

DNA AND THE BOOK OF MORMON - PART 1

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BIASED PUBLICATIONS CONTINUE

There was a front page article by William Lobdell in the Los Angeles Times, on 16 February 2006. Apparently the same story, A Test of Faith, DNA Research Challenges the Book of Mormon, was published on March 19, 2005, with a front page emphasis in Section D of the Spectrum; the daily paper of St. George. These were the latest of stories that anti-Mormon journalists and sensationalist with bias against the Church, have been writing to focus attention on a supposed confrontation with DNA, Amerindian ancestry and the Book of Mormon. The emphasis in the articles was on the book by Simon.G. Southerton's: Losing a Lost Tribe: Native Americans, DNA, and the Mormon Church, published in 2005 by Signature Books, who also has an anti-Church bias. They recently published a book by one of their officers declaring the Book of Mormon to be fiction. Southerton accommodated this bias by declaring in his book that the Book of Mormon is strictly a fictitious invention composed and orchestrated by Joseph Smith. This is an absurd statement in light of what has been accumulated and published just alone by FARMS let alone the research I have completed on the Book of Mormon names. I wrote a brief response, but they only allow 200 words, hardly two paragraphs. Since I teach science classes, which includes archaeology and biology, from my class notes, handouts, and library resources it seems imperative that I get into this action as well.

My approach is somewhat different and I use books and sources probably others would not or do not use. So for the most part this study should not be a duplicate of the excellent refutations being published by FARMS' writers and other informed parties.

LAMANITE IDENTITY

For many Pacific Islanders the articles and the book by Southerton, and an earlier book by Murphy, seems to have created a "Lamanite Identity" crises. People should not consider their faith in doubt until all the evidence is in and evaluated. In spite of huge strides made in the past decade, genetics is still an infant science; it has a long way to go. For many Mormons it has created grievous despair not knowing how the faith can be defended. Elder Neil Maxwell once said at a FARMS'S dinner, that "if the faithful do not know the faith can be defended, they will lose their faith." It is intended in this presentation to provide information on some of the available data and references that will help defend the faith for the benefit of those who seem to have less than a complete conviction of the authenticity of the Book of Mormon. But be assured, everything can be defended.

and those of the central Pacific, it is clear that too little is known about the Hagoth Migrations especially the large ship mentioned in Alma 63:5, 7-8, often considered to be the ship that vanished into the Pacific and the settlers it carried ended up in Hawaii, named after the Captain of the boat. Another ship also sailed out and no one ever heard from it again. (Alma 63:8) All of this activity and other migrations mentioned in this perculair chapter, Alma Chapter 63, challenges archaeologist in many ways. Attributing the Pacific Islanders as having come from one or more of the Hagoth boats has been the custom of the Church for a century and a half. The departures were about 50 BC. The spread of settlers from their original land fall is known from the genealogical records and stories. Did these early settlers find inhabitants on some of the islands? Did they intermarry with them? What kind of gene pool will be forthcoming from new discoveries.

In the 2006 meetings of the Indo-Pacific Prehistory Association Congress held the 20-26 of March in Manila, reports were given of new discoveries related to early seafarers into the Pacific 1000 years before the Hagoth migrations. Little was known about the Lapita people, as they are called. They can be traced from Island to Island, with some 1000 sites having been found, by their unique red pottery. Then an actual cemetery with rare graves on Efate, in the Vanuatu Islands, was found, now estimated to date 3000 years ago, and excavations have recovered the skeletal remains in twenty five graves of 36 individuals. After excavations this coming summer, the team hopes to extract DNA from the bones to compare with modern populations. They are too early to be Hagoth's people, but there could have been an earlier migration that involved Jaredites into the Pacific, as they were seafaring peoples. Or even other peoples yet to be identified. The DNA results will be most interesting to obtain. This just shows another new factor that has to be factored into the equation. It may be a year or two before we hear about results and comparisons. (Science 21 April 2006, w.w.w.sciencemag.org) It also means that some earlier work on the origins of the Pacific islanders will need revising.

Until all the evidence is in, one must assume the Book of Mormon claims are valid, and that evidence being found in many other areas less controversial than DNA demonstrates that the claims made for the Book of Mormon are truthful, for example the recent work being done on the Book of Mormon names and biological and plant exchanges and distributions, a whole lot of work is being done that confirms the Book of Mormon.

