
SECTION 2: GEOGRAPHY

Editor's Note: *This paper is the full version of the executive summary available at http://www.fairlds.org/DNA_Evidence_for_Book_of_Mormon_Geography/. This paper was last updated 3 September 2008.*

This document is an analysis of the scholarly merits of the evidence and research used by Rodney Meldrum¹ in his firesides and DVD presentation, *DNA Evidence for Book of Mormon Geography*.² Neither FAIR nor this document take any position on the geographic location of Book of Mormon events.³ It is important, however, that Meldrum's theories be analyzed according to the same standards by which other Book of Mormon geography theories are evaluated. To avoid confusion, this paper refers to Meldrum's geographic model as the Limited North American Model, or LNAM.⁴ This document is just one in a series of such analytical documents.

In this document we examine the geographical evidences offered by Meldrum for the LNAM. The examination is relevant to three sections of his presentation: "Geography: Foundations for Book of Mormon Geography" (Section 2), "Book of Mormon Lands: Mapping the Book of Mormon" (Section 15), and "Travel Indications: Book of Mormon Excursions" (Section 16).

It is obvious that Meldrum believes a knowledge of Book of Mormon geography is critical. He explains the reasons behind this belief at the DVD's website:

¹ This paper follows the scholarly custom of referring to an individual, at first reference, by full name and then subsequently referring to the individual by last name only. We fully recognize Rodney as a brother in the gospel, but in discussing secular issues (such as scholarly research and geographic models) it was felt that continually prefacing his name or the name of any other referenced scholar or individual with "Brother" or "Sister," while accurate, would distract from the readability of the paper.

² Rodney Meldrum, *DNA Evidence for Book of Mormon Geography: New scientific support for the truthfulness of the Book of Mormon; Correlation and Verification through DNA, Prophetic, Scriptural, Historical, Climatological, Archaeological, Social, and Cultural Evidence* (Rodney Meldrum, 2008). The DVD is in sections; citations in this paper reference the DVD's section number and title, followed by an approximate time stamp from the DVD.

³ FAIR recognizes that faithful individuals and scholars can honestly disagree on where Book of Mormon events took place; there is no revealed or officially accepted geography. FAIR provides an online reference to over 60 different geographic models at http://en.fairmormon.org/Book_of_Mormon_geography (click on Book of Mormon Geographical Models). That being said, this paper may occasionally make reference to a Mesoamerican model for Book of Mormon geography. Such reference is not made to argue for that particular geographical model, but because (1) the presentation often criticizes Mesoamerican models through misrepresentation and (2) the presentation often makes a claim that is equally true of the Mesoamerican model. If both models make the same claims and meet the criteria necessary for those claims, it stands to reason that both models would be equally viable relative to such claims.

⁴ Meldrum's model places Book of Mormon peoples in an area roughly covering the Atlantic seaboard to the Rocky Mountains. This name was chosen as descriptive of the general model. We recognize that Meldrum may pick a different name at some point and would invite him to do so.

Previously it did not really matter much to most members of the church where the Book of Mormon history occurred, as everyone should have based their beliefs on spiritual witnesses and not physical proof.... The belief that it did not matter where The Book of Mormon took place, is now being challenged because of DNA testing. Because the book is a literal historical record, there should be physical, tangible evidence of the existence of these great civilizations. For the first time in history, knowing the geography of The Book of Mormon is critical to defending the validity of The Book of Mormon itself, for if we are looking in the wrong geographical location, what chance is there of finding this evidence and dispelling the false claims of those who would tear the church and its members down?⁵

Unfortunately, the belief that we need to understand and know Book of Mormon geography is mistaken. Results of DNA testing have been misapplied by critics and by the presentation, as discussed in the first analytical paper.⁶ Further, even if we found an incontrovertible sign that said “welcome to Zarahemla,” those who did not want to believe would still not believe. People have known where Jerusalem has been for millennia, yet that knowledge does not compel belief in the Bible or in the divinity of Christ. Neither does Book of Mormon geography provide a basis for belief—only evidence for those who are already believers. A true basis for belief only comes through a spiritual witness.

Since geographical information does not provide a basis for belief and does not compel one to believe, it is proper to point out that studying Book of Mormon geography is a secular endeavor, not a religious endeavor. Just like biblical archaeology is non-theological, studying any supposed geography of the Book of Mormon, while interesting, should not be confused with religious endeavors related to the book.

With that reality firmly in mind, let’s start to examine the interesting world of Book of Mormon geography.

INTERNAL MAPS

In discussing anything related to Book of Mormon geography, it must be remembered that the majority of the text is the work of a single ancient prophet: Mormon. As one becomes familiar with his great work in editing, redacting, and explaining hundreds of years of records of his people, it is soon evident that he was aware of where significant events occurred and of their relationship in distance and direction to each other. Mormon’s geographical knowledge, displayed through geographical statements and hints in his writing, has come to be referred to by scholars as “Mormon’s map” or as an “internal map” of the Book of Mormon.

Piecing together the geographical information that Mormon included in the Book of Mormon allows us to reconstruct, as much as possible, that map. The benefits of doing so

⁵ Answer to the question “Why is knowing the geography of the Book of Mormon important?” on Meldrum’s website, <http://www.bookofmormonevidence.org/FAQ.php>, accessed August 27, 2008.

⁶ This paper, “Section 1: DNA Evidence,” is available online at http://www.fairlds.org/DNA_Evidence_for_Book_of_Mormon_Geography/.

should be immediately obvious—it does no good to suggest a geography that is contradicted by the Book of Mormon itself. In addition, once a viable internal map has been created, based on the text of the book, then one can search about to find a real world setting that matches the demands of the text.

To propose a Book of Mormon geography that does not take Mormon’s writings fully into account does not reflect sound scholarly practice. Unfortunately that is one of the major mistakes that Meldrum makes—he fails to take into account every geographic reference and hint provided in the Book of Mormon.⁷

In effect the DVD presentation has the process backward—it starts from the real world and then tries to shoehorn the Book of Mormon into the area in which the DNA evidence somehow proves the Nephites lived. “I find it very interesting,” says Meldrum, “that Joseph Smith sent the first missionaries to the tribes that today have haplogroup X DNA. And I don’t think that that’s coincidental.”⁸ (Unfortunately it is nothing but coincidental, as an analysis of the presentation’s use of DNA evidence demonstrates.⁹)

MAKING AN INTERNAL MAP: AN EXAMPLE

Various scholars have attempted to create maps based on the contents of the Book of Mormon, with varying degrees of success. The primary purpose of creating an internal map is to assist individuals in understanding the context of the events and teachings that Mormon chooses to present. If we are cautious, however, we can also use such a map as a guide to testing theories about any particular Book of Mormon geography proposal. Even though scholars may disagree on the placement of the internal map on the real world, all are in agreement that the place to start is with a map based on Mormon’s writings.¹⁰

To show how important it is to start with an internal map, let’s perform a little exercise. Consider a few (but not all) of the geographical references from the book of Alma. There we discover that there was (1) a city called Zarahemla, that it was (2) on the west bank of a river called Sidon (Alma 2:34), that it was (3) at a lower elevation than another city called Nephi (Alma 27:5, 57:15–16), and that (4) Nephi was south of Zarahemla (Alma 22:27–28) with (5) a strip of wilderness that was difficult to traverse between them that was at an even higher elevation (Alma 27:14).

