

Searching for Book of Mormon Ruins

What should we expect to find?

Lynn and David Rosenvall, September 2010

Have you seen an ancient Nephite building? What did it look like? Did it match a description in the Book of Mormon, or did it match an artist's depiction of what a Nephite structure is expected to look like? Or were you told it was a Nephite building because it was in a location where one hopes to find the remains of Nephite structures?

To confirm our research on Book of Mormon geography, there are some who appeal for us to find ruins of buildings in our proposed lands that match the mental images of what an ancient Nephite building or city is expected to look like. Thus some have discounted Baja California as the location of Book of Mormon lands simply because that land has not yielded any grand and elaborate ruins of stone buildings they assert would be necessary to represent structures built by Book of Mormon people. We have scoured the scriptures trying to validate any of the claims that the people in the Book of Mormon record built large stone structures. We have found from the text of the Book of Mormon that the people, not unlike the children of Israel in the Biblical record, built with wood, metals and sometimes cement materials. The ruins found in locations such as Meso-America remind us of structures built by the ancient Egyptians with hundreds, if not thousands of workers. We have found that the Book of Mormon is a record of people who built humble homes, cities, synagogues and temples. It is feudal or slave-based civilizations who traditionally build elaborate structures for governing and worship, such as the pyramids of Egypt, the seven wonders of the world, or the tower of Babel which was built to “reach unto heaven” so the builders could “make [them] a name” and a fame (Gen. 11:3–4). Why did the Book of Mormon record keepers not mention any stupendous building feats that were representative of their culture and their construction abilities? It would appear that their most formidable civil project was the building of a “breastwork of timbers” and “ridges of earth” around several cities for the defense and safety of their people (Alma 50:1–5; 53:4–

5). We need not look, therefore, to areas of ostentatious and extensive ruins in the Western Hemisphere to find the heartlands of the Book of Mormon peoples, that is, the actual locations where the record keepers lived and wrote the geographical descriptions of their land. The prophesied “desolation” of their lands and the erosion of time could have obliterated all the structures and artifacts they abruptly left behind. With our backgrounds as a geographer and engineer, we have found that descriptions of the geographical settings of the Book of Mormon lands, such as climate, plants and animals, and the relative location and scale of their lands have proved to be the most fruitful clues to their location.

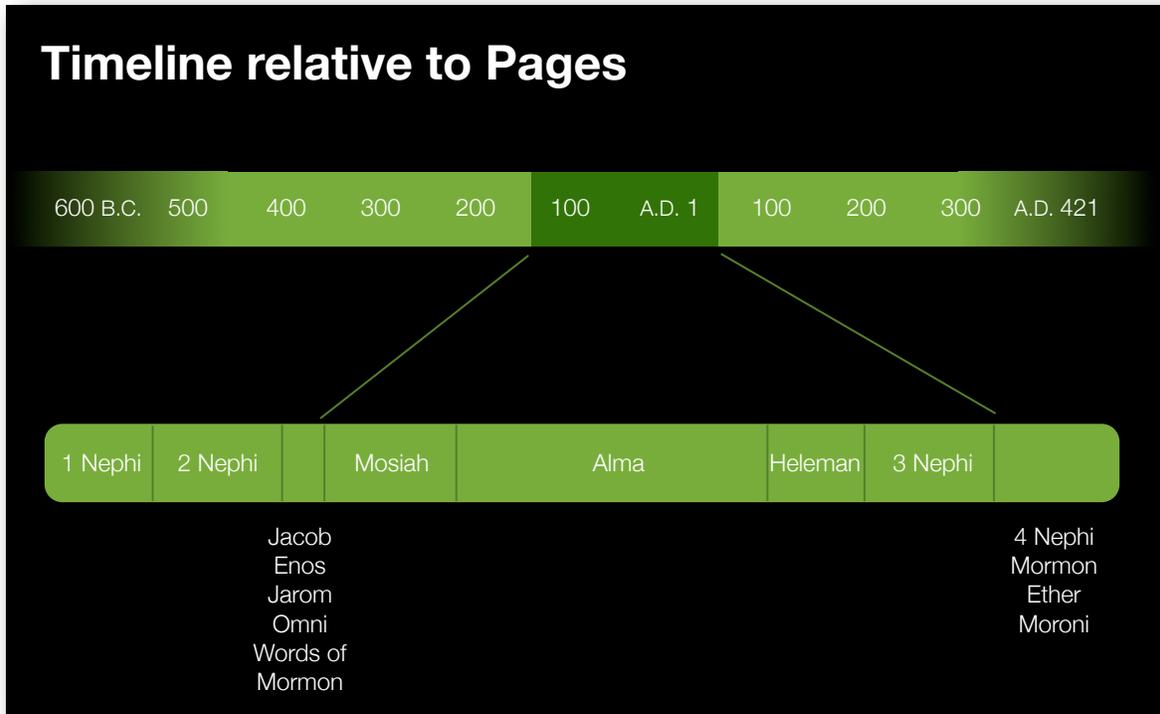


Above: Pyramid in Egypt. Below: Pyramid in Meso-America.

Analysis of Book of Mormon structures

The Book of Mormon is the primary source of our work. We believe that it is a “most correct book” and should stand on its own merits without additional interpolations and extraneous interjections or forming assumptions beyond the scriptural account. The following is our analysis of structures Lehi’s descendants actually built, as described by the record keepers, and our response to assumptions commonly put forth about these Book of Mormon buildings. Unfortunately, the often-turbulent Nephite history (600 B.C. to A.D. 421), even though mostly chronological in the Book of Mormon account, is not uniformly represented. For example, the pages in the books of Mosiah, Alma, Helaman, and Third Nephi represent some 200 years, or approximately one-fifth of the Nephite history. Yet this short time occupies nearly two-thirds, or 319 of the total of 531 pages in the Book of Mormon. As a result, fewer details of structures are recorded from the first 400 years when the Nephites were settled in the land of Nephi and the last 400 years when they were primarily located in the northern lands of Bountiful and Desolation and farther north. The loss of the 116 pages of Mormon’s abridgment of the Book of Lehi (see the heading to Doctrine and Covenants 10), which spanned the first 400 years of the Nephite history in the land of Nephi, presumably denies us more details than provided by the less-secular small plates of Nephi covering the same time (First Nephi to Omni). Likewise the Book of

Fourth Nephi records nearly 300 years of the history in only four pages and, understandably, with almost no descriptions of structures.



The timeline of the Book of Mormon in relationship to the number of pages in each of the books.

In this analysis we outline the types of structures, their scale and size, their construction materials, the times of construction and their locations within the Book of Mormon lands. We include temples, synagogues, houses, towers and every other type of structure. All of this is intended to help answer a simple but essential question: If you saw a Nephite building, what should you expect to find?

Temples

As with all covenant people, temples were important structures of the righteous Nephites and Lamanites for performing gospel ordinances and serving as enclosed places for teaching the people (Mosiah 2:7; Alma 26:29). The Book of Mormon account describes temples located in the land of Nephi, the land of Zarahemla, the land of Bountiful and in the lands northward.

Nephi's temple in the land of Nephi

2 Nephi 5:15–16 (constructed between 588 to 569 B.C.)

The first mention of a Nephite temple is recorded by Nephi, son of Lehi, when many of his extended family were forced to leave the land of first inheritance and travel north “for the space of many days” to a new land they called the land of Nephi. Here they constructed the first temple. This journey to the land of Nephi occurred between 588 and 559 B.C., only a few years after their arrival in the promised land and shortly after the death of father Lehi (2 Ne. 5:1–17). The scriptural record indicates the materials used in the temple’s construction and the role of Nephi in teaching the people how to work with these materials:

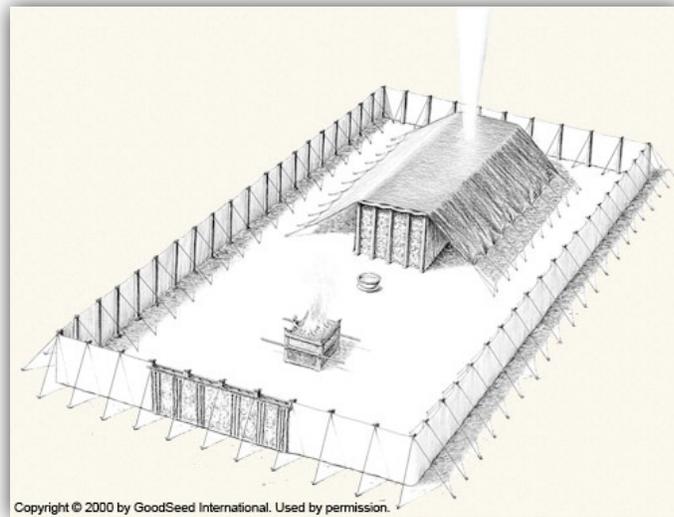
And I did teach my people to build buildings, and to work in all manner of wood, and of iron, and of copper, and of brass, and of steel, and of gold, and of silver, and of precious ores, which were in great abundance.