THREE MIGRATIONS INTO THE AMERICAS RECORDED IN BOOK OF MORMON

Great confusion is created by the failure of those studying the Book of Mormon to concentrate their studies within the boundaries of the migrations suggested by that Book, essentially beginning with the Jaredite entry into the new world about 2300 BC. Of what interest is it to try to integrate

knowledge about the movement of peoples across the land bridge of Beringia 25,000 to 13,000 years ago? "Even though the peopling of the Americas has been the focus of scientific investigations for more than half a century, there is still no definitive evidence that will allow specialists to say when the first Americans initially arrived or who they were. [Or where they came from]."

(Bonnichsen p. 1) Recent Russian and American research indicates there was no corridor to the south through Alaska and Canada to the Americas

not otherwise covered with ice. So, the purists have switched to a theoretical coastal and sea lane for the transfer of peoples out of Siberia to the Americas.

(Time, April 17, 2000) But as yet without persuasive success. Some people may have come that way that would only increase the gene pool mix. "Geological evidence—in particular glacial geomorphology—suggests that a continuous system of ice sheets covered the northern outskirts of Eurasia during the last glacial maximum. A part of the system, the Beringian ice sheet was centered on the southern Chukchi Sea, spread out to the shallow Beaufort-Sea and Bering-Sea shelves, and continued as a floating ice shelf, into the deep Bearing Sea. This implied that the true image of ice-Age Beringia was not the conventional scene of a wide-ice land bridge with environments favorable for periglacial biotas and prehistoric humans. Rather, it suggests a terrain that was heavily glaciated, partly flooded by ice-dammed lakes, inhospitable, and impenetrable by animals and humans." (Grosswald, p. 27) How does one fit into these data the Jaredite 2500 BC settlement wave, then the Lehi-Nephi wave of 600 BC, and a decade or so later, the Mulekite wave, the latter were eventually absorbed by the Nephites?

Earlier geneticists (Cavalli pp.

303-308) relying on archaeological earlier

suppositions have drawn conclusions that are not valid, rendering their genetic conclusions unacceptable, and in need of great revision. "First American specialists can enhance model validity and accuracy by integrating all possible lines of independent evidence. [If they ignore the Book of Mormon, and most likely they will, they will have a problem] New paleobiological approaches, which emphasize skeletal and genetic studies, appear particularly promising for enhancing our understanding of who peopled the Americans. [And when.]." (Bonnichsen & Schneider 497)

To get the differences between the

various waves of immigrants, geneticists must dig deeper into genetic detail, including alleles, haplogroups, etc.; no doubt differences are subtle and may exist. It merely says we have a long way to go to distinguish in detail what we are looking for. "Powerful new techniques for direct examination of the alternative forms of human genes, called alleles or gene variants [are being developed].

These variants, which arose by random changes in DNA structure, are responsible for a great deal of human diversity, including differences in susceptibility to particular illness." (Brokman p. 271) Until recently this was only inferred.

Tracking the genes and alleles responsible on each chromosome may be another way to distinguish ancient relationships. Most people are aware of the many American Jews of European descent who inherit the Tay-Sacks gene. It seems that gene gave them some advantage providing resistance to tuberculosis that was endemic in the ghettos of Europe, but deadly when they came to America.

(Pollack p. 51) If the Mulekites had as part of their entourage some one of Levite extraction, some Central Americans should have this gene. But if no Levites came with any of the migrations, then it will not be found

It is evident that Southerton is

not a Book of Mormon Scholar. The first wave of migrants, the Jaredites, came from Central Mesopotamia, from near the City of Kish.

Kish

was the 30th descendant of Jared;

where did they get the name? The Jaredites never had contact with the Eastern Hemisphere again. They are not related to the

children of Jacob, the twelve tribes, and they preceded Abraham by many centuries. They lived until 180 BC in the vicinity of the Nephites.

They had spread all over. Some two million of them were living near the Nephites when they were all destroyed by internecine fighting. (Ether 15:2) How much did they interact with the Nephites and Mulekites before their destruction? How are they to be accounted for genetically? Some one will think of some way to untangle that web of genetic mixing.

