Mark Stoneking examined the nuclear and mtDNA from 20 individuals buried in a 700-year-old cemetery in Illinois.[8] 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.[9] 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.[10] 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.[11] 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."[12] 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."[13]

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."[14]

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."[15] 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."[16] 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).[17]

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.

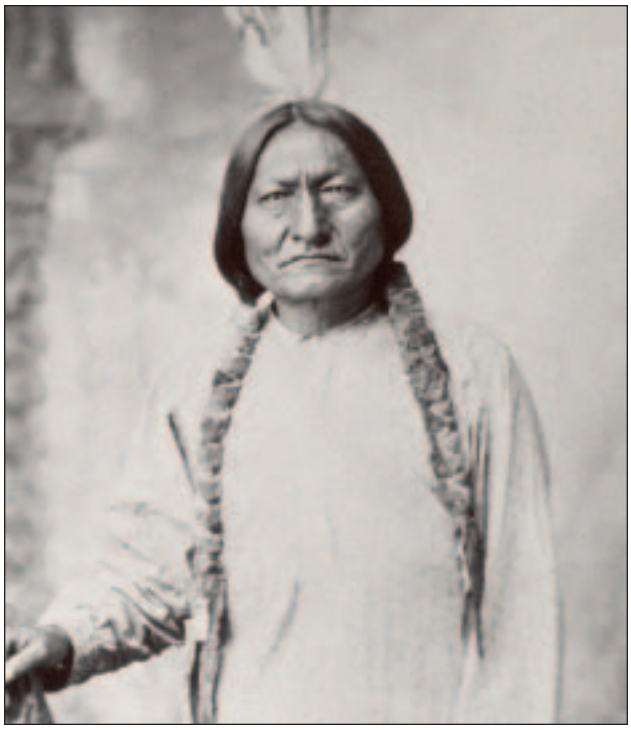
The limited data garnered from studies so far of human populations, in concert with archaeological and anthropological studies, have largely confirmed the scientific hypothesis that northeast Asia is the primary source of the majority of the early inhabitants of the Americas. This conclusion has led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

Standing Elk, 1858 (Dakota). (Photo by McClee's Studio, Washington, D.C. Princeton Collection, P-546, L. Tom Perry Special Collections, Harold B. Lee Library, Brigham Young University, Provo, Utah)



Sitting Bull, late 1880s (Sioux). (Photo by D. F. Barry, Old Army Press Collection, P-130, L. Tom Perry Special Collections, Harold B. Lee Library, Brigham Young University, Provo, Utah)

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 account.)
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 probably never will be found.

Hypotheses 1 and 2 are testable by direct, scientific 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 problematic and may not be testable. Why? Because a very small population introduced into a larger population may or may not be identifiable, depending on whether any specific genetic markers for that population 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 haplotype X existed in south Siberia ended most inquires into its source. This observation was consistent 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 population, 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?

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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 euchromatin 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.

Mitochondrial DNA and Y chromosome DNA reveal just a tiny slice of family history. Only 1 out of 4 great-grandfathers is represented on the Y chromosome, and only 1 great-grandmother in the mtDNA.

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).

Cassadora and his wife, 1876 (Apaches). (Photo by Charles M. Bell, Princeton Collection, P-546, L. Tom Perry Special Collections, Harold B. Lee Library, Brigham Young University, Provo, Utah)

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 nongenetic 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.* If it is any consolation, it could alternatively be thought of as being related to 'memory,' or to the French word *même.* It should be pronounced to rhyme with 'cream.' Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches.[18]

Susan Blackmore wrote in October 1998, in the preface to her book *The Meme Machine,* "I had read Dawkins' *The Selfish Gene* many years before but, I suppose, had dismissed the idea of memes as nothing more than a bit of fun." At least she took note of the term many others apparently skipped right over. "Suddenly [during a prolonged illness, while reading Dennett's *Darwin's Dangerous Idea* and a student's paper on memes] I realized that here was a powerful idea, capable of transforming our understanding of the human mind—and I hadn't even noticed it."[19] Blackmore continues:

> When you imitate someone else, something is passed on. This "something" can then be passed on again, and again, and so take on a life of its own. We might call this thing an idea, an instruction, a behaviour, a piece of information, . . . but if we are going to study it we shall need to give it a name.
>
> Fortunately, there is a name. It is the "meme."[20]

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-

portunities 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.[22]

Curly, Reel Bull, and American Horse, about 1912 (Cheyenne).
(Photo by Flavious Dewitt, P-189, L. Tom Perry Special Collections, Harold B. Lee Library, Brigham Young University, Provo, Utah)

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.[23] 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.