And I, Nephi, did build a temple; and I did construct it after the manner of the temple of Solomon save it were not built of so many precious things; for they were not to be found upon the land, wherefore, it could not be built like unto Solomon’s temple. But the manner of the construction was like unto the temple of Solomon; and the workmanship thereof was exceedingly fine. (2 Ne. 5:15–16)

This first temple was built by Nephi, “after the manner of the temple of Solomon save it were not built of so many precious things” (2 Ne. 5:16). It is not clear what is meant by “manner” of construction. Was it the same size or shape of Solomon’s temple or was it built of the same materials or was the “manner” only the intended purpose and function of the temple? Nephi’s small group of settlers—probably no more than 30—required shelters for homes and other essential amenities and most likely had minimal material and labor resources to build other than a small temple structure.

How did Nephi obtain directions for building a temple? Nephi was rather young (unmarried) when his family left the land of Jerusalem, but he could have recalled the general shape and the outer building details of Solomon’s temple, prominently located in the city of Jerusalem. We suggest, however, that Nephi learned how to build this first temple directly from the Lord, the same as the Prophet Joseph Smith received instructions on the building of the Kirtland temple—its rectangular layout and interior functions, and the manner of construction in keeping with their building skills and available resources (D&C 94:1–9; 105:33; 109:2–4). The pattern and purpose of Moses’ tabernacle, a portable temple, were

revealed by the Lord (Ex. 31:3–6). The Lord had already given Nephi direction on building a ship (1 Ne. 17:8–11). The brass plates brought by Lehi’s family from Jerusalem were “a record of the Jews from the beginning, even down to the commencement of the reign of Zedekiah, king of Judah,” and could have contained the same rather extensive construction details for both Solomon’s temple and Moses’ tabernacle outlined in our current Bible record (1 Ne. 5:10–22; see temple accounts in 1 Kgs. 5–8; 1 Chr. 22, 28; 2 Chr. 3–5, 9; and the numerous references in *Bible Dictionary*, “Tabernacle”). Nephi’s temple could have matched the shape and purpose of the temple of Solomon, but not necessarily



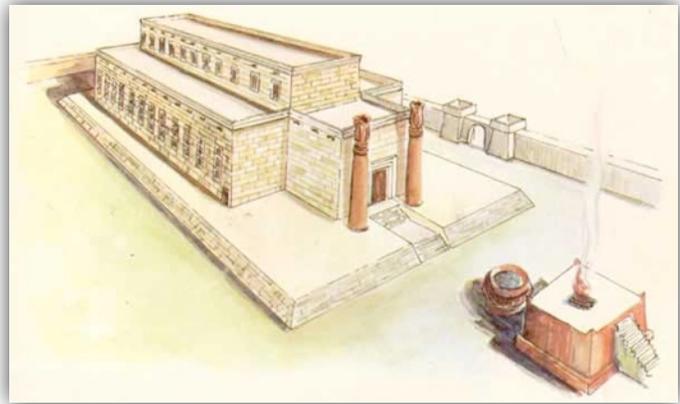
Artist's rendering of the tabernacle of Moses as described in the Old Testament (and most likely on the Brass Plates).

its size given the small number of potential workers. For example, Solomon’s temple was patterned after the model of Moses’ tabernacle, but with each of the building’s dimensions being doubled in length.

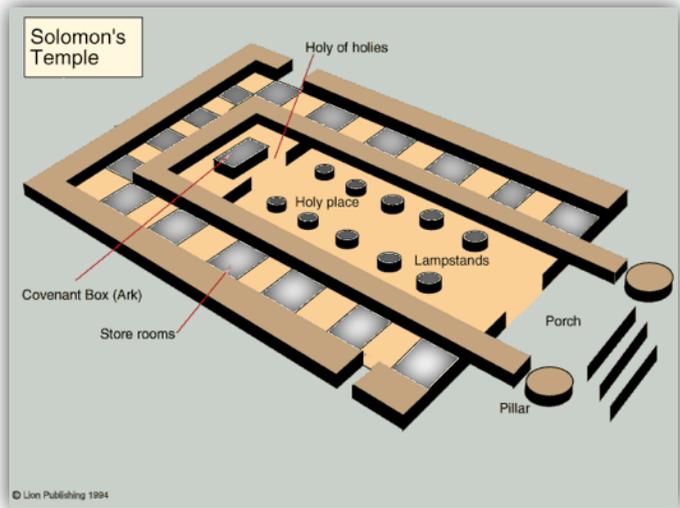
Solomon’s temple, according to the scriptural record, was not large, but rectangular and not pyramid-shaped like many ancient structures in Meso-America that some claim to be Nephite temples. There is no evidence that Nephi ever saw the pyramids of Egypt, nor any evidence in scripture that the

Lord ever directed his people to build a temple in the form of a pyramid. The interior dimensions of Solomon’s temple were 60 cubits long (about 90 feet), 20 cubits wide (about 30 feet), 30 cubits high (about 45 feet), however, some calculate that the height was only 15 cubits or about 22 feet (see *Bible Dictionary*, “Temple of Solomon”). It had a front porch 10 cubits deep (15 feet) with two carved, olive wood doors flanked by two imposing pillars of brass standing 23 cubits high (about 34 feet). Solomon’s temple was built primarily of wood (cedar, cypress, juniper, olive and pine) and metal (gold and bronze) and precious gemstones. Parts of the outer walls were made of hewn or quarried stones prepared by masons hired from other lands. Nearly all the building materials were transported some distance and prepared by thousands of hired laborers, nearly all from outlying areas and not from the local culture. The descendants of father Jacob (Israel) were primarily farmers and herdsman and not skilled builders, thus the need for imported laborers and materials for the building of their larger and more ornate structures. It is

difficult to know how all these costly and elaborate construction features played out with a small Nephite group attempting to build a temple after the “manner” of Solomon’s, without access to imported materials and foreign workers, coupled with not finding some “precious” building items on their new lands.



We note that stone construction is not mentioned by Nephi, even though he taught his “people to build buildings, and to work in all manner of wood, and of iron, and of copper, and of brass, and of steel, and of gold, and of silver, and of precious ores, which were in great abundance” (2 Ne. 5:15). One would expect that if stone construction were used, this labor-intensive material would have been listed along with the other building materials. But as with temples today, the most important “manner” of construction might not have been the size, shape nor the materials, but the intent of building a well-crafted and attractive temple, though small, as a place for the performance of sacred ordinances, including, for the Nephites, the ordinances and practices of the law of Moses.



Artist's depiction of Solomon's temple, based on the Biblical description. Note the rectangular shape.

King Noah's temple renovation

Mosiah 11:10–12 (renovated between 160 and 150 B.C.)

When king Noah, the unrighteous Nephite king, began his rule in the land of Nephi (between 160 and 150 B.C.), he had many of the buildings rebuilt, including Nephi's original temple in the city of Nephi. The land and city of Nephi had been abandoned by the Nephites when “as many as would hearken unto the voice of the Lord” journeyed north to the land of Zarahemla under king Mosiah (the first) in about 200 B.C., after the “more

wicked part of the Nephites were destroyed” (Omni 1:5–19). The Book of Mormon record states that king Noah’s “workmen [worked] all manner of fine work within the walls of the temple, of fine wood, and of copper, and of brass,” and the seats “he did ornament with pure gold; and he caused a breastwork to be built before them, that they might rest their bodies and their arms upon while they should speak lying and vain words to his people” (Mosiah 11:10–11).