A second migration included remnants of two tribes of Jacob, Ephriam and Manasseh. . They are not part of the 'lost tribes'. They had been living in the Jerusalem area for a long time. No matter how much we insist they are not lost tribes of Israel, detractors keep on using the inaccurate designation. Can that mix be distinguished genetically? And the third wave, the Mulekites, included members of the Jewish descendants of King Zedekiah, and what about the entourage that came with him. There were sufficient numbers to permit populations to grow. Were there Phoenicians who brought them among them? Did some of them stay? Who were the other members of the party attending the boy royalty? Did any of the band of Lehi traveling through the wilderness those many years take Arab women for wives" (Hilton p. 141) It will take a lot of time and discrete study of haplogroups and genetic bundles of materials in the nucleolus and cytoplasm of cells to get order out of all of these mixes and track them back 4500 years.

NEW DISCOVERIES CONTINUE

Now recent discoveries (Time April 17, 2000 p. 70) such as the Cactus Hill (Pa) 16,000 to 18,000 years ago, have been likened or compared with the Solutrean Cultures in Western Europe of nearly the same time. Dennis Stanford and Bruce Bradley espouse the Solutrean approach based on additional excavations at the La Reina Cave in Spain and several locations in France. (Toner p. 44-45) Sites such as Meadowcroft (Pa) 17,000 years ago, or the Topper (S.C.) of 12,000 before the present. (Toner p. pp. 40-46) All of these are older than the Clovis, and have definitely changed things. And the discoveries at the Quebradas, Jaguay, and Tacahuay (Peru) 12,000 before the present, pose great questions. While all of these discoveries are of interest they do not serve any purpose where Book of Mormon peoples are concerned. In Chile the Monte Verde site, (Dillhay) at 13,000 BP, (Time, April 17, 2000) or Peru (McNeish Vol. 11, p. 51) deal with hominid forms so early they could not contribute to the gene pool of the peoples of the Book of Mormon. And the recent publications about the 35,000 BP migrations from Southeast Asia to the Pacific have no bearing either, nor do they account for the present Pacific Islanders.

But the discoveries in Ecuador by Turolla and especially the cultures he identified from which he extracted carved stone Elephants estimated to be about 3000 BC, that are mastodons like, (Davis pp. 170-171) and are of great interest. More accurate dating may place those cultures into the Jaredite times and their expansion all over the land because only in the Jaredite Record, in Ether 9:19, are elephants, cureloms and cumoms mentioned.

(Turolla p. 231) Until Turolla brought back the evidence of carved stone elephants, only the Book of Mormon had stipulated that a couple of thousands years before the Christian Era, elephants and men were together in the Americas.

Those who withheld their faith because elephants posed a problem simply did not wait long enough. Patience is required because as time has passed, all of the so called 'problems' are being resolved in startling ways. Turolla's book provides photos of four such carvings in stone of elephants, very well executed. (Turolla pp. 244-245) This is of great importance and interest, as is the ancient epigraphic evidence in the Americas which suggests other peoples in small groups had entered the western Hemisphere from time to time, but during Book of Mormon chronological time lines, 2500 BC to 400 AD. These immigrants would have added to the American gene pool. (McGlone p. ix-xii) Everything has to be accounted for; this is not a selective activity. In time all will be proven.

LOBDELL THE CRITIC

Lobdell, who wrote the newspaper articles, was present in a plenary session, No. 18 The Book of Mormon in Light of DNA Studies: Where are we now? at the Annual Symposium sponsored by Sunstone Magazine, held 21-22 of April, 2006, at Claremont Graduate University, Claremont, California. Educators and scientist, who participated including Lobdell, were Angela Campbell, Armand Mauss and Clifton H. Jolley. The presentation was probably taped. Eventually it may be put out as a cassette. It will be interesting to see what came of that presentation and how pertinent it all will be. Lobdell seems to have a sensationalist streak that motivates him to take up a case against the Book of Mormon full well knowing it is a controversial subject. He can be certain he consternates the uninformed. He can also be certain that he is all wrong.

SOUTHERTON MISSED THE BOAT

Southerton is a plant geneticist assuming expertise in Human Genetics, claiming the Book of Mormon is a fictitious invention, and irate because the Church excommunicated him, but not for his book. His research is extremely faulty and incomplete. He is effectively refuted by Ryan Parr in a 21 page article in FARMS REVIEW OF BOOKS, Vol. 17, No.1, 2005. (Available from BYU Bookstore 1-800-253-2578) In fact, Southerton was totally refuted before he even published his book by geneticist McClellan and three others in FARMS REVIEW OF BOOKS, Vol. 15, No. 2, in 2003, two years before his book came out. And again in BOOK OF MORMON STUDIES, Vol. 12, No. 1, in 2003, by geneticists Whiting and five others, also two years before he published. Most likely he just ignored these studies or he never knew about

them at all, as he does not have a high opinion of those writing for FARMS. These authors cover many facets associated with the DNA approach to the Book of Mormon and present data and the status of the science of genetics, which in reality is still in a rather early development stage as one could realize from reading MAPPING HUMAN HISTORY, by Steve Olson, which is now four years old and is getting out of date.