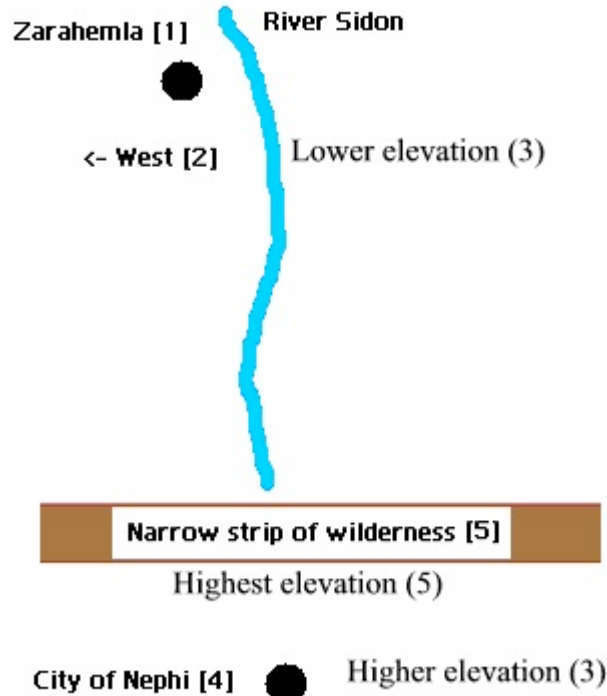
⁷ Much of the work has already been done, without reference to real-world locations. A list of every geographic reference in the Book of Mormon has already been supplied in John L. Sorenson, *The Geography of Book of Mormon Events: A Source Book* (Provo, Utah: Foundation for Ancient Research and Mormon Studies, 1990). Sorenson then provides an excellent example of presenting his “internal” geography in John L. Sorenson, *Mormon’s Map* (Provo, Utah: Foundation for Ancient Research and Mormon Studies, 2000).

⁸ Meldrum, *DNA Evidence*, section 3, “Joseph Smith,” 20:25-20:35.

⁹ For a full analysis of the DNA evidence, see “Section 1: DNA Evidence,” available online at http://www.fairlds.org/DNA_Evidence_for_Book_of_Mormon_Geography/.

¹⁰ The necessity of this is well explained by John E. Clark, “A Key for Evaluating Nephite Geographies,” Review of *Deciphering the Geography of the Book of Mormon*, by F. Richard Hauck, *FARMS Review of Books on the Book of Mormon* 1/1 (1989): 20–70.

Grab a pencil and paper and, based upon these geographic indicators, draw a map that takes all five points into account. When you are done, your map will probably look something like this:



Now you have a very rough internal map that corresponds with the text that Mormon wrote. If you were offered a geography that violated anything on your internal map, you would know that what you were offered was wrong. This shows how you can use the map mandated by the actual text of the Book of Mormon to evaluate any geographic theory that scholars or others may propose.

COMPREHENSIVE INTERNAL MAPS

Creating this simple internal map was not terribly difficult; there were only five geographic points to take into account. Constructing a complete internal map, based on the entirety of the Book of Mormon, is much more difficult. The reason is because there are many more than five geographic points to consider and to correlate to each other—hundreds more.

In one of the earliest serious attempts to deal comprehensively with Book of Mormon geography, Dr. John L. Sorenson noted the difficulties that previous attempts (including his own) had encountered:

Of course it is [a] truism that studies of an ancient text should begin with the text itself. Yet most studies in fact neither begin nor end so....My own book cites Book of Mormon verses over 960 times. But even so many citations does not mean the text is “speaking for itself.” For who can doubt that I *chose* those verses and the interpretations I provided for them while omitting

others. Other people too have chosen their verses and their interpretations. We cannot get far if mere opinion determines which set of verses we rely on, whether it is 1000 or 10.

We need instead to use the *entire* scripture, without exception. Selectivity should be avoided like the plague. We must understand, interpret and deal successfully with *every* statement in the text, not just what is convenient or interesting to us. That can only be done, I believe, by doing our level best to approach the words of the book of Mormon having to do with geography without preconceptions. I admit that my own (1955) model was tainted by preconceptions. So has everybody else's been.¹¹

Though developed after Sorenson wrote these words nearly two decades ago, the LNAM suffers from the same flaw—it has not considered and accounted for every statement in the Book of Mormon. It is therefore all too easy to find points upon which the model contradicts the Book of Mormon text.

TESTING THE MAP

It is impossible to “prove” that a certain internal (or external) map is correct. All we can do is show that a certain map is plausible and consistent with everything in the Book of Mormon. It may, however, be possible to *disprove* a map. If, for example, a map claimed that Zarahemla was on the east of the river Sidon, we would know from our internal map based on the Book of Mormon text that this cannot be true.

Any proposed Book of Mormon map:

- A. Must match the relationships between features described in the Book of Mormon text.
- B. Must have sites in the right location relative to each other that are also the right distance from each other.
- C. Must not violate known physical laws: for example, rivers do not run uphill. A map that requires a river to flow uphill is not plausible.
- D. Must not violate the real-world “facts on the ground.” For example, a hill to the north of a city in the Book of Mormon cannot be located to the south of the city when the map is placed in its proposed real-world location.
- E. Should not misrepresent alternative models.

The last point requires a bit of explanation. Disproving one map does not provide support for any other map. If we can demonstrate that the LNAM is in error, this provides no evidence that (say) a Mesoamerican map is correct—both could be wrong.

¹¹ Sorenson, *The Geography of Book of Mormon Events*, 209-210.

If however, one geographical model *misrepresents* another model, this is cause for concern. In our case, we will see that the DVD presentation often misrepresents a model proposed by others—either because the author did not understand the model he criticizes or because he wishes us to dismiss the model and conclude that his is the only plausible option that remains.

We will now test several claims made by the LNAM in the presentation, according to the five criteria just presented.

CLAIM 1: HAGOTH

Hagoth is a Nephite shipbuilder mentioned in Alma 63. The DVD presentation mentions that Hagoth “could have just followed the Great Lakes all the way out to the ocean, and from there he could go anywhere.”¹²

According to Alma 63:5, Hagoth launched his boat into the west sea, which the LNAM identifies as Lake Michigan. His boat was not small, as Alma 63:6 indicates that many Nephites entered into it and it held “much provisions” and held “many women and children.” This would make it impossible to navigate natural obstacles such as Niagara Falls (which connects Lake Erie and Lake Ontario), and such navigation would be necessary in order to get to the ocean.

Thus, this claim for the LNAM is impossible; it violates points C and D. When Hagoth was building and sailing boats (approximately 55 BC) it was impossible to navigate a ship from the Great Lakes to the ocean. Such navigation was not possible until the construction of the Erie Canal in 1825.¹³

CLAIM 2: THE RIVER SIDON IS THE MISSISSIPPI RIVER

Point A indicates that any proposed model must match the relationships between features described in the Book of Mormon text. Let’s examine some of the characteristics of the river Sidon, based upon the text itself. We can then compare those characteristics to the location of the river Sidon proposed in the LNAM.

The text of the Book of Mormon indicates that the head of the river Sidon is located in a narrow strip of wilderness.¹⁴ It is reasonable that this wilderness was elevated more than the surrounding area, as rivers flow downward from their head. The head of the river Sidon is in the south of the Nephite territories, as Zarahemla is to the north of the head.¹⁵ Since we know that the river Sidon runs by Zarahemla¹⁶ and has its head to the south of Zarahemla, the river Sidon must run south to north.

¹² Meldrum, *DNA Evidence*, section 2, “Geography,” 9:40-10:00.

¹³ See http://en.wikipedia.org/wiki/Erie_canal (last accessed June 6, 2008).

¹⁴ See Alma 16:6 and Alma 22:27.

¹⁵ *Ibid.*

¹⁶ See Alma 2:15, Alma 6:7, and Mormon 1:10.

The LNAM, as presented in the DVD, identifies the present-day Mississippi River as the river Sidon. However, the geography of the Mississippi River doesn't fit the Sidon. The headwaters of the Mississippi are at Lake Ataska in Minnesota. Not only is this not located in a narrow strip of wilderness as the Book of Mormon requires, it is in relatively flat terrain at an altitude of 939 feet.¹⁷ In addition, the Mississippi flows south from its source, not northward as in the Book of Mormon.

Perhaps realizing that the LNAM geography is not working relative to the river Sidon, the DVD's website adopts a concept of "the head" being a "confluence" of two rivers and locates this "head" at the junction of the Ohio and Mississippi rivers.¹⁸ This attempted solution seems to be an *ad hoc* hypothesis,¹⁹ as the result would be many "heads" at each confluence, not the single one always mentioned in the Book of Mormon.