Not unlike the palace and other buildings that king Noah previously built of wood, along with “precious things, of gold, and of silver, and of iron, and of brass, and of ziff, and of copper,” it is not unexpected that the temple renovations were also built of wood and these same listed materials (Mosiah 11:8–9). Stone construction is not mentioned for the temple renovations or for the construction of king Noah’s palace and his other buildings. If Nephi’s original temple were built of stone, one would expect a restoration after 400 years would have required some stone repairs. Clearly “fine wood,” and “copper” and “brass” were the principal building materials in the restoration of this first Nephite temple, with an emphasis on “fine wood” construction.

Lamanite temples in the land of Nephi

Alma 23:2; 26:29 (constructed before 77 B.C.)

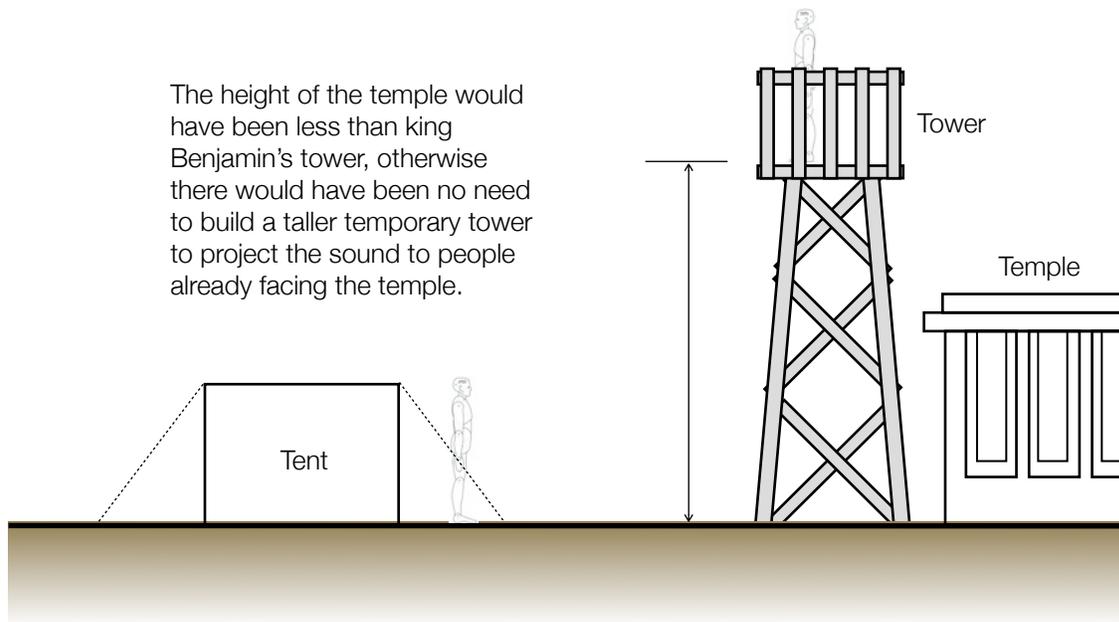
The four sons of Mosiah and their fellow brethren taught the Lamanites in the land of Nephi by entering “into their houses,” and “into their temples and their synagogues” (Alma 23:2; 26:29). This “free access” to the Lamanite temples was granted by “decree” of the converted king of the Lamanites, the father of king Lamoni (Alma 22:27; 23:1–2). There is no mention of the materials that were used to construct these temples, nor if they were built by the Lamanites or by the Nephites, who some 100 years before abandoned this same land of Nephi under the direction of king Mosiah (the first) and traveled northward to the land of Zarahemla (Omni 1:5–19). King Mosiah (the first) was the great-grandfather of the sons of Mosiah.

Temples in the land of Zarahemla

Mosiah 1:18; 2:1, 5, 7; Alma 16:13 (constructed from about 200 to 78 B.C.)

There is little information concerning the first temple built in the land of Zarahemla. It would appear that it was constructed during the reign of king Benjamin’s father, king Mosiah (the first) or by king Benjamin himself. The temple most likely would have been built sometime

after the Nephites arrived in the land of Zarahemla from the land of Nephi in about 200 B.C. and merged with the people of Zarahemla (the Mulekites). The earliest mention of the temple is in 124 B.C. (Mosiah 1:18). We do not know if the temple was within the city of Zarahemla or somewhere outside its confines. The record emphasizes that the people “gathered themselves together, to go up to the temple” (Mosiah 1:18; 2:1, 5). The temple had walls, and the people gathered within the walls to be taught (Mosiah 1:18; 2:7).



What was the height of the temple in Zarahemla? The record seems to suggest that the temple itself might not have been too tall, possibly only one-story high. If the temple were multistoried or a lofty, stepped pyramid, king Benjamin could have merely climbed a ladder, or the steps of the pyramid, and spoken from the top (or any elevated spot) of the temple to project the sound of his voice, rather than erecting a hastily built tower next to the temple for that purpose. This would suggest that the temple height was notably less than the top of the tower. The record states that before the tower was built, the people had already “pitched their tents round about the temple, every man having his tent with the door thereof towards the temple, that thereby they might remain in their tents and hear the words which king Benjamin should speak unto them” (Mosiah 2:6; see section on *King Benjamin's Tower*, below). The tower appears to have been built next to the temple area because that's where the people were assembled in their tents, “with the door thereof towards the temple,” and that's where they remained to hear king Benjamin's words from the tower.

There appears to have been more than one temple in the land of Zarahemla. The record states that, “Alma and Amulek went forth preaching repentance to the people in their temples, and in their sanctuaries, and also in their synagogues, which were built after the manner of the Jews” (Alma 16:13). It is not clear if these additional temples were built by the Lord’s people or by those not affiliated with the church, and Alma and Amulek were merely using the temples as places to teach the gospel. There is no mention of the materials that were used to build temples in the land of Zarahemla.

Temples in the lands northward

Helaman. 3:9–14 (constructed after 55 B.C.)

After 55 B.C., tens of thousands of the Nephites left the land of Zarahemla and the surrounding lands and settled new lands farther to the north (Alma 63:4–9; Hel. 3:9–14). Here in the northern land of Desolation, a land previously occupied, but left desolate and deforested by the Jaredites, “they did suffer [allow] whatsoever tree should spring up upon the face of the land that it should grow up, that in time they might have timber to build their houses, yea, their cities, and their temples, and their synagogues, and their sanctuaries, and all manner of their buildings” (Hel. 3:9). Note the need for timber to build more than one temple. The word “timber” in older English did not refer to raw trees but wood that had been cut and prepared for building, comparable to our use of the word lumber today. This scarcity of timber for building temples and other buildings was compensated by transporting “much” timber “by the way of shipping” (Hel. 3:10–14). Hagoth’s first ship sailed to the north lands with people and “with much provisions.” The record indicates that he “built other ships” (Alma 63:5–9). Some houses were built of a combination of cement and timber, but there is no mention of stone. Stone is not the same as cement, and only houses, and not temples, are mentioned as being built with cement construction. The Nephites desired timber for the construction of all their buildings, including their temples (Hel. 3:9, 14). The

Dictionary Definitions

In our studies of the Book of Mormon text, we have found it helpful to search for word definitions that were acceptable and appropriate before the Book of Mormon was first printed in 1830. These older definitions have been selected, with that date as a benchmark, from the *Oxford English Dictionary*, the accepted authority on the evolution of the English language over the last millennium. Current definitions often obscure the original meanings of scripture text. Where appropriate, these older definitions are provided in our analysis of the Book of Mormon text.

record does not mention stone construction. (For an analysis of Nephite cement construction see, *Cement*, below)

Temple in the land Bountiful

3 Nephi 11:1 (constructed before A.D. 34)

After his crucifixion, the Saviour Jesus Christ appeared to the people at a temple in the land Bountiful, the Nephite-occupied land just north of the land of Zarahemla. At this temple he taught the people for three days. There is no mention of why the temple in the land Bountiful was chosen for this sacred occasion. We should note, however, that the city of Zarahemla had been “burned with fire” only a short time before and was not “built again” until sometime later (3 Ne. 8:8, 24; 9:3; 4 Ne. 1:8). There is no mention of materials that were used to build the temple in the land Bountiful.