Also documenting the early stages of development of genetic science and noting the errors that have been made and certain limitations as the science makes progress, and chooses directions yet to be taken, is THE MOLECULE HUNT: ARCHAEOLOGY AND THE SEARCH FOR ANCIENT DNA, by Martin Jones, now five years old, but the historical information remains the same, new technology changes the results. As these and other references are provided, should you ever read the Southerton book, you can check his bibliography to see if he has timely references to books that are reasonably acceptable, and did he avail himself of important such studies that were available. It will appear that he was highly selective in his resources. He simply missed the boat.

AREAS OF STUDY NOT TO BE NEGLECTED

One has to learn to think outside the box. Martin Jones reports a study of the genetics of dogs. The upshot is that data from pre-Columbian dogs and domesticated old world relatives share a common ancestry. Europeans and England had domesticated dogs in the Mesolithic to Neolithic times, 4500 to 2000 BC). (Davis pp. 191-192) The data from the study of old world dogs showed that they did not make the long journey from Asia to America, but came with their owners as domesticated dogs from elsewhere. (Jones p. 113) The Siberian wolf never made the trip. No dogs in the Americas show up with Siberian affinity, yet. Did dogs come with the Jaredites? There were pet dogs throughout Europe and England 1000 years before Lehi. (Davis p. 192) Did pet dogs come with Lehi and his group or with the Mulekites? There are genetic variations built in to a species that are called buffering systems, so that all the genes they have are not necessarily expressed. There is such a tremendous choice in variables that dog breeders work with these systems and by selection come up with all of the possibilities now seen in dogs. (Ray p. 199) In the future, the study of plants and animals may have a lot more to say about who came, when, and from where. Some researchers are taking this into consideration. Ryan Par and others deal with the plant migrations that reveal a lot that confirms Book of Mormon claims. This is becoming an important avenue to study, and has many implications. (Shermer p. 70-72)

MUTATIONS AND CHANGES

The more time that lapses from ancient ancestors to the present, the more mutations that alter and change DNA can set in, including the single-double breakage of DNA by radiation, double strand breakage, either opposite each other or within a few base pairs--difficult to repair, often leading to chromosome damage, and base-pair damage, when two or more adjacent base pairs are damaged, which makes replication of DNA strands impossible. (Biriel p. 25) In other words what mutations have occurred in all THE parties contributing to the gene pools during the past 4500 years?

These are but to name a few areas of study that must not be neglected in the study of Book of Mormon migrations.

SCIENCE JOURNALS

I teach Archaeology and use many Archaeological Journals for the class, especially the journal Science.

One issue of this weekly for 24 April 1998, ([w.w.w.sciencemag.org](http://www.sciencemag.org)), some seven years before Southerton published his book, and favorable to the Book of Mormon view point, has a summary article on Human Genetics: Genes May Link Ancient Eurasians, Native Americans. "The genetic variant called X is found in Native Americans and some Eurasian populations, but not in Asians." A map in the article showed the lineage X in Israel,

Italy,
Finland,

and possibly in Spain, Bulgaria and Turkey.

"Variants are distinct from the true haplogroup X...by those criteria there's no sign of an Asian X" and "In the mitochondrial DNA (mtDNA) of living Native Americans (Science 4 Oct 1996, p. 31) ...researchers ...found common variants, later identified as Haplogroup X was different... [but spotted] in ...European populations. They analyzed Native American, European, and Asian populations... Haplogroup X was only confirmed in the genes of a smattering of living people in Europe...but in not any Asian population." This new genetic marker, now called, Lineage X, suggests a "definite-if ancient-link between, Eurasian and Native Americans," says Theodore Schurr, a molecular anthropologist from Emory University who presented the findings, of all places, in Salt Lake City,

in 1998, at the annual meeting of the American Association of Physical Anthropologists. This was nine years before Southerton published his book. Apparently Southerton, and Book of Mormon detractors, did not access such information, or ignored it entirely, thus they all missed the boat.