This approach does not, ultimately, help the case for equating the Mississippi River with the river Sidon. First, the river Sidon still clearly runs in the opposite direction of the Mississippi River. Second, there is no feature at this confluence in the real world that corresponds to the "narrow strip of wilderness" in which the river Sidon's head must be located. The LNAM uses the Ohio River as the geographic feature that separated the Land of Nephi from the Land of Zarahemla, but the Book of Mormon explicitly describes this barrier as a wilderness in which one can easily become lost—hardly descriptive of the area surrounding the confluence of the Mississippi and Ohio rivers.

Point C of the evaluation points indicates that any proposed geography must not violate known physical laws. However, equating head of the river Sidon with the confluence of the Mississippi and Ohio rivers does just that. From that confluence, the LNAM has the river Sidon (Mississippi) continue south, past the entire land of Nephi and the land of first inheritance until it reaches the Gulf of Mexico. Consider the following points from the Book of Mormon, however:

- When traveling from the land of Nephi (Lamanite territory) to the land of Zarahemla (Nephite territory), people always travel down, never up. Unless the text is consistently wrong in describing travel in this way, the land of Nephi is at a higher elevation than the land of Zarahemla.²⁰
- Mosiah led his people "into the wilderness," presumably the narrow strip of wilderness which separates Nephi and Zarahemla and houses the head of the river Sidon. From there they went "down into...the land of Zarahemla."²¹ Thus, Zarahemla is lower in elevation than the wilderness.

This means that were a river to run from Zarahemla to the land of Nephi (as shown in the LNAM) it would have to flow uphill—which violates physical laws. In addition, the

¹⁷ The flow rate of the Mississippi River is mainly due to its massive drainage area rather than a decline in elevation from its source to its exit in the Gulf of Mexico.

¹⁸ Rod Meldrum, "Frequently Asked Questions," <http://www.bookofmormonevidence.org/FAQ.php> (last accessed September 1, 2008).

¹⁹ See http://en.wikipedia.org/wiki/Ad_hoc#Ad_hoc_hypothesis (last accessed September 1, 2008).

²⁰ See Helaman 1:17, for example.

²¹ Omni 1:13.

Mulekites landed on a seacoast in Desolation in the land northward and “they came from there up into the south wilderness” where they arrived at the land of Zarahemla and were later found by Mosiah.²²

This causes even further problems for the LNAM. The Book of Mormon describes land for which the elevation rises as one goes from Desolation to Zarahemla. It rises again as one goes from Zarahemla to the narrow strip of wilderness. Only then does it drop to the land of Nephi.

If an internal map follows the Book of Mormon text and has the river Sidon run from its head in the narrow strip, this is no problem at all—water runs downhill from the head to Zarahemla to Desolation and the sea. But, if we follow the LNAM map, then the river Sidon runs from the head (confluence of the Mississippi and Ohio rivers) southward and empties into the Gulf of Mexico, not into one of the seas.²³

Point D of the evaluation points indicates that any proposed geography must not violate the real-world “facts on the ground.” You’ve already seen how the internal map of the Book of Mormon necessitates a change in elevation from south to north, from the headwaters of the river Sidon in the narrow strip of wilderness to the land of Desolation. The LNAM simply doesn’t match such a geography.

The Mississippi River, from its head to its mouth, follows a very gentle change in elevation from north to south. At its source at Lake Itasca, the elevation is 1,475 above sea level. It loses 647 feet of elevation to be at 801 feet before the St. Anthony Falls. After descending the only waterfall in its course, it is only 725 feet above sea level.²⁴ Only 72 feet of elevation is lost by the time Nauvoo is reached, just over the river from the LNAM’s proposed site for Zarahemla. At the confluence of the Mississippi and Ohio rivers (which the LNAM refers to as the head of the river Sidon), the elevation is only 325 feet above sea level.²⁵

The small drops in elevation along the lengthy course of the Mississippi River, besides going in the wrong direction, would not be detectable to anyone walking on the ground. The Mulekites would likewise not be moving up as they travel from the LNAM’s land of Desolation (the area above and within the Great Lakes) to its proposed Zarahemla site.²⁶

In sum, equating the river Sidon with the Mississippi River simply doesn’t make sense. It fails several of the analysis points (A, C, and D) that must be met for a geographic model to be viable.

²² See Alma 22:30-31.

²³ The LNAM identifies the Book of Mormon seas as the Great Lakes, and places the land of Desolation around the Great Lakes. That’s quite a distance from the Gulf of Mexico.

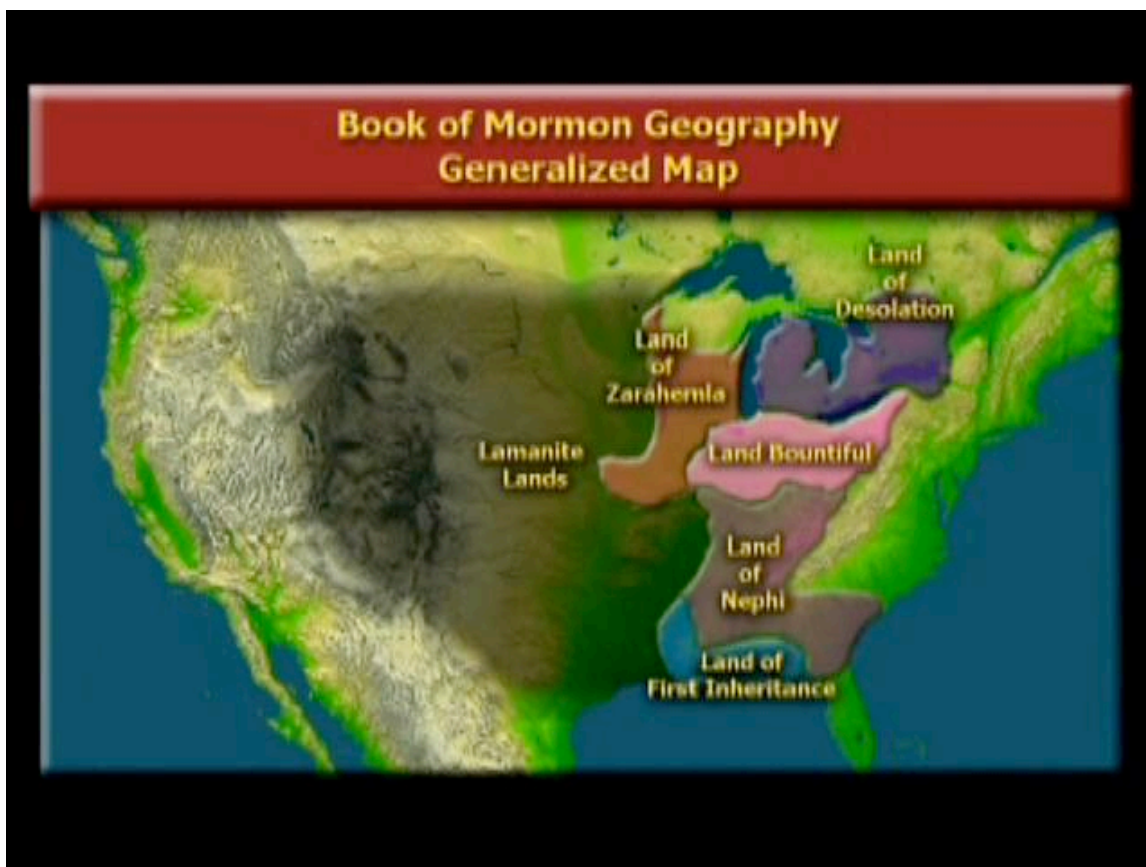
²⁴ http://en.wikipedia.org/wiki/Mississippi_River#Source (last accessed September 1, 2008).

²⁵ This means that the real-world setting for the LNAM requires that the land of Zarahemla be higher in elevation than the head of the river Sidon, something not supported by the text.

²⁶ Sault Ste. Marie, Michigan (on the Canada-US border between Lake Superior and Lake Huron) is 607 feet above sea level—a close match for the 653-foot elevation of the LNAM’s Zarahemla site. See <http://www.earthtools.org/index.php?x=-91.38472&y=40.55&z=5&t=4&m=Map> (last accessed September 1, 2008). The Mulekites and Nephites would be unlikely to refer to a 46-foot elevation rise over a straight-line distance of 541 miles as “up.”