No stone construction

In all the recorded descriptions of Nephite temples, built in four widely scattered areas of the Nephite lands, there is not a single mention of stone construction. The record does indicate, however, that their temples were built of wood (timber) and metal of various types. And Mormon indicates that the Nephite structures “were built after the manner of the Jews” (Alma 16:13). No temple is described as pyramidal in shape nor monumental in purpose or built to honor a leader or its builder. According to the Book of Mormon record, these temples were built for ordinance observance and worship as revealed by the Lord, not unlike the tabernacle of Moses, the temple of Solomon or the temple in Kirtland, Ohio, and subsequent temples in this dispensation (D&C 94:1–9; 105:33; 109:2–4).

Synagogues

The Book of Mormon synagogues, both Nephite and Lamanite, were places of common worship and teaching, from the time of Nephi at the beginning of the record until a thousand years later when Mormon taught his people in “the synagogue which they had built for the place of worship” (Moro. 7:1. See also, 2 Ne. 26:26; Alma 16:13; 21:4–5, 11, 16, 20; 23:2; 26:29; 31:12–13; 32:1–3, 5, 9–10, 12; 33:2; Hel. 3:9, 14; 3 Ne. 13:2, 5; 18:32). These buildings were different in purpose and separate from the Nephite temples, not unlike the distinction between a synagogue and a temple in the Biblical record or the same contrast in function between our ward and stake buildings and temples today.

There is no mention of the manner of synagogue construction or how large they were. The record indicates, however, that because of “little timber upon the face of the land” in the north, the Nephites “did suffer [allow] whatsoever tree should spring up upon the face of the land that it should grow up, that in time they might have timber to build their ... synagogues” (Hel. 3:9, 14). According to the record, the use of “cement” construction in these northern lands was for “houses of cement” and there is no mention of using cement in the construction of synagogues (Hel. 3:7).

When the sons of Mosiah taught the Lamanites in the land of Nephi, king Lamoni, who was a recent convert, “caused that there should be synagogues built in the land of Ishmael; and he caused that his people, or the people who were under his reign, should assemble themselves together” (Alma 21:20; between 90 and 77 B.C.). This process of building synagogues for the immediate purpose of assembling king Lamoni’s people would suggest that they did not spend years, decades or generations building large stone structures but rather basic and quickly built structures, perhaps like the structures for worship the early Saints built in this dispensation. Most likely, the cost of building a synagogue would have been borne by the people in each of the designated and limited areas, and an elaborate stone building would have taxed their time and resources beyond that required to meet an immediate need.

In the land of “Antionum, which was east of the land of Zarahemla,” one of the Zoramite synagogues was high enough that “they had a place built up in the center of their synagogue, a place for standing, which was high above the head; and the top thereof would only admit one person” (Alma 31:3, 13; about 74 B.C.). This high place was called by the Zoramites, “Rameumptom, which, being interpreted, is the holy stand” (Alma 31:21). A structure with a high ceiling would have had to be extremely well engineered if it were built of stone. It took European artisans—using labor from a feudal system—many centuries to develop techniques for building lofty stone cathedrals and often a construction time spanning many decades and even generations of parishioners before they were completed. The high position of the Zoramite “Rameumptom” might have been merely to help project the sound of the “prayers” offered from this holy stand (Alma 31:13–23).

According to Mormon, “their synagogues ... were built after the manner of the Jews” (Alma 16:13). Jewish synagogues traditionally contained simple furniture, rolls of sacred writings, a desk for reading and seats for worshipers. There was a synagogue in

every town where Jews were living, not only in Palestine but elsewhere (see *Bible Dictionary*, “Synagogue”). These Book of Mormon synagogues, along with Jewish synagogues, provide a striking contrast to the pyramidal forms of ancient structures in Meso-America whose high tops were often intended to be reached by worshippers climbing the *outside* of the stone building. Given the number of synagogues built by small groups of people, we believe wood (timber) would have been most feasible and not stone. Certainly stone construction is not mentioned, but timber as a building material is recorded for the synagogues in the north lands.

Palaces

Mosiah 11:9; Alma 22:1–2 (between 160 and 150 B.C., in land of Nephi)

The “spacious palace” built by king Noah could be the largest building noted in the Book of Mormon account. King Noah, the Nephite dissenter, was the son of Zeniff who led the small group from Zarahemla, through the narrow strip of wilderness, to the land of Nephi in about 180 B.C. (see journey of Zeniff’s people back to the land of Nephi in our topic article, *The Narrow Strip of Wilderness—Spatial Features, Orientation and Recorded Journeys*). King Noah’s “spacious palace ... was of fine wood” and “ornamented with gold and silver and with precious things” (Mosiah 11:9). The record mentions that king Noah built other “elegant and spacious buildings” and “ornamented them with fine work of wood, and of all manner of precious things, of gold, and of silver, and of iron, and of brass, and of ziff, and of copper” (Mosiah 11:8). He supported his “idolatrous” and lascivious living by taxing the people a “fifth part of their gold and of their silver, and a fifth part of their ziff, and of their copper, and of their brass and their iron; and a fifth part of their fatlings; and also a fifth part of all their grain” Mosiah 11:3). Again it is significant there is no mention of stone used in the construction of king Noah’s “spacious” palace. And clearly “fine wood” was the most significant material in its construction.

King Lamoni’s father, the king of the Lamanites converted by the sons of Mosiah, lived in a palace, and Aaron and his brethren went into the “king’s palace” where they taught him the gospel (Alma 22:1–2). It is not clear if Lamanites built this palace or the palace was built by king Noah, son of Zeniff, and his fellow Nephites in this land before king Noah suffered death by fire and their land invaded and occupied by the Lamanites (Alma 19:1–25).

Towers

There are numerous references to towers in the Book of Mormon, and these structures appear to have been built almost everywhere. A tower can refer to a “building lofty in proportion to the size of its base, either isolated, or forming part of a castle, church, or other edifice, or of the walls of a town.” The older English definition of a tower is “a structure used as a stronghold, fortress, or prison, or built primarily for purposes of defense.” A tower in this sense can sometimes be extended to include the whole fortress or defensive stronghold of which there may be a lofty tower. Thus the word tower does not necessarily refer to “tall” buildings, but to “defense” buildings that help protect from attack.

The oldest tower in the Book of Mormon is the “great tower” of Babel which was built before the time Jared and his brother journeyed “into that quarter where there never had man been” (Mosiah 28:17; Ether 1:3, 33; Ether 2:5). We have no scriptural information in the Bible or the Book of Mormon on the size of the “great tower” or the material it was made of, so we are left to visualize its construction based on artists’ depictions. But we should stress that the details in such pictures are merely guesses, and drawings of ancient structures seldom seem to be constrained by the lack of supporting evidence. (See *Preparing for the Journey* in our topic article, *Jared, his Brother and their Friends—A Geographical Analysis of the Book of Ether*)

King Benjamin’s tower

Mosiah 2:1–9 (about 124 B.C.)

The well-known tower of king Benjamin was built about 124 B.C. to assist the sound coverage of his address to the assembled “multitude.” The people of Nephi, under the guidance of Mosiah (the first), father of King Benjamin, had merged with the people of Zarahemla in the land of Zarahemla (see journey of king Mosiah, the first, to the land of Zarahemla in our topic article, *The Narrow Strip of Wilderness—Spatial Features, Orientation and Recorded Journeys*). This tower was conceived and built after everyone had gathered to hear the words of king Benjamin. This was its unique feature.

And they pitched their tents round about the temple, every man having his tent with the door thereof towards the temple, that thereby they might remain in their tents and hear the words which king Benjamin should speak unto them;

For the multitude being so great that king Benjamin could not teach them all within the walls of the temple, therefore he caused a tower to be erected, that thereby his people might hear the words which he should speak unto them.

And it came to pass that he began to speak to his people from the tower; and they could not all hear his words because of the greatness of the multitude; therefore he caused that the words which he spake should be written and sent forth among those that were not under the sound of his voice, that they might also receive his words.