Emory researchers Michael Brown and Douglas Wallace, and Antoinio Torroni from the University of Rome, and Hans-Jurgen Dandelt from the University of Hamburg in Germany, were "searching for the source population of a puzzling marker known as X. This marker is found at low frequencies throughout modern Native Americans, and has also turned up in the remains of ancient Americans. Identified as a unique suite of genetic variations. X is found on the DNA in the cellular organelle called the mitochondrion, which is inherited only from the mother. Four common genetic variants, called haplogroups, A, B, C, and D, in the mitochondrial DNA (mtDNA) show up in Native Americans." (Science 4 Oct. 1996, p. 31) These actually define the blood groups. The AB blood group is found in Asians, and in the Eskaleuts and Inupiks, that inhabit the Aleutian Islands, northern Alaska, Central Canada to Greenland, and persist in Siberian tribes. This blood group has stayed with those Eskaleuts, it did not come south.

JOURNEY TO ANANGULA

I have a journal of observations along the Alaskan waterway and the inland passage referring to my Journey northward to Anangula the oldest settlement (8700 BP) in the Aleutian Islands (Cavilli p. 307) in 1996. Between 3000 and 2000 BC, according to old Russian Maps, "Yakut, Evenk, Chukchi, Koryak, and Itelmen peoples...settled in the Aleutian chain." (Viola p. 545) These were mostly from Kamchatka. They numbered more than 20,000 by the time Siberian Fur traders forced their way into the Aleutians. Today there are only about 2500 mixed blooded people left. The Russian fur trapper Grigory Shelikov used these peoples in his seal killing activities even bringing many of them to the Russian River and Fort Ross in California more than 260 years ago. They contributed to the gene pool all along the west coast. Other peoples did come from Siberia; they crossed Beringia, and took up life in the cold north. Of the "1,278 Eskimos in Chukotka, 144 were Yukagirs, the last Mohicans of the North." (Yevtushenko p. 47) Has anyone checked out the genetic contribution the Yukagirs could have made to northwestern American Indians? Chukotka and Alaska are divided twins that are only twenty minutes apart, until recently "the idiotic act of cutting off water and air routes between Alaska and Siberia [a family], residents of Fairbanks have to travel twenty hours via New York and Moscow to reach Bukhta Provideniia, which is twenty minutes away." (Yestushenko p. 35) The Asian migrations from Siberia to the territories of the far north are still there. Family links still exist and members can now visit each other across the Bering Straits. They did not move south. Population movements in Asia "have created an incredibly complex mosaic of ethnic groups, languages, and genetic variants throughout Asia." (Olson p. 133) But the Bearing straight corridor for earlier Americans is still an unproven theory.

TEXAS
A&M UNIVERSITY

The Department of Anthropology at Texas A&M University has a special

section for the study of early Americans. They issue frequent publications and keep track of all of the research that is in progress about Early Americans. A special conference was held at Columbia, South Carolina (www.clovisinthesoutheast.net) summarized in their MAMMOTH TRUMPET, Vol. 21, No. 2, March 2006. (Also see www.centerfirstamericans.com) The old bones of Kennewick Man, and his contemporary, the Spirit Cave Mummy from Nevada (Science 10 April 1998, p. 191) have as yet to yield their genetic data, but soon will, and will be included in a follow up to this preliminary study. But they date 9500 years ago. Some remnants of these early man-like forms would have had to be present 7000 years to 6000 years later to mix with the migrations suggested by the Book of Mormon. There is no evidence of such survival.

When one is looking for Book of Mormon genetic studies the essential thing is to concentrate on evidence for man in the Americas beginning about 4000 BC. But even at that "The connection between Europe and North America looks pretty good," says David Glenn Smith, a molecular anthropologist at the University of California. His team has found X in some paleo-American remains. But the Paleo Indian and the early Archaic Indians from 6000 to 12,000 years ago are of no interest in this matter, they do not impinge on the gene pool of the Book of Mormon peoples. If it is a problem for anthropologists to get the Americans out of Siberia, think of the problem the Russians and Siberians have of getting people into Siberia in the first place, (Derev'anko p. 11) let alone accumulating them for a thrust into the Americas. In an effort to populate Siberia, the archaeologists derive most of the eastern peoples from European and African migrations. (Fiedel pp. 29-38) The same gene pool was left behind in the Levant and Mediterranean regions from where later migrations to the Americas occurred. But where did the unique Asian gene pool that does not have the factor X in its genetic make up originate? And while a case has been made for migrations from the region of Kotzebue, Alaska to the southern edge of Chile at Monte Verde; by Jim Dixon, the dating suggests it was in the reverse order. A lot of people are doing a lot of work to shed light on the many areas of discrepancies. There is a long way to go.