Univ. of Illinois Press, 1979). For a standard textbook on molecular systematics, see David M. Hillis, Craig Moritz, and Barbara K. Mable, *Molecular Systematics* (Sunderland, Mass.: Sinauer Associates, 1996). For a textbook on molecular evolution, see Wen-Hsiung Li, *Molecular Evolution* (Sunderland, Mass.: Sinauer Associates, 1997). For a textbook on population genetics, see Daniel L. Hartl and Andrew G. Clark, *Principles of Population Genetics* (Sunderland, Mass.: Sinauer Associates, 1997).

5. See John E. Clark, "A Key for Evaluating Nephite Geographies," in *Review of Books on the Book of Mormon,* 1 (1989): 20–70; and "Book of Mormon Geography," in *Encyclopedia of Mormonism,* ed. Daniel H. Ludlow (New York: Macmillan, 1992), 176–79.

Who Are the Children of Lehi?
D. Jeffrey Meldrum and Trent D. Stephens

1. See John L. Sorenson, "When Lehi's Party Arrived in the Land, Did They Find Others There?" *Journal of Book of Mormon Studies* 1/1 (1992): 1–34.
2. See Sasha Nemecek, "Who Were the First Americans?" *Scientific American,* Sept. 2000, 81.
3. See Michael H. Crawford, *The Origins of Native Americans: Evidence from Anthropological Genetics* (Cambridge: Cambridge Univ. Press, 1998), 3.
4. Crawford, *Native Americans,* 88.
5. Crawford, *Native Americans,* 122.
6. Crawford, *Native Americans,* 3.
7. See Antonio Torroni and Douglas C. Wallace, "mtDNA Haplotypes in Native Americans," *American Journal of Human Genetics* 56/5 (1995):1234–36.
8. Anne C. Stone and Mark Stoneking, "Analysis of Ancient DNA from a Prehistoric Amerindian Cemetery," in *Philosophical Transactions of the Royal Society of London,* series B, 354/1379 (1999): 153–59.
9. Graciela Bailliet et al., "Founder Mitochondrial Haplotypes in Amerindian Populations," *American Journal of Human Genetics* 55/1 (1994): 27–33.
10. Antonio Torroni et al., "Classification of European mtDNAs from an Analysis of Three European Populations," *Genetics* 144/4 (1996): 1835–50.
11. Peter Forster et al., "Origin and Evolution of Native American mtDNA Variation: A Reappraisal," *American Journal of Human Genetics* 59/4 (1996): 935–38.
12. Michael D. Brown et al., "mtDNA Haplogroup X: An Ancient Link between Europe/Western Asia and North America?" *American Journal of Human Genetics* 63/6 (1998): 1857.
13. Brown, "mtDNA Haplogroup X," 1853.
14. R. S. Malhi and D. G. Smith, "Haplotype X Confirmed in Prehistoric North America," *American Journal of Physical Anthropology* 119/1 (2002): 84–86.
15. Brown, "mtDNA Haplogroup X," 1857.
16. Brown, "mtDNA Haplogroup X," 1859.
17. Miroslavia V. Derenko et al., "The Presence of Mitochondrial Haplogroup X in Altaians from South Siberia," *American Journal of Human Genetics* 69/1 (2001): 237–41.
18. Richard Dawkins, *The Selfish Gene* (1976; reprint Oxford: Oxford Univ. Press, 1989), 191–92.
19. Susan Blackmore, *The Meme Machine,* (Oxford: Oxford Univ. Press, 1999), xix.
20. Blackmore, *Meme Machine,* 4.
21. Boyd K. Packer, "The Stake Patriarch," *Ensign,* Nov. 2002, 44–45.
22. John L. Sorensen, "Was There Hebrew Language in Ancient America? An Interview with Brian Stubbs," *JBMS* 9/2 (2000):54–63.
23. Albert C. Baugh and Thomas Cable, *A History of the English Language,* 4th ed. (Eaglewood Cliffs, N.J.: Prentice-Hall, 1993), 53.
24. Review of "God as Divine Kinsman: What Covenant Meant in Ancient Israel," by Frank Moore Cross, *Biblical Archaeology Review* (July/August 1999): 32ff.; and Frank Moore Cross, *From Epic to Canon: History and Literature in Ancient Israel* (Baltimore: Johns Hopkins University Press, 1998), 8.
25. Cross, *Epic to Canon,* 3.
26. Tad Szulc, "Abraham: Journey of Faith," *National Geographic,* Dec. 2001, 96.
27. Szulc, "Abraham," 118.
28. Szulc, "Abraham," 129.

