

## SECTION 7: BUFFALO EVIDENCE (EXECUTIVE SUMMARY)

**Editor's Note:** This is a summary of the full paper, available online at [http://www.fairlds.org/DNA\\_Evidence\\_for\\_Book\\_of\\_Mormon\\_Geography/](http://www.fairlds.org/DNA_Evidence_for_Book_of_Mormon_Geography/). This paper was last updated 18 January 2009.

This document is a partial analysis of the scholarly merits of the evidence and research used by Rodney Meldrum<sup>1</sup> in his firesides and DVD presentation, *DNA Evidence for Book of Mormon Geography*.<sup>2</sup> Neither FAIR nor this document take any position on the geographic location of Book of Mormon events.<sup>3</sup> 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.<sup>4</sup> This document is just one in a series of such analytical documents.

In this document we examine Meldrum's research and conclusions presented in Part 8 of the DVD, titled "Buffalo Evidence: Migratory Beasts in the Book of Mormon." Near the beginning of the presentation viewers see a map showing the extent of buffalo ranges, from Dale Lott's *American Bison: A Natural History*.<sup>5</sup> The map shows that buffalo populations were quite a bit higher west of the Mississippi than they were east of it. The explanation provided for this is that buffalo have difficulty swimming across water when they can't see the other side, and this is why they didn't cross the Mississippi.<sup>6</sup>

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<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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](http://en.fairmormon.org/Book_of_Mormon_geography) (click on Book of Mormon Geographical Models).

<sup>4</sup> 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.

<sup>5</sup> Dale F. Lott, *American Bison: A Natural History, Organisms and Environments* (Berkeley: University of California Press, 2002).

<sup>6</sup> Meldrum, *DNA Evidence*, section 8, "Buffalo Evidence," 1:10-2:30.

## THE RIVER BARRIER?

Was the Mississippi River really a barrier to buffalo? Dr. Valerius Geist, a biologist at the University of Calgary and first head of that institution's Environmental Science program, noted that the limits on the bison had little to do with the river, and much to do with human hunters: "...about 10,000 years ago, human hunters confined bison to the Great Plains, keeping them away from the richer forage of the western foothills and the eastern river systems...it was fear [of hunters] that kept bison in the safety of open spaces" on the plains.<sup>7</sup>

In short, the Great Plains was a relatively inhospitable environment for humans, and so Great Plains hunters were more rare. Bison that crossed into the better territory had to compete with more humans in the more fertile land of the east. The river is merely a rough dividing line between the fertile and less-fertile territory.

## DATES MATTER

The DVD presentation ignores or fails to understand the significance of the title of Lott's map: "Plains bison distribution, about 1500."<sup>8</sup> The presentation assumes that the map's numbers would be valid for the Nephite/Lamanite period, up to two thousand years earlier. This assumption leads to difficulty.

By the late 1400s, Europeans had made contact with North America and "these early contacts had brought Eurasian diseases—such as tuberculosis, typhoid, diphtheria, smallpox, whooping cough, influenza, yellow and scarlet fever, and measles—to the native people. These diseases began decimating native people in North America well before various explorers in the sixteenth century [i.e., the 1500s] made incursions inland."<sup>9</sup>

According to the best evidence, over 95% of all Amerindians died—mostly from disease—within one to two centuries of Columbus' arrival. In "the Mississippi Valley...conquistadores contributed nothing directly to the societies' destruction; Eurasian germs, spreading in advance, did everything."<sup>10</sup>

If human hunters were what kept bison from spreading east of the Mississippi, what would happen if human numbers were severely reduced? The bison would spread. This is, says Geist, exactly what happened. "The range extension of bison east of the Mississippi coincides with the first recorded major smallpox epidemics in the eastern and southern states, as well as with the extinction of native tribes." Buffalo numbers surged everywhere—in the east and on the Great Plains.<sup>11</sup>

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<sup>7</sup> Valerius Geist, *Buffalo Nation: History and Legend of the North American Bison* (Stillwater, Minnesota: Voyageur Press, 1996), 39–40.

<sup>8</sup> Lott, *American Bison*, 70.

<sup>9</sup> Geist, *Buffalo Nation*, 60.

<sup>10</sup> Jared M. Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: W.W. Norton, 1997), 211.

<sup>11</sup> Geist, *Buffalo Nation*, 61–62.

Using a map from the 1500s—exactly when bison were undergoing an unprecedented population explosion following the decimation of native hunters—does nothing to rehabilitate, and a great deal to discredit, the LNAM.