(Mosiah 2:6–8)

Note that the tower was built only after it was determined that all the people could not be taught “within the walls of the temple” (Mosiah 2:7). The number of people who were

gathered could not have been too large if the initial intent were to teach them “within the walls of the temple” (see section on *Temples in land of Zarahemla*, above). We suggest these walls were the walls surrounding the temple, such as around the temple of Herod in Jerusalem, and not the walls of the actual temple structure.

The walls surrounding the temple in Jerusalem enclosed an area of some 300 feet by 500 feet, or 3.4 acres. This must not have been a large “multitude” because the people’s desire to “remain in their tents and hear the words which king Benjamin should speak unto them” is counterproductive to hearing well because of the wide spacing of the tents, as opposed to standing or sitting closer together, and yet they thought they could have heard his words. A tower to enhance

the sound transmission, and allow the people to hear the words king Benjamin “should speak unto them,” was built quickly, as measured in hours and certainly less than a day, because the people who were gathered apparently didn’t leave and then come back once it was completed. To build this type of tower hurriedly, it would have been constructed with readily obtainable materials such as wood lashed together with ropes. Even though this hastily erected tower was pressed into service, it did not provide the necessary boost to



King Benjamin’s address. Artist: Jeremy Winborg.

the sound transmission, and many of the people still could not hear king Benjamin, and so he sent his written words “among those that were not under the sound of his voice, that they might also receive his words” (Mosiah 2:8). It appears that the size and construction of this tower was based more on expediency and not on prior experience with enhancing sound transmission to crowds of even this limited magnitude. No stone construction is mentioned, nor could it have been incorporated into the construction of a hastily built tower.

Zeniff’s towers

Mosiah 11:11–12 (between 160 and 150 B.C.)

There were towers built in the land of Nephi by the people of Zeniff after they had returned to the land of Nephi from the land of Zarahemla in about 180 B.C. These towers appear to have been built for lookouts to watch for the Lamanites approaching from the surrounding lands. King Noah, Zeniff’s son, built “a tower near the temple; yea, a very high tower, even so high that he could stand upon the top thereof and overlook the land of Shilom, and also the land of Shemlon, which was possessed by the Lamanites; and he could even look over all the land round about” (Mosiah 11:12–13; 19:5). The ability to overlook the activities of the Lamanites in lands surrounding the temple site implies the landscape and vegetation of this area in the land of Nephi was open and not heavily treed and not covered with the continuous canopies which form the uppermost foliage of tropical forests. King Noah also “caused a great tower to be built on the hill north of the land Shilom, which had been a resort for the children of Nephi at the time they fled out of the land; and thus he did do with the riches which he obtained by the taxation of his people” (Mosiah 11:13).

The towers were to serve as part of an early warning system. Zeniff and his people were an exceptionally small group, probably less than a thousand, therefore, we would have to assume these towers were built quickly in a simple manner with a limited number of workers (see Mosiah, chapters 9 to 22). There is no mention of how these towers were built nor the materials used, but this small group certainly did not have the time or resources to build stone towers. And no stone construction is mentioned for towers or for any of the numerous structures built by the people of Zeniff (Mosiah 11:8–13).

Captain Moroni's towers

Alma 46, 50–51 (about 72–67 B.C.)

Moroni, chief captain of the Nephite armies, built towers throughout the Nephite lands of Zarahemla and Bountiful (about 72–67 B.C.) at the same time he created “works of timbers” around some of their cities with “a frame of pickets built upon the timbers round about; and they were strong and high” (Alma 50:1–5). The word “pickets” refers to pointed wooden stakes. It was soon after creating these “works of timbers” that Moroni “caused towers to be erected that overlooked those works of pickets, and he caused places of security to be built upon those towers” (Alma 50:4). A place of “security” refers to a place protected against attack. The height of these defense towers was such that they could “cast stones from the top thereof, according to their pleasure and their strength, and slay [an enemy] who should attempt to approach near the walls of the city” (Alma 50:4). This would suggest the towers were only 10 to 15 feet high so the Nephites could throw stones from the top with an acceptable degree of accuracy and “slay” their adversaries. Exceedingly tall towers would provide only indiscriminate stone throwing with no accuracy compared to a more reasonable lower height. There is no mention of the actual material used to create these towers, but since Moroni’s people at the same time were creating picketed walls with timbers it would not be unreasonable to assume they also used timber (lumber) to quickly create these defense towers. An intensive and long-term construction project using stone would be counterproductive as an immediate defense strategy.



A wooden tower used as a lookout.

Captain Moroni “compelled” the people “to hoist the title of liberty upon their towers” (Alma 46:36; 51:20). This suggests many Nephite cities had some type of tower, if even for defense. The height of these towers must have been such that the people on the ground could readily observe the written words of the “title of liberty” declaration: “*In memory of*

our God, our religion, and freedom, and our peace, our wives, and our children” (Alma 46:12, 19). If the towers were exceedingly tall there would have been no point in hoisting these declarations “upon” their towers if the people could not discern the words and follow their counsel. Again, we would suggest these defense towers throughout “all the land, which was possessed by the Nephites” were simple wood towers and not stone structures (Alma 46:36).

Nephi’s tower

Helaman 7:10–14 (between 23 and 20 B.C.)

In about 23 B.C., Nephi, son of Helaman, mourned and lamented “upon a tower, which was in the garden of Nephi, which was by the highway which led to the chief market, which was in the city of Zarahemla” (Hel. 7:10). We assume that Nephi was not unlike king Benjamin who had “not sought gold nor silver nor any manner of riches” (Mosiah 2:12) to provide for his substance. If Nephi did not tax his people for his income, we believe the tower he had built would have been simple and probably made of wood, whereas an ostentatious stone tower would have been built at great expense of labor and material. Nephi’s tower, probably a defense structure, could not have been extremely tall because “there were certain men passing by and saw Nephi as he was pouring out his soul unto God upon the tower; and they ran and told the people” that they had seen Nephi bowing “himself upon the tower which was in his garden” (Hel. 7:10–11). Nephi then preaches to the people on the ground from “upon the tower,” implying that the structure was not too tall (Hel. 7:13–29).

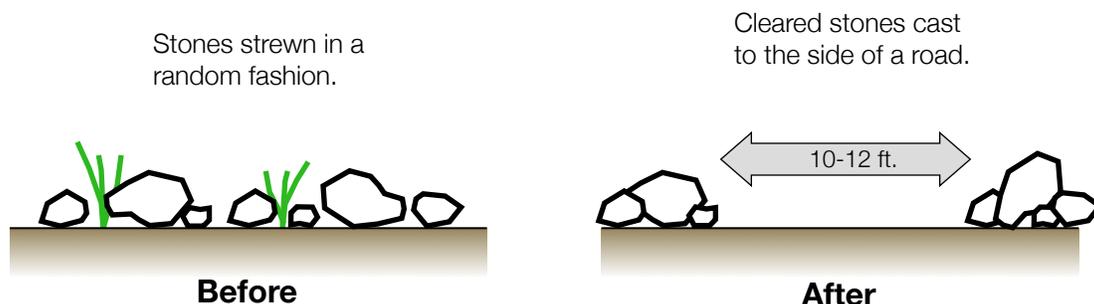
No stone construction

All of these accounts of Book of Mormon towers do not describe large and lavish structures made of stone as are so often portrayed in artist’s drawings of ancient Book of Mormon structures. Rather they suggest simpler and smaller defense towers made of wood. But the most telling evidence is the absence of any mention of stone construction in the Book of Mormon account when describing the building of towers. For additional references of towers in the Book of Mormon, see Alma 48:1 and Moroni 9:7.