THE BIBLICAL GENE POOL

The gene pool that needs to be examined also has to be defined. Four thousand years BC, the Americas were inhabited by Adam's descendants. What may have happened before 4,000 BC is of little interest, as the theoretical aspects are still great and debated. Adam's children in the Americas from the time of Adam (ca. 4000 BC) came to a bottle neck with the Flood, some 2600 more or less BC, so that only eight people crossed that historical bridge and created a new gene pool, with Ham's descendants, Shem's lineages, and the diverse people of Japheth. (Genesis 10) Three or four generations later, the Jaredites leave the New East for the Americas. What was their gene pool? More than two thousand years later about 180 BC, two million Jaredites were killed in exterminating battles. (Ether 15:2) It is inconceivable that the Nephites did not interact with the Jaredites when there were so many and so close for four hundred years. What would that gene pool look like today?

A study of the Book of Joshua repeatedly tells of interrelationships between the Israelites and their close-by neighbors in numerous chapters. In Chap. 16, the tribe of Benjamin nearly loses all of their women in the wars that ensued. What was in the Gene pool that was generated by the mix of women that were then provided? And when remnants of Benjamin joined the Jews in the Jerusalem after 721 BC, and so assimilated with them that at the time of Lehi there were only Jews recognized. The mix had been completed. What does that do for the Mulekite Gene pool?

THE GENETIC LEGACY OF THE PATRIARCHS

Other genetic questions need to be answered. Who was the mother of Abraham's wife Sarah? Abraham had six sons by his third wife Keturrah. What was she? After all, Moses married a descendant of Keturrah. Jacob had two wives from his cousins, Abraham's family, and two wives, who were handmaids to those two cousins, but nothing is said about their ancestry, but they contributed to the gene pool. We do not know the ancestry of Tamar who was made pregnant by Judah; she is in the genealogical line of Jesus. Nor do we know the ancestry of most

of the wives of the sons of Jacob. What gene pool did they come from and what did they add to the gene pool of the so called 'Chosen People?' And, Israel, three hundred years in Egypt, did any of them marry or have children by Egyptians? Most likely! And Ruth, what about her gene pool, she was married to Boaz the third son of Salmon who had married Rehab who had been saved by Joshua from Jericho, and who was actually for a period of time, Joshua's wife? What was her genetic origin? And Joseph's wife, was she a descendant of Shem, through the dynasties of the Hyksos in Egypt? That is an important genetic consideration as the Nephites were mostly Ephriam and Manassah. Nibley had an opinion on this, not widely circulated. Aseneth's sons are supposed to be the main contributors to the Nephite Gene Pool, are especially important for most of the Western Hemisphere and the Pacific Islands as well.

A review of Biblical History suggests a through mixing of genes with all the adjoining nations surrounding Israel for 1000 years. The intermixing of the original tribes and the local inhabitants was recorded over and over again in various chapters of Joshua. Ezra and Nehemiah were bent out of shape because so many men had married outside women. Another bottle neck occurred at the Destruction of Jerusalem 70 BC, when less than 8000 Jews remained in Palestine, the rest were dispersed. They have come back. The main Jewish populations of Israel today are from Russia. Titus of the Roman Tenth Legion began the 1900 year dispersion of the Jews into and out of many nations. Assimilation into peoples of western European became common place, even intended and announced in The Hamburg Proclamation of 1818 in Germany and the Pittsburgh Proclamations that were circulated in Poland in 1863, declared in favor of assimilation, as if it had not already been extensive. (Rubinstein, pp. 60-62)

SETTLEMENTS IN THE AMERICAS

Part of the problem of settlements in the Americas is the dating of the various migrations and where they came from. All archaeological dates, no matter how they are obtained, must be critically examined not only in light of the intrinsic limitations of the dating technique but also in terms of the archaeological context from which they were derived. Archaeologists' often unrealistic expectations regarding the potential of any dating technique must be mitigated by professional anticipation, or at least awareness of, all aspect of the dating process. This is also absolutely true for geneticists tracking the gene pools of the Americas.