## ARE THERE BUFFALOS IN THE BOOK OF MORMON?

The DVD explains how buffalo solve a presumed problem in the Book of Mormon text:

I always wondered, how did the Lamanites live so comfortably, it says they were a lazy and idolatrous people? How did they live so comfortably off the land when the Nephites had to sit there and work all of the time? And work the land and so forth to provide their food?

Well, now the answer is really simple. They were doing the same thing as the Indians were doing when the settlers arrived on the Plains. They were following the buffalo herds.<sup>12</sup>

This reasoning is severely flawed. It uses the Amerindian lifestyle encountered by settlers on the plains as a good model for lazy Lamanites of two thousand years earlier. This also ignores Book of Mormon indications that Lamanite society was at least as advanced as the Nephite society.

Before the coming of Europeans, plains Amerindians probably had no horses.<sup>13</sup> This required them to hunt buffalo on foot, using spears and (later) bows and arrows; or by driving the animals through pounds and off cliffs.<sup>14</sup> During this period, Amerindian numbers were much higher before approximately 95% died from European disease. And, bison numbers were much lower because human hunters kept them in check.

The nomadic Amerindian tribes lazily living off the abundant bison envisioned by the DVD's reconstruction of history is a myth. It is difficult for a nomadic, hunter-gatherer lifestyle to establish a consistent food surplus—because the society is mobile, they must carry everything with them and have no annual harvest of excess grain to store for the lean times. Hunter-gatherers cannot live as closely together as farmers can—they require much more land to support their population.

When conflict comes, agriculture-based societies almost always overwhelm hunter-gatherers because of higher population densities, greater specialization of labor (allowing for professional militaries and the bureaucracy needed to supply them), better nutrition, and higher birth rates (usually double that of hunter-gatherers).<sup>15</sup>

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<sup>12</sup> Meldrum, *DNA Evidence*, section 16, “Travel Indications,” 9:45-10:20.

<sup>13</sup> It should be noted that the best available archaeological evidence indicates that modern horses were introduced into the Americas by Europeans. The Book of Mormon refers to pre-Columbian horses, but the use to which those horses were put by Book of Mormon peoples is open to debate. This is an area open to further analysis and study.

<sup>14</sup> These “buffalo jumps” (as they are known today) are rich in archaeological information. A quick search for the term provides a wealth of information on how plains Amerindians trapped and killed these massive beasts.

<sup>15</sup> For an excellent discussion, see Diamond, *Guns, Germs, and Steel*, 85-92.

All of these facts make it extremely unlikely that most Lamanites were hunter-gatherers. The Lamanites were capable of fielding large armies far from their homeland that dwarfed the Nephites' forces and kept them in the field sometimes for years. They were clearly under strong central leadership (the kings), while hunter-gatherers are much more loosely allied. Hunter-gatherers might raid farms for food or plunder, but would be unlikely to threaten them with destruction, as the Lamanites did the Nephites.

## LAZY LAMANITES?

It is important to realize that although the Nephite authors consistently describe the Lamanites in negative terms like “lazy,” when we actually get a glimpse of Lamanite society away from the borderlands (as with the missionary journeys of the sons of Mosiah and Zeniff's expedition back to Nephi), Lamanite society seems to be as complex and sophisticated as that of the Nephites. Lamanites farmed, fielded armies, had kings, used writing, engaged in trade, etc.—all traits of a settled, agriculture-based society.

There are numerous references in the Book of Mormon to Lamanite cities, such as in the recounting of the story of the Anti-Nephi-Lehies, which discusses the many cities of the Lamanites (see Alma 23:9-15). A few Lamanites might have been nomadic, but they were not the chief threat to the Nephites. Likewise, Lamanites dependant on agriculture might have hunted to supplement their diet.

The irritation of raiding parties along the borders would have further reinforced the Nephite view of their enemies as those who were less “civilized” and who resorted to plunder—but this, and all of the other accoutrements of civilization that have been noted, would have made it hard to have time for running after galloping herds of migrating buffalo as the LNAM proposes.

## BONES, BONES, BONES

In another proposed contribution to Book of Mormon studies, the DVD points out that we no longer see the bones from the millions of buffalo “slaughtered on the plains... See, if they're not buried and they're just left on the plains...they just disintegrate. And they're gone. No record.”<sup>16</sup>

While animal bone *can* be broken down over time, the DVD is wrong. The slaughter of the bison produced raw materials that were not wasted. “Following in the footsteps of the buffalo hunters,” wrote Geist, “came the bonepickers.” These individuals formed enterprises that collected the bones and ground them up for use “in refining sugar and for fertilizer.”<sup>17</sup> The bones aren't on the plains for the simple reason that they were *worth money*—they were gathered up, packed into boxcars, and shipped to the east for use in industrial processes and agriculture on a vast scale.