Highways and Roads

Helaman 7:10; 14:24; 3 Nephi 6:8; 8:13 (between A.D. 26 and 34)

Cast up highways and roads are probably the most expansive man-made structures mentioned in the Book of Mormon. A “highway” in older English refers to “a main road, especially one connecting major towns and cities.” A “road” refers to “a wide way leading from one place to another.” Mormon when referring to the time period from A.D. 26 to 30, some 600 years after their arrival in the promised land, recorded that “there were many highways cast up, and many roads made, which led from city to city, and from land to land, and from place to place” (3 Ne. 6:8; see also, 3 Ne. 8:13). These “cast up” highways appear to have radiated out from the city of Zarahemla, the center of their lands, and connected with outlying settlements. Given even the moderate size of their lands, there could have been tens or even hundreds of miles of extensive roadways which were “cast up.” The process of “casting up” a road or highway consisted of clearing the ground of an existing path or trail of obstacles such as stones, rocks and vegetation and then moving the larger rocks and stones to the side of the path to clear the way and visually demarcate a preexisting route. This procedure was also used in the Biblical lands for highways and roads and by the Spanish in areas they occupied in the western hemisphere. These nuisance rocks and stones were simply “cast” or thrown to the side of the road forming a discernible border. The prophet Isaiah explains the “casting up” process in the making of



The process of “casting up a highway” by removing stones to delineate the edge of a road or highway.

highways when he states: “prepare ye the way of the people; cast up, cast up the highway; gather out the stones (Isa. 62:10; see also, Isa. 57:14; Jer. 18:15). Thus a “cast up highway,” even in the Biblical setting, was made by gathering out the stones so they could be cast to the side. Mormon records that in A.D. 34, at the time of Christ’s

crucifixion, these Nephite “highways were broken up, and the level roads were spoiled, and many smooth places became rough” (3 Ne. 8:13).

Ammon prepared the “horses and chariots” of king Lamoni to “conduct him forth to the land of Nephi; for there had been a great feast appointed at the land of Nephi, by the father of Lamoni, who was king over all the land” (Alma 18:9–10, 12). By “proclamation of Lachoneus,” the chief judge and governor of the land of Zarahemla, the people took “their horses, and their chariots” and went “forth to the place which had been appointed that they should gather themselves together, to defend themselves against their enemies” (3 Ne. 3:22). In older English, “chariots” were any wheeled vehicles for the conveyance of goods such as a cart or wagon and not simply stately coaches for the conveyance of persons or a vehicle for warfare. To accommodate these commonplace, wheeled vehicles,



Ancient roads south of San Ignacio, Baja California, in the proposed location of the land of Zarahemla.

we suggest the “roads” and “cast up highways” of the Nephites would have been some 10 to 12 feet wide. Walking roads for people and animals could have been only three to five feet wide.

Remnants of these “cast up highways” are still evident today in Baja California, much like remains of ancient Roman roads are still visible. We have been struck by the time-worn “cast up” roads that still extend for significant distances in many of our proposed

locations for Nephite cities and between Book of Mormon lands, especially the land of Zarahemla. Their alignment, construction and engineering appear to be better than the rather basic and quickly built “Camino Real,” or Royal Road the Spanish built in the 1700s and 1800s to connect their mission centers along the length of Baja California and Alta California (see, Harry W. Crosby, *The King's Highway in Baja California*, Copley Books, 1974; and our topic article, *The Narrow Strip of Wilderness—Spatial Features, Orientation and Recorded Journeys*). These extensive pre-Spanish roads are still visible on the ground and especially from space using images from *Google Earth*. The basis for their existence and the engineering techniques used in their construction remain to be further explored and analyzed. This task is high on our research agenda and a major focus of our field-based investigations. These remnants of ancient highways in Baja California, extending for

many miles, show evidence of an earlier people with experience in road building, a necessity to build such roads and a collective will to accomplish the task. Just as important, the construction of these roads matches the description of “cast up” highways in the Book of Mormon account and are primarily located in our proposed area for the land of Zarahemla.

Prisons

It is a thought-provoking commentary that in the Book of Mormon, other than tents, there are more references to prisons than any other structures. Within these numerous prison accounts, prisoners are often bound with cords (Mosiah 7:7–8; Alma 8:31; 14:22–23; 20:30; Hel. 9:9). This may suggest that the prison structures were not strong nor secure, requiring the binding of prisoners to prevent escape. For example, in the land of Lehi-Nephi, Ammon and his brethren, Amaleki, Helem and Hem, were “surrounded by the king’s guard, and were taken, and were bound, and were committed to prison” (Mosiah 7:7; see also Alma 20:3). After “they had been in prison two days they were again brought before the king, and their bands were loosed” (Mosiah 7:8). This is the same prison that some 90 years later Nephi and Lehi were “cast into ... yea, even that same prison in which Ammon and his brethren were cast by the servants of Limhi” (Hel. 5:21). Within this prison, “Nephi and Lehi were encircled about with a pillar of fire” (Hel. 5:24). They expected the fire would “take hold upon the walls of the prison,” but it did not, suggesting the prison walls were made of wood (Hel. 5:44). The “earth shook exceedingly, and the walls of the prison did shake as if they were about to tumble to the earth; but behold, they did not fall,” again suggesting the walls were made of wood and not stone, because the wood would absorb more of the shaking energy than would stone (Hel. 5:27). In the land of Zarahemla a prison’s walls were “rent in twain” allowing Alma and Amulek and later the Three Nephites to escape (Alma 14:27; 3 Ne. 28:19; see Ether 12:13). Renting in twain (breaking into two pieces) suggests these prisons were made of wood. The Three Nephites were also held in the “depths of the earth” in pits, but no pit was “sufficient to hold them” (3 Ne. 28:20). In the land Bountiful, the Nephites guarded their Lamanite prisoners “within a wall which they had caused them to build with their own hands” (Alma 53:5). At that time, the Nephites “did cause the Lamanites to labor until they had encircled the city of Bountiful round about with a strong wall of timbers and earth, to an exceeding height” (Alma 53:4). The “exceeding height” was a “height of a man” (Alma 50:2). No stone construction is mentioned in these prison accounts.

Tents

Tents, tents, tents. Tents are everywhere in the Book of Mormon narrative, from Nephi's earliest account to Mormon's last record written a thousand years later (1 Ne. 2:4; Morm. 6:4). As would be expected, tents were carried on journeys: Lehi and his family leaving the land of Jerusalem and traveling to the place they called Bountiful (1 Ne. 2:4); Nephi's journey to the land of Nephi (2 Ne. 5:7); Zeniff's journey back to the land of Nephi (Mosiah 7:5; 9:4); Alma's journey to land of Helem and later to the land of Zarahemla (Mosiah 18:34; 23:5; 24:20); and Ammon's exodus from the land of Nephi with his Lamanite converts, the Anti-Lehi-Nephites (Alma 27:25). People listened from their tents to king Benjamin's address (Mosiah 2:5). Military campaigns required tents: The army of Alma in the valley of Gideon (Alma 2:20); the army of Teancum fighting on the borders of the land Bountiful (Alma 51:32, 34) and numerous other military campaigns (Alma 58:13, 17, 25; 62:18).



A nomad's tent in an open environment.

The frontier movement of tens of thousands of Nephites and Lamanites to the land of Desolation in 55 B.C. required continuous living in tents as a supplement to their building homes of timber and cement (Hel. 3:9). At the final battle between the Lamanites and the Nephites, some 230,000 Nephites gathered—pitching their vast sea of “tents around about the hill Cumorah” to ominously await the more numerous Lamanites marching towards them (Morm. 6:4–15). Mormon records that the “more idle part of the Lamanites lived in the wilderness, and dwelt in tents; and they were spread through the wilderness on the west, in the land of Nephi; yea, and also on the west of the land of Zarahemla, in the borders by the seashore, and on the west in the land of Nephi, in the place of their fathers' first inheritance, and thus bordering along by the seashore” (Alma 22:28; see also, Enos 1:20). These three areas of Lamanite tent dwelling appear to have stretched for hundreds of miles along the western seashore of the major lands of Nephi and Zarahemla. When the Jaredites arrived at “that great sea which divideth the lands ... they pitched their tents; and



Three locations (grey) where Lamanites “dwelt in tents,” bordering the seashore.

they called the name of the place Moriancumer; and they dwelt in tents, and dwelt in tents upon the seashore for the space of four years” (Ether 2:13). (See “Camping on the Shores of the Great Sea” in our topic article, *Jared, his Brother and their Friends—A Geographical Analysis of the Book of Ether*).