Standford says "I spent 30 years looking for ancestral Clovis technology in Siberia and Alaska...it just isn't there." (Toner p. 44) So he started looking for a jump off points for the Americas somewhere, in Spain or France. (Toner p. 45) Somewhere, perhaps in that region, the Jaredites may have debarked. Lehi took another route and set out to sea off of the Arabian Peninsula. (Hilton p. 149)

It is premature to be absolute about genetic findings, or lack of them, the issues are great and much more complex than one supposes, as is described in the various articles in the FARMS publications.

THE LINEAGE 'X'

"But researchers also found a handful of less common variants, one of which was later identified as X." (Science 24 April 1998) "It was spotted by Torroni in a small number of European populations. So the Emory group set out to explore the marker's source. They analyzed blood samples from Native American, European, and Asian populations, and reviewed published studies." They fully expected to find Haplogroup X in Asia as they had the other groups (A, B, C, and D), found in Native American markers. "To their surprise, however, haplogroup X was only confirmed in the genes of a smattering of living people in Europe and Asia Minor, including Italians, Finns, and certain Israelis" It may also be in Turks, Bulgarians and Spaniards, but haplogroup X has not been found in any Asian population. "It is not in Tibet, Mongolia, Southeast Asia, or Northeast Asia...the only time you pick it up is when you move west into Eurasia." The work of these researchers continues. Why hadn't Southerton and Murphy picked up on this important data? It turns their conclusions entirely around.

THE GENETIC MAP

In a handout for my students, modified after an article in Science there is a preliminary Gene Map of the DNA analyses of 24 tribes of Native Americans. It would be familiar to an anthropologist because it provides the names utilized by them in identifying various groups throughout the western hemisphere, names that would not normally be familiar to archaeologists or interested parties. (See map) The Gene Map shows in the Alaska and Canadian-Greenland areas the presence of the Siberian derived peoples, today known as the Eskaleuts, with an A-B blood group. They are still there, they did not move in any quantity to the south. "Any two healthy people are likely to carry different, distinctive alleles for many genes...Blood type, for instance, is largely determined by which of three normal alleles—A,B, or O—a person carries." (Pollack p. 39)

There is a peculiar homotactic aspect to all of far west Canada, the Haida, Bella Coola and Nootka, with the American Ojibwa and Pima groups, which is the same as for the Maya and six Panamanian tribes, and they are the same as the South American tribes. One might have expected some differences between the Amazonian such as the Wapishana, Macushi, and Kraho tribes, as compared to the Highland Inca, the Ticuna, and Marubo tribes, but they are the same. There is a difference in the Dogribs who occupy western costal Canada, and include the Apache and Navajo, all speaking the same language, are somewhat different from the others. They appeared on the scene when they raided and destroyed two pueblo settlements, Galena and Rosa, in Colorado about 950 AD leaving behind forensic evidence of their peculiar pine pitch baskets and pine pitch pottery. A "surprising fact-discovered some decades ago-concerns the ABO group and the American Indians who are O, except for a number of Canadian tribes that have a very high incidence of A (but not B). On other continents, both A and B as well as O are found, with differing concentrations, and the same applies to America's latecomers in prehistoric times, the Eskimos. More baffling still; work on pre-Columbian mummies had suggested that both A and B groups existed among the Amerinds several thousand years ago. (Sforzo p. 108) How do we explain the presence of A and the absence of B in some northern tribes?

Each resident area that has been fairly stable for a long period of time, particular tribes are subject to examination for mutations and genetic innovations that may have occurred, either beneficial or harmful.

Sforza suggests mutations that confer advantages in the Artic Circle or Siberia do not necessarily do so in the temperate zones, or tropics.

NEW DISCOVERIES THAT PROVE THE BOOK OF MORMON IS NOT FICTION

Recently research on the baggage of 337 unique names contained in the Book of Mormon and especially names in the Jaredites genealogies mentioned in the Book of Mormon show they brought with them personal names now being found and identified on tablets from hundreds of excavations in Mesopotamia dating to 2000 to 3500 BC; many of these tablets were not published until after 1999. (w.w.w.einarerickson.com) To neglect these 337 names is to do so at ones intellectual peril and integrity. Most of those unique names are now being found in one discovery after another of ancient tablets, only recently being translated and made available. These discoveries negate the idea the Book of Mormon is a work of fiction. Fiction it is not, and never was. And the evidence continues to accumulate in favor of the claims made for and in the Book of Mormon.