CLAIM 3: GEOGRAPHICAL RELATIONSHIPS BETWEEN BOOK OF MORMON LANDS

The geographical relationship of Book of Mormon lands is best understood by looking at the proposed LNAM map. This map is repeatedly used in the DVD presentation:



Point A of the evaluation points indicates that any proposed geography must match the relationships between features described in the Book of Mormon text. How do the LNAM relationships compare?

Book of Mormon	Reference	LNAM Claim
Bountiful is north of Zarahemla	Alma 22:30–31	Bountiful is southeast of Zarahemla
Zarahemla is directly north of the land of Nephi	Alma 22:33	Bountiful is directly north of the land of Nephi
Narrow strip of wilderness separates land of Nephi from land of Zarahemla	Alma 22:27	The land of Bountiful separates land of Nephi from land of Zarahemla

Book of Mormon	Reference	LNAM Claim
Nephites block narrow neck and narrow pass, preventing entrance into the land northward; this is of major strategic importance.	Alma 22:34, Alma 50:32–34, Alma 51:30, Alma 52:2, and Alma 52:9	Most of the land northward is closer to Nephite lands than the narrow neck, which is between two of the Great Lakes. The narrow neck appears of no strategic importance whatever.

Obviously the LNAM doesn't match the text of the Book of Mormon; evaluation point A is not met.

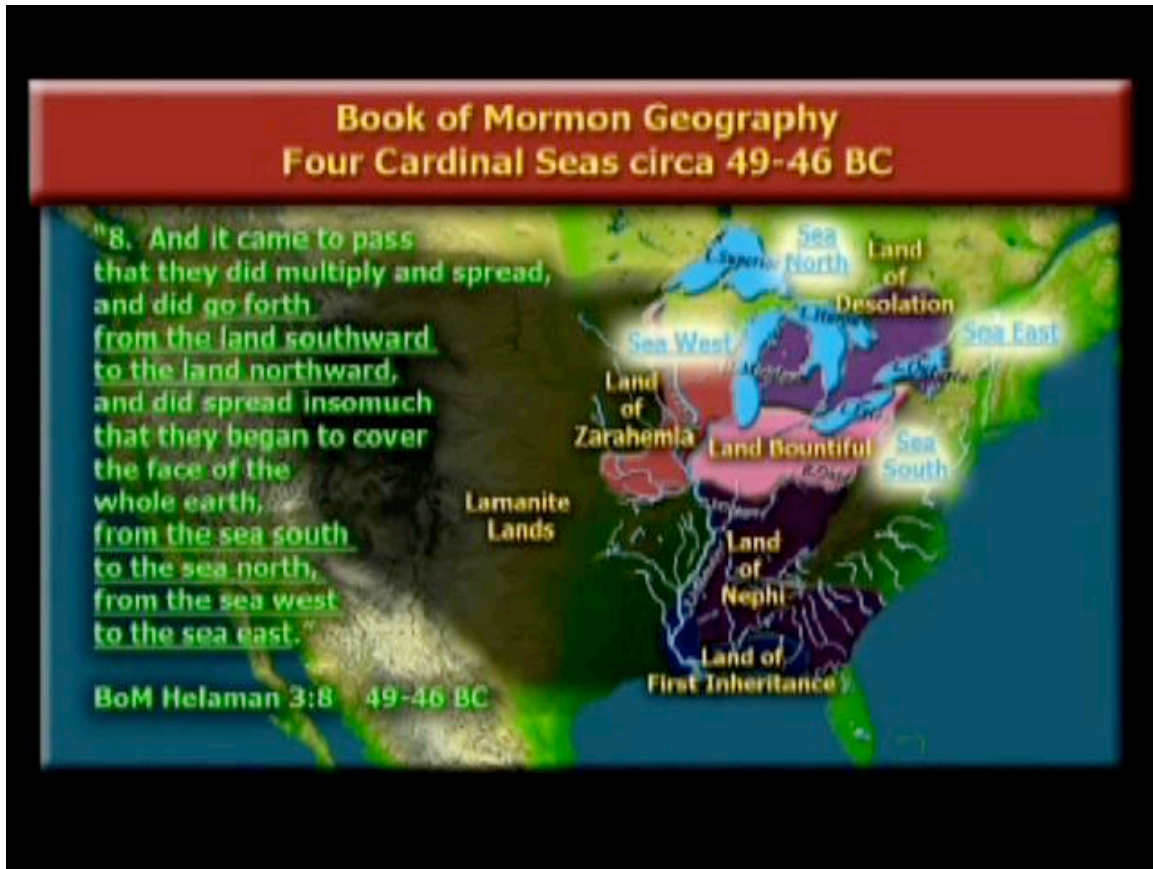
Point D of the evaluation points indicates that any proposed geography must not violate the real-world “facts on the ground.” In the Book of Mormon, very little happens in the western wilderness besides the Lamanite sneak attacks on Ammonihah by that route. Moroni ultimately drives out the Lamanites on the west (Alma 50:11)—this is feasible and understandable in a model in which the west sea limits the western wilderness to a relatively narrow strip.

In the LNAM, however, the western area dominated by the Lamanites is much too large—the Lamanites have the entire Great Plains open to them. Why couldn't they use this huge geographic advantage—unencumbered by natural obstacles—to simply detour around any attempted Nephite blockade of the western wilderness?

In sum, the geographical relationship between Book of Mormon lands in the LNAM does not pass evaluation points A and D and present cause for the rejection of the model.

CLAIM 4: GEOGRAPHICAL RELATIONSHIPS BETWEEN BOOK OF MORMON LANDS AND WATER

The geographical relationship of Book of Mormon lands and various bodies of water is best understood by again looking at a proposed LNAM map. Note the naming of various bodies of water in this map:



Point A of the evaluation points indicates that any proposed geography must match the relationships between features described in the Book of Mormon text. How do the LNAM relationships between lands and various bodies of water compare?

Book of Mormon	Reference	LNAM Claim
Land of Nephi stretches from the sea east to west	Alma 50:8	Land of Nephi touches none of the seas: north, south, east, or west
Sea west is west of Zarahemla and land Bountiful	Alma 22:33 and Alma 63:5	Sea west is east of Zarahemla and north of Bountiful
The land of Nephi and the land of Zarahemla were nearly surrounded by water	Alma 22:32	None of the seas surround these lands at all; at least 270 degrees is land
There is seashore to the west of Zarahemla	Alma 22:28	No seashore to the west of Zarahemla
There is seashore to the west of Nephi	Alma 22:28	No seashore to the west of Nephi

Book of Mormon	Reference	LNAM Claim
The seashore to the west of Nephi is the land of first inheritance	Alma 22:28	Land of first inheritance touches none of the seas north, south, east, or west; its only seashore is the Gulf of Mexico, to the south
Hill Cumorah/Ramah is beyond the narrow neck in the land northward, in the land of Desolation	Mormon 2:29 and Mormon 6:2–6	Desolation is the area above and between the Great Lakes, but to get to Cumorah one must either cross or travel around the “sea east,” which is south of Desolation

Obviously the LNAM doesn’t match the text of the Book of Mormon; evaluation point A is not met and the geographic model should be rejected.

CLAIM 5: DISTANCE FROM THE LAND OF NEPHI TO ZARAHEMLA

One of the first tasks of any geographer is to decide how large a mapped area is. In the Book of Mormon there are no indicators of distances, as we would note them, in miles. Instead, distances are noted in travel times—how long it takes an individual or group to travel a specific distance between two points. Travel times and the distances they imply have been a recurring topic of study among Book of Mormon scholars over the years. It is a topic that the DVD presentation touches upon, as well.