According to their record, the Book of Mormon people — Jaredites, Lamanites and Nephites — were highly mobile societies well accustomed to tent living. Tents were ubiquitous, and the continuous dwelling choice of many. The preference for tent dwellings was a natural complement, and the common cultural response, to the open Mediterranean and semiarid landscapes, vegetation and climates of the Biblical lands and Baja California. These tents most likely were assembled from goat and other animal skins attached to wood frames and held down with ropes and stakes, similar to the construction of tents in the lands of the Bible, even to this day. Some tent coverings would have been spun and woven from goat’s hair. Tents, however, do not fit well as common and continuous dwelling choices in the more humid areas of Meso-America, especially within the less-open and entwined foliage of rain-forested areas.

Other Structures

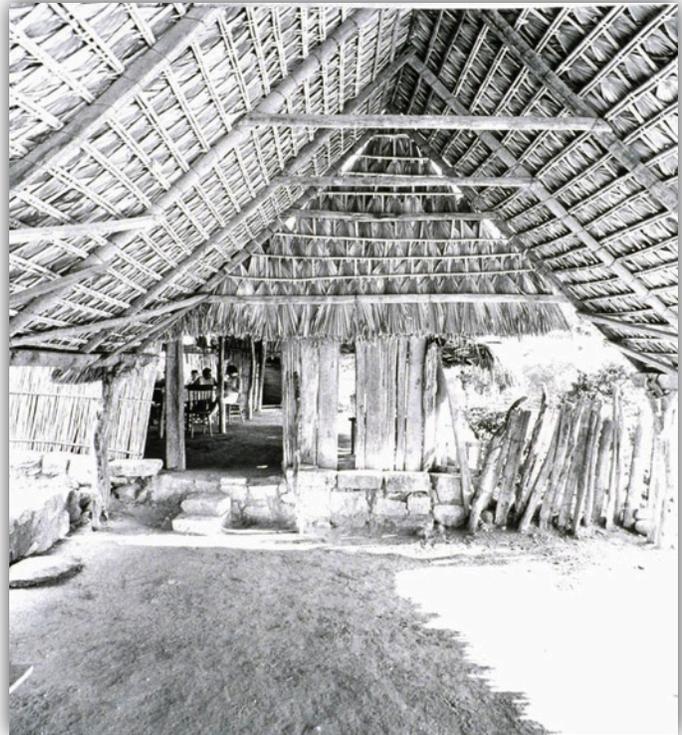
Sanctuaries

In four places in the Book of Mormon, structures called sanctuaries are listed alongside temples and synagogues (Alma 16:13; 23:2; Hel. 3:9, 14). Their function appears complementary to temples and synagogues. Sanctuaries appear to be places of worship, especially for individual devotion, although the people assembled “themselves together at their sanctuaries to worship God before the altar, watching and praying continually, that they might be delivered from Satan, and from death, and from destruction” (Alma 15:17;

see also, Alma 21:6). The sanctuaries in the northern lands, built as a result of the substantial immigration of the Nephites and Lamanites starting in 55 B.C., were constructed of timber (Hel. 3:9; see section, *Cement*, below).

Houses

There are numerous references to houses in the Book of Mormon record: Lehi left his “house at Jerusalem,” and “departed into the wilderness” (1 Ne. 1:7; 2:4). Alma “conducted his brethren back to the land of Zarahemla; even to his own house” (Alma 27:20). King Benjamin, after speaking to the people in their tents from his tower “dismissed the multitude, and they returned, every one, according to their families, to their own houses” (Mosiah 6:3). Captain Moroni “yielded up the command of his armies into the hands of his son, whose name was Moronihah; and he retired to his own house that he might spend the remainder of his days in peace” (Alma 62:43). There are references to houses near streets, suggesting an organized arrangement of dwellings (Alma 26:29; 32:1). Houses in the northern lands were built of both cement and timber, but the settlers “did suffer whatsoever tree should spring up upon the face of the land that it should grow up, that in time they might have timber to build their houses” (Hel. 3:7, 9). Some of the “people who were in the land northward did dwell in tents” (Hel. 3:9).



A wood frame and thatched roof structure in Baja California.

And tents were permanent dwellings among the Lamanites living along the western seashore of the land of Zarahemla and the land of Nephi (Alma 22:28; see also, Enos 1:20 and section on *Tents*, above). To complete our inventory, we note references to buildings in the Book of Mormon account that may have been slighted elsewhere in our analysis: 2 Ne. 5:15; Jarom 1:8; Mosiah 9:8; 11:13; 23:5; 3 Ne. 8:14; and Morm. 1:7. These are general references to buildings, with no helpful descriptions of type, size or construction.

Fields and Gardens

The Nephite fields supported both crops and flocks of animals (Mosiah 9:12, 14). The yield of these “fields” was crucial to the Nephite survival, and they were “greatly afflicted” for the “loss of their flocks and herds, and also for the loss of their fields of grain,” when their fields “were trodden under foot and destroyed by the Lamanites” (Alma 4:2). And “also many of their fields of grain were destroyed, for they were trodden down by the hosts of men” in



A garden area in Baja California, growing a variety of fruits and vegetables.

times of war (Alma 3:2; see also, Mosiah 9:12, 14; 11:16; 20:8; 23:26). Amulek admonished the Zoramites to “cry unto [the Lord] when ye are in your fields, yea, over all your flocks” (Alma 34:20). Mormon observed, however, that when the Lord “doth prosper his people, yea, in the increase of their fields, their flocks and their herds, and in gold, and in silver, and in all manner of precious things of every kind and art; sparing their lives, and delivering them out of the hands of their enemies;

softening the hearts of their enemies that they should not declare wars against them; yea, and in fine, doing all things for the welfare and happiness of his people; yea, then is the time that they do harden their hearts, and do forget the Lord their God, and do trample under their feet the Holy One—yea, and this because of their ease, and their exceedingly great prosperity” (Hel. 12:2).

As we have noted, Nephi had a garden “which was by the highway which led to the chief market, which was in the city of Zarahemla” (Hel. 7:10). A “multitude ... gathered together at the garden of Nephi,” and “judges,” before “the burial of the great chief judge who had been slain,” met “at the garden of Nephi” to hear Nephi’s words (Hel. 9:8, 11). Nephi’s garden appears to have served as a public gathering place.

Markets

There was a “chief market, which was in the city of Zarahemla,” and a “highway” led to the market (Hel. 7:10). The existence of a “chief market” implies there were other markets in nearby areas. A market is where vendors convene to sell their goods and people regularly

or periodically gather to buy provisions, livestock, and other commodities. A market can be in an open space or a covered building.

Gates

Nephi had a “garden gate by which led the highway” to the “chief market, which was in the city of Zarahemla” (Hel. 7:10). A gate can be merely an opening in a city wall for exiting and entering or a barrier fortifying such openings. King Limhi desired “to know the cause whereby” Ammon and his brethren “were so bold as to come near the walls of the city” of Nephi, when he was with his guards “without the gate” (Mosiah 7:10). King Limhi, “having been without the gates of the city with his guard, discovered Ammon and his brethren; and supposing them to be priests of Noah therefore he caused that they should be taken, and bound, and cast into prison” (Mosiah 21:23).

Judgment-seat

The judgment-seat appears to be a specialized entity associated with the governing of the Nephite people that one could sit upon: Kishkumen was sent forth to “the judgment-seat of Pahoran, and murdered Pahoran as he sat upon the judgment-seat” (Hel. 1:9; see also, Hel. 2:8; 6:19; 9:7).

Ships

The descendants of father Jacob, in Biblical times, were not a seafaring people, but primarily farmers and herdsman. Shipping was almost exclusively a trade of their neighbors, the Phoenicians. Continuing this pattern, the Book of Mormon record mentions only limited shipping. Nephi with the Lord’s instruction built a ship to transport his family to the promised land. But it is not until 55 B.C., some 550 years after their arrival, that there is any mention of shipping: Hagoth, “an exceedingly curious [skillful] man ... went forth and built him an exceedingly large ship, on the borders of the land Bountiful, by the land Desolation, and launched it forth into the west sea, by the narrow neck which led into the land northward” (Alma 63:5). Hagoth “built other ships. And the first ship did also return, and many more people did enter into it; and they also took much provisions, and set out again to the land northward. And it came to pass that they were never heard of more. And we suppose that they were drowned in the depths of the sea. And it came to pass that one other ship also did sail forth; and whither she did go we know not” (Alma 63:8). Other ships were used by the Nephites to “send forth” people, timber and provisions, “by the

way of shipping,” to the land northward (Hel. 3:10; see also, Alma 63:10; Hel. 3:14). The Nephite’s seafaring abilities appear to have been fairly modest, not only from the scarcity of shipping information in the record, but also by the stark reality that one of the small number of ships mentioned did not reach its northern destination and was “never heard of more,” and another “did sail forth; and whither she did go we know not.” The Jaredites with the Lord’s instruction constructed two sets of barges (boats) to help transport their families from the “great tower” to the same promised land, but there is no mention of shipping after their arrival (see our topic article, *Jared, his Brother and their Friends—A Geographical Analysis of the Book of Ether*).