The Word of God
Leslie A. Taylor

1. For a concise overview of the differing concepts of the Logos in Hellenism, Judaism, and early Christian theology, see J. Lebreton, "The Logos," in *The Catholic Encyclopedia: An International Work of Reference on the Constitution, Doctrine, Discipline, and History of the Catholic Church,* ed. Charles G. Herbermann (New York: Universal Knowledge Foundation, 1913–14), 9:328–31.
2. Two uses of the metaphor of the Logos-*tomeus* are found in sections of Isaiah quoted in the Book of Mormon. The first occurs in 1 Nephi 21:2: "He hath made my mouth like a sharp sword" (compare Isaiah 49:2), and the second in 2 Nephi 7:8: "Who is mine adversary? Let him come near me, and I will smite him with the strength of my mouth" (compare Isaiah 50:8, which omits the last clause). This image that associates the word of God with a sword is also prevalent in the book of Revelation (see 1:16; 2:12, 16).
3. See John A. Tvedtnes, "Rod and Sword as the Word of God," *JBMS* 5/2 (1996): 148–55.
4. The verb form *to divide asunder* seems to possess specific meaning in regard to both sacrifice and the power of the word of God. This construction occurs only 13 times in scripture, 7 of which are quoted in this article. Two references in the Old Testament—Leviticus 1:17 and 5:8—state that sacrificial birds should not be "divided asunder." Hebrews 4:12 (quoted earlier) is the only instance of this construction in the New Testament. The Book of Mormon contains the richest uses of this verb form. It is found in Helaman 3:29, 3 Nephi 8:6; Helaman 5:33; 12:8; and 1 Nephi 17:45 (the last two will be discussed later). All five uses of this construction in the Doctrine and Covenants were quoted earlier.
5. Tvedtnes, in "Rod and Sword," also notes that although in the Helaman passage the word of God "seems to be compared to a sword," the common language and imagery of this passage "ties [Helaman 3:29–30] to Lehi's vision, where it is the rod or the word of God that brings people safely past Satan's obstacles" (p. 154). Helaman 3:29–30 would seem to have two intertextual sources: the unidentified Old World source that it shares with Hebrews 4:12 and also Lehi's vision of the tree of life.
6. Philo, *Heres* 130, in *Philo,* trans. F. H. Colson and G. H. Whitaker (1932; reprint, Cambridge: Harvard Univ. Press, 1958).
7. Philo, *Heres* 140, in *Philo,* trans. Colson and Whitaker. For more discussion on Philo's use of the Logos-*tomeus* metaphor, see David M. Hay, "Philo's Treatise on the Logos-Cutter," *Studia Philonica* 2 (1973): 9–22. For a general background on Philo's life and writings, see David T. Runia, "Philo, Alexandrian and Jew," in *Exegesis and Philosophy: Studies on Philo of Alexandria* (Brookfield, Vt.: Gower, 1990), 1–18.
8. 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—therefore Alma thought it was expedient that they should try the virtue of the word of God" (Alma 31:5).
9. For a discussion of the striking parallels between the exodus story and Nephi's account of his family's journey in the wilderness, see Terrence L. Szink, "Nephi and the Exodus," in *Rediscovering the Book of Mormon,* ed. John L. Sorenson and Melvin J. Thorne (Salt Lake City: Deseret Book and FARMS, 1991), 38–51.
10. Richard D. Rust notes that feasting on the word is "implicitly a sacramental experience" (*Feasting on the Word: The Literary Testimony of the Book of Mormon* (Salt Lake City: Deseret Book and FARMS, 1997), 245.
11. Paul uses the phrase *past feeling* in Ephesians 4:19, but it appears nowhere else 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 Jesus Christ" in 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.
12. The words *an hissing* and *hiss* in the KJV translate derivatives of Hebrew *šāraq,* meaning to hiss or whistle as a signal or summons.
13. 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 Cords: Anti-Masonic Rhetoric and the Book of Mormon
Paul Mouritsen

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.
2. Fawn M. Brodie, *No Man Knows My History,* 2nd ed. (New York: Knopf, 1945), 65.
3. Brent Lee Metcalfe, "Apologetic and Critical Assumptions about Book of Mormon Historicity," *Dialogue* 26/3 (1993): 171.
4. Dan Vogel, "Mormonism's 'Anti-Masonick Bible,'" *The John Whitmer Historical Association Journal* 9 (1989): 29.
5. Robert N. Hullinger, *Mormon Answer to Skepticism: Why Joseph Smith Wrote the Book of Mormon* (St. Louis: Clayton, 1980), 114, n. 31.
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 over 3,000 occurrences of *secret society* or *secret societies* in 19th-century documents. Only a relative few refer to Freemasonry. (These sources were available online as of April 2003.)
7. "Remarks on Secret Societies,