Before delving into distances in the LNAM, it is important to examine the text of the Book of Mormon relative to this issue. The key to establishing distances is Alma the Elder’s group of converts. This group traveled from the land of Nephi, which the Lamanites took over when Mosiah fled to the city of Zarahemla. Before we try to place these events in the real world, let’s again create an internal map:

- They went from the city of Lehi-Nephi, ruled by King Noah, to the Waters of Mormon for Alma’s teaching “in the borders of the land.”²⁷ This distance was likely no more than a single or few days’ journey from Lehi-Nephi, since they could sneak out to hear Alma preach. (Total travel time: 1–3 days.)
- They flee “eight days’ journey into the wilderness” to the land of Helam.²⁸ (Total travel time: 1-3 days + 8 days = 9–11 days.)
- They then leave the land of Helam for an entire day’s journey, and then another twelve days’ travel to get to Zarahemla.²⁹ (Total travel time: 9-11 days + 1 day + 12 days = 22–24 days.)

²⁷ See Mosiah 18:30–35.

²⁸ See Mosiah 23:2-4.

Sorenson estimates that a group of people such as these would probably move about 11 miles per day,³⁰ given that they're moving with women, children, flocks, etc. He emphasizes that pushing Alma's group to 15 miles per day of straight-line travel would be "completely unreasonable."³¹

At 11 miles per day, this is 242–264 miles of travel in 22-24 days, over what is likely quite difficult terrain (remember: it is through wilderness). Sorenson estimates that they can probably travel only about 180 miles as the crow flies between Nephi-Lehi and Zarahemla. Furthermore, navigation is clearly a difficult matter: it takes Ammon and his band of sixteen strong men 40 days³² and they have an extremely arduous journey.³³ A distance, then, of no more than 180 straight-line miles at the outside seems reasonable from the city of Nephi-Lehi to the city of Zarahemla.

So let's look at the LNAM estimation of distances, with an eye toward evaluation point D—that the proposed map must not violate the real-world "facts on the ground." The DVD presentation begins badly, by using assumptions rather than the actual Book of Mormon text:

...how many of you have heard of Zion's Camp march? The Prophet Joseph took these men, some of them were on horseback, some of them were on foot. They covered a 1000 miles in 60 days. And so what we are seeing here [in the Central American theory] is that the Nephites who just came completely from the other side of the earth to this side of the earth stayed in a little geographic location that is less than a third of the distance that Joseph took the brethren in two months.³⁴

The presentation seems to ignore *why* many Book of Mormon geography theorists have made a small map. It is not because they doubt the ability of people to travel long distances—it's because the Book of Mormon text doesn't *allow* them to travel long distances, as we have just seen when considering the movement of Alma the Elder's group.

The presentation also asserts what Meldrum believes it would be proper for ancient peoples to do—yet, the tribes of Israel stayed within a country that was only 150 miles long from Dan to Beersheeba, which is smaller than the Book of Mormon lands proposed by scholars such as Sorenson.³⁵

²⁹ See Mosiah 24:24-25.

³⁰ Sorenson, *Mormon's Map*, 56.

³¹ Sorenson, *The Geography of Book of Mormon Events*, 397. Remember, as well, that there is no indication that this group used pack animals or wheeled conveyances to help speed their journey.

³² See Mosiah 7:4-5.

³³ See Mosiah 7:16.

³⁴ Meldrum, *DNA Evidence*, section 2, "Geography," 9:55-10:25.

³⁵ Sorenson, *Mormon's Map*, 58.

The LNAM has Alma the Elder's group fleeing up the river Sidon (the Mississippi) to Zarahemla.³⁶ As you already know, there is no textual evidence that the river Sidon reaches as far south as the land of Nephi (where the city of Nephi-Lehi is located) and considerable evidence that the headwaters are north of Nephi in the elevated narrow strip of wilderness. It would also increase the length of the group's journey even more, since they would have to move eastward to pick up the river again before following it northwest to Zarahemla.

To test the LNAM hypothesis, let's presume for the sake of argument that it is accurate and see if the resulting conclusions are reasonable. We begin with the DVD's treatment of the Lamanite armies' pursuit of Alma the Elder's refugees:

Eight days isn't much journey is it? I mean, how hard would it be for a king to just send his army out eight days?

Well, it's not just the eight days part. Because actually if you left from this point, they actually would have crossed over the Ozark Mountains and now they would be on the northern side of the Ozark Mountains. So, now they have a mountain range between them and the king. Does that make sense?³⁷

Actually it doesn't make sense. If a group of people consisting of men, women, and children traveling with their possessions, flocks, and herds can traverse the mountains, why can't an army of men do the same thing? This is an implausible explanation and violates what we know about armies and fleeing refugees.

In addition, the LNAM has distances that are much too great for the evidence presented in the text. The LNAM places the Waters of Mormon in present-day Big Spring, Missouri, near Van Buren³⁸ and the Nephite Zarahemla across the Mississippi River from Nauvoo.³⁹

We know that Alma the Elder's group with flocks, herds, women, and children made the trip from the Waters of Mormon to Zarahemla in 21 days. At Sorenson's proposed rate of travel (11 miles per day) they would make 231 miles as the crow flies. The straight-line distance between the proposed LNAM sites is 250 miles. While the difference—19 miles—may not seem much, keep in mind that people don't travel as the crow flies. The modern driving distance between those two sites is 327 miles.⁴⁰ This is a great deal more than Sorenson's maximum estimate of 180 miles in a straight line for people on foot.

³⁶ The presentation states that after crossing the Ozark mountains for eight days, Alma the Elder's group "followed the river up there twelve days, [and] they arrived in Zarahemla." The only LNAM river that leads to Zarahemla is the Mississippi. See Meldrum, *DNA Evidence*, section 16, "Travel Indications," 4:49-5:35.

³⁷ Meldrum, *DNA Evidence*, section 16, "Travel Indications," 4:30-5:05.

³⁸ Meldrum, *DNA Evidence*, section 16, "Travel Indications," 2:45. See, also, <http://www.nps.gov/ozar/planyourvisit/upload/OZARmap.pdf> (last accessed September 1, 2008).

³⁹ Meldrum, *DNA Evidence*, section 5, "Prophecies and Promises," 8:12.

⁴⁰ This distance was computed by Google maps. Similar driving distances can be determined by checking similar online mapping services.

Even driving distances probably underestimate the difficulties of earlier journeys. Modern driving distances are almost certainly more direct than overland travel would be in an unsettled wilderness. Drivers do not need to ford rivers, build bridges, climb hills, or encourage livestock to stay together and keep up. The straight-line distance would require Alma the Elder's group to cross the Ozark Plateau and likely ford or detour around several waterways, including the large Missouri river, which runs west to east across their line of travel—they must either ford it, or cross the even larger Mississippi.⁴¹

CLAIM 6: DISTANCE FROM ZARAHEMLA TO THE LAND NORTHWARD

In approximately 121 BC, king Limhi sent “a small number of men to search for the land of Zarahemla; but they could not find it, and they were lost in the wilderness.” The exploration party, while not finding Zarahemla, did find a land “covered with dry bones” and they found “a record of the people whose bones they had found.”⁴²

Sorenson uses the distance from Nephi-Lehi to Zarahemla (estimated at 180 straight-line miles, as discussed earlier) to estimate the distance from Zarahemla to the land northward. Since Limhi's explorers leave Nephi looking for Zarahemla, but end up in the land northward,⁴³ their journey tells us something about the relative distances.

Sorenson argues that it would be unreasonable for Limhi's explorers, desperately searching for rescue for their enslaved people, to continue far beyond where they thought Zarahemla would be. If it is on the order of 180 miles from the city of Nephi to Zarahemla, it would be strange if the explorers pressed on for hundreds or thousands of miles beyond that. Sorenson suggests that at most they would have gone about twice again as far—say around 200 miles north of Zarahemla. Even if we double this estimate again (likely a huge overestimate), it leaves the land northward only 400 miles north of Zarahemla.

The DVD presentation talks about this excursion and how it fits into the LNAM. We can examine this “fit” according to evaluation point B to determine if the model has sites in the right location relative to each other that are also the right distance from each other. The presentation makes this point about the time that it took Limhi's small group to do their travels:

“they were lost in the wilderness for the space of many days.” I looked it up in the Book of Mormon and did a little research on that. What does “many days” signify? And I found out it can mean anywhere from three days to an entire lifetime.⁴⁴

The DVD provides no source for this claim from the Book of Mormon or from other sources. A study of the Book of Mormon text, however, tells us that another group of

⁴¹ This path over the plateau is the apparent preferred path since it would, as the presentation states, put the mountains between the refugees and the pursuing army. (See Meldrum, *DNA Evidence*, section 16, “Travel Indications,” 4:30-5:05.)