BIBLOGRAPHY

Birriel,
Jennifer, and Ignacio Birriel, Deadly
Cosmic Storms, Mercury, Vol. 35, No. 1 Astronomical Society of the Pacific,
San Francisco, Calif. 2006

Bonnichsen,
Robson, and Karen L. Turnmire, An
Introduction to the Peopling of the Americas, in Ice Age Peoples of North American, Ed. Robson Bonnichesen &
Karen L. Turnmire, Center for the Study of the First Americans, Texas A&M
University, College Station, Texas, 2005

Bonnichsen,
Robson and Alan L. Schneider, Breaking
the Impasse on the Peopling of the Americas, in Ice Age Peoples of North America, Ed. Robson Bonnichsen & Karen
L. Turnmire, Center for the Study of the First Americans, Texas A&M
University, College Station, Texas, 2005

Brockman, John, *The Next Fifty Years: Science in the First Half of the Twenty-First Century*, Vintage Books, New York, 2002

Cavalli-Sforza,
L. Luca, Paolo Menozzi, Alberto Piazza, *The History and Geography of Human Genes*, Princeton University, Princeton, New Jersey, 1994

Davis, Simon J.
M., *The Archaeology of Animals*, Yale University Press, New Haven, Conn., 1987

Derev'nko, Anatoly
P., Ed. *The Paleolithic of Siberia: New Discoveries and Interpretations*, Novosibirsk, University of Illinois Press, Urbana, 1998,

Dillehay, Thomas
D., *The Settlement of the Americas: A New Prehistory*, Basic Books, New York, 2000

Dixon,
Jim, *The Site on Your Knees Cave*, American Archaeology, 2000

Fiedel, Stuart
J., *Prehistory of the Americas*, Cambridge U. Press, New York 1992

Grosswald, Mikhail
G., *Ice Age Environments of Northern Eurasia with Special Reference to the Beringian Margin of Siberia*, in *Ice Age Peoples of North America*, Ed. Robson Bonnichsen & Karen L. Turnmire, Center for Study of the First Americans, Texas A&MU University, College Station, Texas, 2005

Hilton, Lynn
& Hope A. Hilton, *Discovering Lehi*, CFI

Springville, Utah, 1996

Jones, Martin, *The Molecule Hunt: Archaeology and the Search for Ancient DNA*, Arcade Publishing Co., New York, 2001

Lambert, Joseph
B., *Traces of the Past*, Helix Books, Reading, Mass 1997

McGlone, William
R., et. al. *Ancient American Inscriptions: Plow Marks or History*, Published by Early Sites Research Society, Sutton, Ma., 1993

William, MacNish,
Richard S., Et Al. *Prehistory of the Ayacucho Basin, Peru*, Vo. 11, University of Michigan, Ann Arbor 1981

Nash, Stephen E.,
Ed. *Its About Time, a History of Archaeological Dating in North America*, University of Utah Press, Salt Lake City, Utah, 2000

Old, F.W., and
S.B. Primrose, *Principles of Gene Manipulation: An Introduction to Genetic Engineering*, 5th Ed. Blackwell Science, Oxford, 1995

Olson, Steve, *Mapping Human History: Discovering the Past Through our Genes*, Houghton Mifflin Company, Boston, 2002

Pollack, Robert, *Signs of Life: The Language and Meaning of DNA*, Houghton Mifflin Co. Boston, 1994

Ray, C.
Claiborne, *The New York Times Big Book of*

Science Questions and Answers, Quality Paperback Book Club, New York, 2002

Rubinstein,
Aryeh, The Return to Zion,
Keter Books, Jerusalem,
1974

Turolla, Pino, Beyond the Andes: My search for the Origins
of Pre-Inca Civilization, Harper & Row, New York 1970

Shermer, Michael,
Science Friction: Where the Known Meets
the Unknown, Henry Holt, New York,
2005

Sforza, Luigi
Luca Cavalli-, Genes, Peoples, and
Languages, North Point Press New
York, 2000

Sforza, Luigi
Luca Cavalli, & Francesco Cavalli-Sforza, The Great Human Diasporas, Helix Books, Addison Wesley Publishing
Co., Reading, Mass. 1995

Toner, Mike, Impossibly Old America?
Archaeology, May/June 2006, www.archaeology.org

Vila,
Herman J., After Columbus:
The Smithsonian Chronicles of the North American Indians, Smithsonian,
Orion Books, New York,
1990

Yevtushenko,
Yevgeny, Divided Twins, Alaska
and Siberia, Viking Studio Books, Middlesex,
England, 1988