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<sup>16</sup> Meldrum, *DNA Evidence*, section 8, “Buffalo Evidence,” 6:05-6:30.

<sup>17</sup> Geist, *Buffalo Nation*, 110.

Further, buffalo bones—such as those found in the bottoms of buffalo jumps—are routinely excavated by archaeologists. One such buffalo jump (Head-Smashed-In Buffalo Jump, near Alberta, Canada) displays the characteristic bone layers at the base of the cliff kill site going back 5,700 years.<sup>18</sup> Not only can buffalo bone survive, but routinely does so from ages which pre-date the Nephite civilization.

## MIGRATING ANIMALS

The DVD gives us a glimpse into a flawed research methodology in the bison section, and it shows how one can use facts to get erroneous results. The presentation discusses Alma 22:31 and Ether 9:34 as evidence of migrating animals (such as buffalo) being followed and eaten by the people.<sup>19</sup> These conclusions are wrong, however. Let's look at the Ether scripture in context.

And it came to pass that there began to be a great dearth upon the land, and the inhabitants began to be destroyed exceedingly fast because of the dearth, for there was no rain upon the face of the earth. And there came forth poisonous serpents also upon the face of the land, and did poison many people. And it came to pass that their flocks began to flee before the poisonous serpents, towards the land southward, which was called by the Nephites Zarahemla. (Ether 9:30–31)

This is obviously not a regular, seasonal migration. The animals' environment has been suddenly altered. There is "a great dearth upon the land"—a drought. The flocks moved southward in an attempt to find water so they wouldn't perish. Such behavior is unusual, and so it is not surprising that the Book of Mormon text mentions it (e.g., Alma 22:31) since the animals were found outside of their normal habitat.

An additional problem with the DVD's analysis is that the animals the Book of Mormon describes as "fleeing" are "flocks"—some type of domestic animal kept by humans. Their behavior, then, might be different than that of wild animals, though both would flee drought and snakes.

## CONCLUSION

The DVD got almost nothing right in its research on the bison or animals fleeing the land northward:

- It is wrong about the reason for lower bison numbers east of the Mississippi
- It uses a map of the bison range in 1500 A.D. as representative of Book of Mormon times, when the later time was likely unique in all of history.

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<sup>18</sup> "Archaeological Facts: The Kill Site," from Head-Smashed-In Buffalo Jump, near Fort Macleod, Alberta, <http://www.head-smashed-in.com/archaeol2.html> (last accessed 28 December 2008).

<sup>19</sup> Meldrum, *DNA Evidence*, section 8, "Buffalo Evidence," 2:31-3:30.

- It doubles the number of bison. Although the DVD claims that this data came from Dr. Geist's book, Geist contradicts it twice, once on the facing page of the map reproduced in the DVD.
- It misrepresents the history of Amerindian nomadism and mistakes Amerindian behaviour, as described by white settlers, for a good model of the Lamanite lifestyle of two millennia earlier.
- It is confused about how great a threat which a nomadic hunter-gatherer Lamanites would pose to agricultural societies like the Nephites.
- It takes a superficial view of the Book of Mormon text, leading it to search for a "solution" to a problem ("lazy Lamanites") that is not real. Previous research and the Book of Mormon itself both address this issue.
- It shows no understanding of the likelihood of the unaided disappearance of the bones from millions of bison and tells us nothing of the actual history behind the bones' disappearance.
- It demonstrates an inability to deal with plain Book of Mormon passages that conflict with its theories about migration.
- It does not frame research questions accurately so that expert help will be useful.

Some of these points have been discussed in this summary; all of them are discussed in the full review paper. Despite all these problems, Meldrum claims that this part of the presentation was inspired by God, since he "was being directly guided in this particular portion."<sup>20</sup> He calls the bison a "witness" to the Book of Mormon's truth. If so, it is a witness that has eluded everyone else, prophet or scholar.

Again, this paper is a summary of information presented in the full paper, *Section 7: Buffalo Evidence*. If you are interested in a longer exposition on the matters covered here, please see the full paper. The full paper also provides additional points at which the theories in *DNA Evidence for Book of Mormon Geography* should be rejected.

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<sup>20</sup> Meldrum, *DNA Evidence*, section 8, "Buffalo Evidence," 0:01-0:25.