⁴² Mosiah 21:25-27.

⁴³ See Mosiah 8:8-11 and Alma 22:30-31.

⁴⁴ Meldrum, *DNA Evidence*, section 16, “Travel Indications,” 6:10-6:30.

explorers that went in the opposite direction of Limhi's group. Mosiah's son, Ammon, and his team also traveled for "many days" in their journey from Zarahemla to Limhi's people:

...knew not the course they should travel in the wilderness to go up to the land of Lehi-Nephi; therefore they wandered many days in the wilderness, even forty days did they wander. And when they had wandered forty days they came to a hill, which is north of the land of Shilom, and there they pitched their tents. And Ammon...went down into the land of Nephi.⁴⁵

Reaching the land of Nephi cannot be as simple as going down the Mississippi River (river Sidon) since the Nephites at Zarahemla don't know how to get there. If it was as easy a matter as following the river, that knowledge would be unlikely to be lost in only a generation or two. So, the DVD's claim about the scout party's instructions are dubious.

Furthermore, we have some insight into what the Book of Mormon thinks of as "many days" in crossing roughly the same terrain—forty days. When Limhi's group later flees the land of Nephi and escapes to Zarahemla, they too are described as "being many days in the wilderness," and they actually return before Alma the Elder's group.⁴⁶

So, it seems that the Book of Mormon offers more textual support than the presentation's assertion that "many days" could be anything from three days to a lifetime. The LNAM needs to establish some more concrete reasons for claiming that "It could have been six months; it could have been a year."⁴⁷

As you have seen, Sorenson estimates that Limhi's expedition would probably only go about double the distance beyond Zarahemla before realizing they were on the wrong track. This distance is estimated to be about 200 miles; if we are extremely generous and double this distance, we get 400 miles.

The LNAM's geography, which has the river Sidon (Mississippi) runs all the way into the land of Nephi, permits one to presume that Limhi's explorers were told to follow the river Sidon to Zarahemla. The presentation argues that the scouts got lost because "they stayed on the east side of the [Mississippi] river...If they got up to this point [where the modern states of Illinois, Missouri, and Kentucky touch], unfortunately, the Ohio River takes off and goes this direction. Right up to the Great Lakes."⁴⁸

This travel description is a bit of an exaggeration. This can be clearly seen if one examines a map of the area.⁴⁹

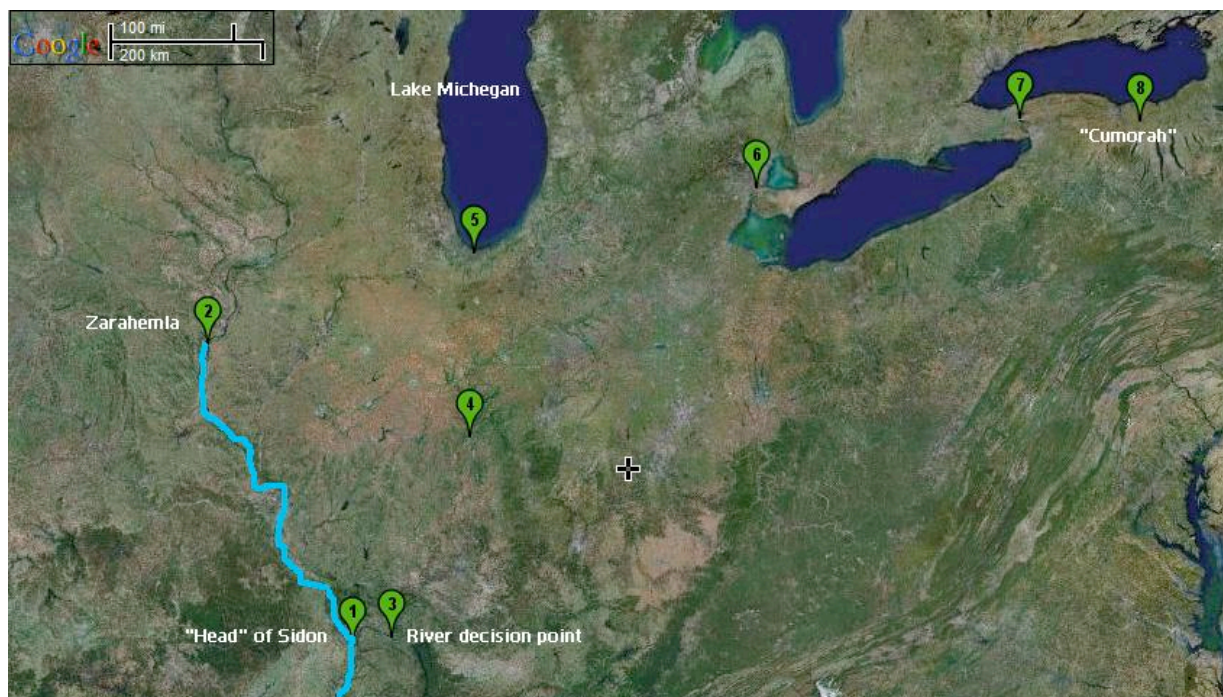
⁴⁵ Mosiah 7:4–6.

⁴⁶ Mosiah 22:13; compare Mosiah 24:25.

⁴⁷ Meldrum, *DNA Evidence*, section 16, "Travel Indications," 6:30-6:45.

⁴⁸ Meldrum, *DNA Evidence*, section 16, "Travel Indications," 7:30-7:45.

⁴⁹ Map created using tools provided by Google Earth via the website www.earthtools.org, May 26, 2008.



The LNAM has Limhi's scouts traveling up the Mississippi/Sidon (outlined in bright blue). At [1] the confluence of the Mississippi and Ohio rivers⁵⁰ (the head of the river Sidon in the LNAM) they choose the Ohio by mistake. Instead of going northwest to [2] Zarahemla, they turn east. The Ohio travels a straight-line distance of about 90 miles east before coming to [3] another confluence, labeled as the "river decision point."⁵¹

The explorers now have to make another choice. They could travel north along the [4] Wabash River.⁵² (This river does not reach Lake Michigan but would get them close to the lakes; the tip of the lake [5] is about 275 straight-line miles from the [3] decision point). They could also continue east along the Ohio River, which also does not directly reach the Great Lakes.

The explorers would encounter yet another confluence with the Miami River (near modern-day Cincinnati). Staying on the east side of the river would therefore require the explorers to make three wrong choices to end up at the Great Lakes. Even then, they wouldn't encounter a Great Lake until they'd traveled half again as far as they would when heading north along the Wabash River.⁵³

⁵⁰ At the modern town of Cairo, Illinois.

⁵¹ At the modern town of Paducah, Kentucky.

⁵² The point [4] is about half way along the Wabash River in the modern city of Terre Haute, Indiana.

⁵³ The straight-line distance from Paducah, Kentucky, to Toledo, Ohio, is 416 miles. Toledo is near the western-most tip of Lake Erie (the LNAM's "sea south").

Remember that the explorers need to get from where they are (at any of the confluences they have incorrectly navigated) to [8] Cumorah.⁵⁴ They can do this by traveling through the Great Lakes region past [6] modern-day Detroit and through [7] the LNAM “narrow neck” or by going south of present-day Lake Erie (the “sea south”).

The problem with either route is the sheer distance involved. For example, the straight-line distance from [3] the decision point to [8] Cumorah is 729 miles; real-world travel distances would be much greater. This distance doesn’t even count the 90 miles back to the confluence of the Mississippi and Ohio rivers and the distance down the Mississippi to the LNAM’s position for the land of Nephi.

Thus, ever since the fateful mistake at the “head” of the river Sidon, Limhi’s explorers have traveled over 800 miles one way, not counting for detours due to geographic features such as rivers, lakes, etc. Then, having reached what they conclude is the remains of a destroyed Zarahemla, they load themselves with metal weapons, armor, and record plates before turning back for home. The entire round trip, easily encompassing more than 1700 miles, seems unrealistic in the light of other, similar Book of Mormon trips.⁵⁵

EXAMINING THE NARROW NECK

Placing the narrow neck of land is a notoriously difficult problem in Book of Mormon geography—not because it is difficult to find a narrow neck, but because it is too easy. Many features might qualify. Given that the narrow neck is perhaps the most recognizable feature on a cursory study of the geography, many researchers seem to have started with it. Such a course is fraught with error, but this is happily not an error made in the DVD presentation.⁵⁶

The narrow neck should be determined in a real-world setting only after other correlations—based on a competent internal map developed from the text—have been established. The LNAM does not even consider the narrow neck to be that important:

The very first time that the “narrow neck of land” was even mentioned wasn’t until 90 years before Christ. For 500 years it was not even mentioned.

⁵⁴ The explorers need to reach Cumorah because in the LNAM Cumorah and the Hill Ramah, where the Jaredites were decimated, is where they find the dry bones and record that eventually becomes the book of Ether. This analysis gives the LNAM the benefit of the doubt as it doesn’t even place Cumorah/Ramah in the land of Desolation, contrary to the text of the Book of Mormon.

⁵⁵ The improbability of such a trip is compounded by the fact that most of it is eastward, towards the rising sun, when those taking the journey supposedly knew that Zarahemla was to the west of the river Sidon, toward the setting sun. How many days would they have to travel toward [8] Cumorah, away from any rivers at all, before they realized the folly of traveling in that direction?

⁵⁶ The LNAM assumes, rather, that the Hill Cumorah and Zarahemla (across the Mississippi River from Nauvoo) are the only fixed geographic points. It further presumes that the hill Cumorah, near Palmyra, must be the same as the Nephite hill of the same name, and that D&C 125 is referring to the Nephite Zarahemla. (See “Section 4: Prophecies” at http://www.fairlds.org/DNA_Evidence_for_Book_of_Mormon_Geography/.)

Which means it was not the primary thing we should be looking for. It's not the main geographical feature of the Book of Mormon.⁵⁷

This statement ignores the fact that up until the book of Mosiah (around 130 B.C.), we have only the small plates of Nephi. These plates say almost nothing about temporal matters, except to mention wars with the Lamanites.⁵⁸ In addition, from roughly 421–130 B.C. the small plates cover less than five modern printed pages. So, the presentation is being unrealistic if it expects there to be much geographical information *at all* in these sections.

Earlier, when introducing analysis points that should be applied to any proposed Book of Mormon geography, it was mentioned that disproving one model does not provide support for any other geographic model—each model needs to stand on its own, particularly in relation to the Book of Mormon text.

If, however, proponents of one geographic model misrepresent another model, this is cause for concern. (See point E in the analysis points.) In this case, the DVD presentation often misrepresents Mesoamerican models of the Book of Mormon, and particularly Sorenson's Mesoamerican model. It appears that the presentation does this either out of ignorance (the Mesoamerican model is not fully understood) or out of a desire to have the audience dismiss the Mesoamerican model and, in the resulting vacuum, adopt the LNAM as the only remaining alternative.

As mentioned at the first of this paper, FAIR does not endorse any particular Book of Mormon geography and even provides online resources addressing all the known geographies.⁵⁹ The misrepresentations of competing geographic models is deeply woven into the DVD presentation, however, and must be addressed—it simply is not good scholarship and does a disservice to viewers of the presentation.

It is perfectly acceptable for any Book of Mormon student to subscribe to whatever geographic theory they desire; it is not acceptable for individuals to misrepresent others' theories and pass that misrepresentation off as "scholarship." It is our hope that through this analysis readers will better understand the competing geographic models and how the Mesoamerican model is misrepresented in the presentation.

LOCATION OF THE NARROW NECK

In the first place, the presentation misrepresents the Sorenson's model relative to the location of the narrow neck of land:

One thing we do know is from the Book of Mormon in Alma, it talks about this narrow neck of land. Well, there is this narrow neck of land. So, anybody see any narrow necks of land in this?⁶⁰

⁵⁷ Meldrum, *DNA Evidence*, section 9, "Chronological Evidence," 2:15-2:40.

⁵⁸ See Jacob 1:2.

⁵⁹ See http://en.fairmormon.org/Book_of_Mormon_geography and click on Book of Mormon Geographical Models.

⁶⁰ Meldrum, *DNA Evidence*, section 2, "Geography," 5:20-5:45.

At this point the audience is viewing an image of the western hemisphere. So, the natural answer, provided by the audience, is “Panama.” Meldrum answers “OK, all right—Panama.” He then displays a visual of page six from Sorenson’s book *An Ancient American Setting for the Book of Mormon*⁶¹ and continues his discussion:

Well, this is page six of really what has become the bible, if you will, of the Central American theory which is called *An Ancient American Setting for the Book of Mormon*. This is page six and again all I am showing here is that this is the beginning, this is how the whole thing started, where its origin came from. Well this is the Panama Canal area, could this be the narrow neck of land?⁶²

At the beginning of the last sentence the presentation switches visuals to show a map of the Isthmus of Panama. There are multiple problems with the presentational slight of hand that has just taken place:

- The map from *An Ancient American Setting* is an internal map, similar to those discussed earlier in this analysis; it is not a hand-drawn map of the Isthmus of Panama as the audience is led to believe.
- Sorenson’s book is not “the bible,” nor is it “the beginning” of “how the whole thing started.” Central American scenarios for the Book of Mormon were discussed as early as the 1830s and really took off after the early 1840s.⁶³ Sorenson’s book wasn’t published until over a hundred years later.
- When Sorenson does apply his internal map to a real-world setting, he identifies the narrow neck of land as the Isthmus of Tehuantepec.

With the problems pointed out, it is easy to see how the presentation misrepresents Sorenson’s Mesoamerican model. The presentation continues to build upon this misrepresentation.

A DAY-AND-A-HALF JOURNEY

In discussing the narrow neck of land, the presentation tries to establish the size of the narrow neck:

In the Book of Mormon it does talk about that it was only a distance of a day-and-a-half journey for a Nephite on the line Bountiful, land [of] Desolation, from the east to the west sea...This narrow neck needed to be crossed by a Nephite. Now it didn’t say this is our fastest guy; this is a Nephite, I am assuming this is a general population who can cross this in a day-and-a-half.

⁶¹ John L. Sorenson, *An Ancient American Setting for the Book of Mormon* (Salt Lake City and Provo, Utah: Deseret Book Company & FARMS, 1985).

⁶² Meldrum, *DNA Evidence*, section 2, “Geography,” 5:49-6:19.

⁶³ See “Section 3: Joseph Smith,” available at http://www.fairlds.org/DNA_Evidence_for_Book_of_Mormon_Geography/.

Well, this [the Isthmus of Panama] is 40 miles across to here. How many of you could walk 40 miles in a day-and-a-half? Probably most all of us could.⁶⁴

Meldrum mentions that he is “assuming” the type of Nephite that is referenced in the text. It is good to note the assumptions being made, but is this really assumption realistic?⁶⁵ Are there no other options? A consideration of what others have published would be useful. Sorenson comments on the text in this manner:

Possibly “the distance of a day and a half’s journey” was a standard length. The Nephites may have understood that a “day and a half’s journey” meant so many miles. In parallel fashion the Spanish *legua* (league) meant the distance a loaded mule could travel on the average in an estimated hour; the term said nothing about any particular mule or route or number of hours of consecutive travel. Or the phrase “a Nephite” might imply that a special messenger was the one doing the traveling, for the statement occurs in the context of military defense.⁶⁶

To others it is not at all obvious that the phrase means “average Nephite,” and rather than make a single assumption Sorenson mentions different possible meanings for the text.

DEALING WITH NARROW-NECK DISTANCES

As already pointed out, the presentation to this point has misrepresented Sorenson’s Mesoamerican model by talking about the Isthmus of Panama. Suddenly the presentation switches gears and begins talking about Sorenson’s use of the Isthmus of Tehuantepec for the narrow neck:

But we don’t really need to worry about that because this is actually not where the Book of Mormon is supposed to have happened anyway. This is the proposed Mesoamerican setting for the Book of Mormon.... in this, there are two potential places where there would be a narrow neck of land....

Is it possible to cross this [the Isthmus of Tehuantepec] in a day-and-a-half, 150 miles?⁶⁷ Well, I did a bunch of research. I actually did research on travel times of all kinds of different groups, from military groups that went out, single individuals, the pioneers are a really good example. They averaged about 12 to 15 miles per day with wagons and so forth. Now people on foot can actually cover more distance than that typically.⁶⁸

The LDS pioneers are not a good example to use. Groups travel more slowly than single people (as Meldrum states), so why even bring them up as part of the research? It is only

⁶⁴ Meldrum, *DNA Evidence*, section 2, “Geography,” 6:20-7:00.

⁶⁵ It is of little value to ask the audience whether they could cover 40 miles in a day and a half. They are not Nephites, and their ability to traverse that distance would depend on many factors.

⁶⁶ Sorenson, *An Ancient American Setting*, 16.

⁶⁷ The narrowest point of the isthmus is, in fact, only 125 miles. See http://en.wikipedia.org/wiki/Isthmus_of_Tehuantepec (last accessed June 6, 2008).

⁶⁸ Meldrum, *DNA Evidence*, section 2, “Geography,” 7:35-8:49.

valuable in the presentation because a day and a half at fifteen miles per day is 22.5 miles, which matches the LNAM's choice for the narrow neck:



Having raised the irrelevant example of LDS pioneers using ox-drawn wagons, the presentation has planted the seed so it can later (in an "aha!" moment) claim that "this [the LNAM's narrow neck] is 21 miles. Now, that I think is a doable distance for an average person. In fact, it works out almost perfectly with what the Pioneers did at 12 to 15 miles per day; a day-and-a-half would put you about 21 miles, and it is fairly flat terrain there."⁶⁹ But, the correspondence is only a coincidence. As even the presentation states, 12–15 miles per day underestimates the distance that a lone traveler can move:

Now, the world's record holder is a Greek individual and he ran 180 miles in 24 hours. They call them ultra runners. They spend their whole life doing that. But he was also on a track with thinner shoes on, with running shoes on I should say.

So is it possible? Hmm...not really. Now, this is even worse over here, 185 miles. So it appears that we have a little bit of a situation.⁷⁰

Therefore, the mention of the pioneers and their speed is irrelevant and underestimate the potential distance considerably.

Remember that it is Sorenson's Mesoamerican model that is being criticized at this point; the presentation questions the ability of a Nephite to travel 150 miles across the Isthmus of Tehuantepec in a day and a half. Once again, if we examine the model being criticized, we find that Sorenson has already considered this problem:

⁶⁹ Meldrum, *DNA Evidence*, section 2, "Geography," 12:30-12:55.

⁷⁰ Meldrum, *DNA Evidence*, section 2, "Geography," 8:50-9:15.

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- A Mohave Amerindian from California traveled 100 miles, rested briefly, and then returned (making 8.3 miles per hour).
 - In 1788 Foster Powell traveled 100 miles in 22 hours (4.5 miles/hour).
 - In 1806 Captain Barclay went 100 miles in 19 hours (5.3 miles/hour).
 - In 1813, a 55-year-old man won a bet traveling 160 miles in a 24-hour period (at least 6.6 miles/hour).⁷¹

So, in days past we do not have to resort to world-record holders to get impressive distances. The presentation confuses its twenty-first century audience when asking how many of *them* could go at these rates. Probably none of them could, but that is irrelevant.

After considering a variety of factors, Sorenson writes that a “plausible compromise range seems to me to be 75 to 125 miles.”⁷² Then, Sorenson notes that “[t]he 120-mile-wide Isthmus of Tehuantepec is just within the range of plausibility we established for the width of the ‘narrow neck.’”⁷³ You should now be able to see that the presentation’s claim about “150 miles” and how far LDS pioneers or the audience could travel is nothing but a red herring. It is OK to disagree with a different model; it is quite a different thing to misrepresent that model as a way to make your own model look more acceptable.

IGNORING OTHER INTERPRETATIONS

Some Mesoamerican theorists have also argued (based on Alma 50:34, for example) that the narrow-neck distance traveled does not have to be from sea to sea. As researcher Dr. Lawrence Poulsen noted:

In my opinion, [the narrow neck] starts in the isthmus by the west sea, goes east along a path that goes along the north end of the Grijalva [river] depression east of Hermounts, to the point just east of the border between Veracruz and Chiapas, northwest of Chiapa de Corzo. This is the border between Desolation and Bountiful, as I see it, and is a line that effectively blocks movement from the Land of [the Nephites] to the Land Northward.⁷⁴

Poulsen’s geography is illustrated in the map below:⁷⁵

⁷¹ Sorenson, *The Geography of Book of Mormon Events*, 393-394.

⁷² Sorenson, *An Ancient American Setting*, 16.

⁷³ *Ibid.*, 36.

⁷⁴ Lawrence L. Poulsen, personal communication, punctuation modified slightly for clarity.

⁷⁵ Map by Lawrence L. Poulsen, used with permission. Based on an original map at http://commons.wikimedia.org/wiki/Image:Isthmus_of_Tehuantepec.jpg.



Is this desperate reaching by Mesoamerican advocates to save their theory? It would not appear so, as the exact same reasoning is used later in the DVD presentation:

Now I hearken back to the original thing about the day and a half journey. Because when you read that more closely, it didn't say from the sea east to the sea west for the day and half journey to happen. It says, "And that was only the distance for a day and a half's journey for a Nephite, on the line Bountiful and the land Desolation, *from the east to the west sea.*" *In other words, from some point out here in the east, over to the edge of the west sea.*

Now why is that? How did they come up with that? Well, because there's another scripture that says it was a day's journey on the line of their fortifications from the west sea even to the east. So now it matches up.⁷⁶

Thus, the presentation uses reasoning which reduces the distance that the "narrow neck" in Sorenson's model must cover. Yet, it ignores this potential interpretation when directly discussing the model, perhaps because it wouldn't suit the presentation's goal of making Sorenson's distances look impossible and the LNAM's distances more inviting. Sorenson's sea to sea distances aren't impossible, but if the whole isthmus does not have to be included in the "day and a half journey" (as in Poulsen's reasoning) then the model fits even more easily.

Consider, then, the sum of the contradictions, misdirection, and misrepresentation from the DVD presentation:

- It talks about the difficulty of crossing the Isthmus of Panama, only to later acknowledge that this isthmus has nothing to do with Sorenson's model.

⁷⁶ Meldrum, *DNA Evidence*, section 15, "Book of Mormon Lands," 5:20-6:00, emphasis added.

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- It uses LDS pioneers as models for how far one can travel in a day when single-person travel is more appropriate to the evaluation.
 - It assumes that “for a Nephite” means “an average Nephite,” and does not address that it may be technical term with a specific meaning.
 - It talks about how difficult it would be for a modern audience to cross the distances described when there’s ample precedent for such journeys in bygone days.
 - It talks about how 150 miles is too far to walk through Mesoamerica when Sorenson doesn’t use that inaccurate figure for his model.
 - It fails to mention how the isthmus distance need not be from sea to sea, though this concept is used for different purposes later in the presentation.

All of this has the effect of making the Mesoamerican model seem impossible and, by implication, the LNAM more acceptable. Yet, these claims are either of no relevance whatever, or they are false. FAIR does not endorse any geography, but believes that all models should be evaluated according to their actual arguments and merits, not misrepresentations or irrelevancies.

CONCLUSION

Much else could be said about the LNAM as presented in *DNA Evidence for Book of Mormon Geography*, but it has already failed the five evaluative points, A through E, many times over. On matters of river flow, land orientation, geographic relationships, travel distances, and topography it has been demonstrated as lacking. In short, the LNAM is simply not viable.

Further, the description of a theory with which the presentation disagrees is inadequate and misleading. Readers will have to return to the Book of Mormon text itself if they wish to develop a more reliable geographic model, or use the tools presented in this paper to judge among the many existing models.