Cement

Helaman 3:7, 9, 11 (about 55 B.C., in the land northward)

There is only one reference in the Book of Mormon, consisting of three verses, that mentions building with “cement.” When pointed out to Book of Mormon readers, this scarcity of references often comes as a surprise.

And there being but little timber upon the face of the land, nevertheless the people who went forth became exceedingly expert in the working of cement; therefore they did build houses of cement, in the which they did dwell.

...

And the people who were in the land northward did dwell in tents, and in houses of cement, and they did suffer whatsoever tree should spring up upon the face of the land that it should grow up, that in time they might have timber to build their houses, yea, their cities, and their temples, and their synagogues, and their sanctuaries, and all manner of their buildings.

...

And thus they did enable the people in the land northward that they might build many cities, both of wood and of cement. (Hel. 3:7, 9, 11)

Unfortunately, this is one of the most misrepresented set of verses in the Book of Mormon, and the concepts and mental images of Nephite “cement” buildings, held by some, are often far removed from the context of these three verses. It is helpful, therefore, that we attempt to provide a complete and detailed textual analysis of this single mention of the use of cement as a construction material among the Nephites.

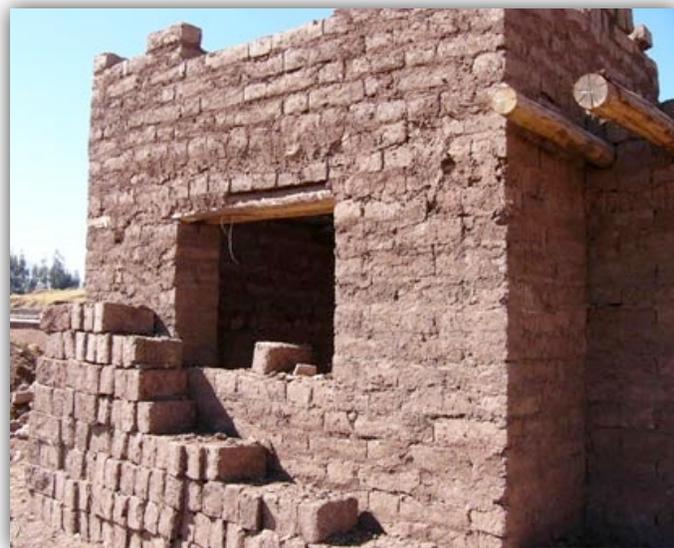
Starting in 55 B.C., at the time when Helaman and Shiblon, the sons of Alma, were the record keepers, large groups of Nephites migrated northward into the abandoned and desolated Jaredite lands. These northern lands had been deforested by the Jaredites, that is, the trees had been cut down, and the land had “been rendered desolate and without timber, because of the many inhabitants who had before inherited the land” (Hel. 3:5–7; see also, Alma 63:4). Some “five thousand and four hundred men, with their wives and their children, departed out of the land of Zarahemla into the land which was northward” and emigrated to the northern land of Desolation from the lands of Bountiful and Zarahemla to the south (Alma 63:4). And in the next year “there were many people who went forth into the land northward” (Alma 63:9). Eight years later, there were “an exceedingly great many who departed out of the land of Zarahemla, and went forth unto the land northward to inherit the land” (Hel. 3:3). And “many of the people of Ammon, who were Lamanites by birth, did also go forth into this land” (Hel. 3:12). Several groups traveled northward by ship (Alma 63:5–8, 10; Hel. 3:14). In total, tens of thousands of people relocated to these northern lands.

After some 600 years of living in the lands of Nephi, Zarahemla and Bountiful to the south, the Nephites migrated to these northern lands suddenly and in substantial numbers (see Alma 63:4). The reason is not clear. The record, however, states that “there was much contention and many dissensions” among the people of Nephi at the time they left the land of Zarahemla (Hel. 3:3). Moreover, the Nephites may have determined they should wait until a sufficient number of regenerated trees had grown and matured before they could settle the deforested Jaredite lands with a reasonable chance of success. The record states that there was a “little timber upon the face of the land” when they arrived (Hel. 3:7). We do not know how many years elapsed between the final battle of Jared’s descendants and the Nephite migration into this land, but possibly several hundred years. (See “Arriving in the Promised Land” in our topic article, *Jared, his Brother and their Friends: A Geographical Analysis of the Book of Ether*)



Dwellings in Mesa Verde, Colorado, built with adobe (cement) materials.

These tens of thousands of immigrant families needed to construct thousands of homes and other buildings upon their arrival in the land northward (Hel. 3:7–9). According to Mormon, these people “*became exceedingly expert* in the working of cement” after they arrived in the land northward (Hel. 3:7, italics added for emphasis). The phrase, “became exceedingly expert,” implies that they were not experts when they left their home in the land of Zarahemla or had even worked with cement before they arrived in their new land (Hel. 3:9). The urgent situation they found themselves in—little timber for their homes—required that they “become expert” in cement as an alternate building material. They were compelled to become experts in building with cement because of the shortage of timber—their traditional building material (Hel. 3:7). This implies that the land they came from had trees for timber, and they did not have to “become expert” in timber construction. When



An adobe home with a timber roof structure.

necessary, timber was the construction material they replaced with cement.

Timber would also have been required for the roof structures that spanned the walls of “cement” houses.

Mormon states that “they did build houses of cement, in the which they did dwell” (Hel. 3:7). It is curious that these “houses of cement” are the only cement structures noted in the record. There is no mention of larger and more elaborate structures of cement, that is, structures larger than houses, such as their temples, synagogues and

sanctuaries. Does this mean that these other structures were only built of wood? Or was house building merely the major focus of cement construction? The record is mute on this issue. Even though they built houses of cement, they also “did dwell in tents” (Hel. 3:9). Possibly not all the people were able to live in houses of cement or timber, even after many years. The “dwelling in tents” is stated numerous times throughout the thousand-year Book of Mormon record (see section on *Tents*, above). Many families in the northern lands could have continued to live in tents as their principle residence and choice of dwelling for a number of years or generations.

Clearly the Nephites, even in their new northern location, preferred to build structures of timber. Thus while they were becoming experts in the building with cement “they did suffer [allow] whatsoever tree should spring up upon the face of the land that it should grow up, that in time they might have timber to build their houses, yea, their cities, and their temples, and their synagogues, and their sanctuaries, and all manner of their buildings” (Hel. 3:9). Even while building “houses of cement,” the Nephites did not abandon timber construction or the sustaining of reforestation. Timber was their preferred and traditional building material for all their structures. This detailed statement by Mormon suggests that the traditional and almost exclusive building material for Nephite “houses,” “cities,” “temples,” “synagogues,” “sanctuaries” and “all manner of their buildings” was timber, not only in their new land but also in the lands they had come from. Why all this concern over the lack of timber if their preferred building materials were cement and stone? It appears that the existing stands of trees in this northern land had indeed been almost completely deforested by the previous inhabitants—the Jaredites—and any future supply of timber depended on new trees that “should spring up upon the face of the land” (Hel. 3:9). Protecting “whatsoever tree should spring up ... that it should grow up,” implies that the landscape of these northern lands was not the many thousands of fast-growing trees of a tropical rain forest region, but the more widely spaced and slower-growing trees of a more temperate zone such as the Mediterranean and semiarid climate areas of Baja California where every tree counts, and even slow-growing varieties of tall cacti (40 to 60 feet) have hardwood centers that are used as construction timbers.

Shipping timber supplies from the lands to the south became the means of providing this necessary and traditional building material, even though this shipping by sea would have required much time and effort. There is no mention of hauling timber overland from the southern lands. Hagoth’s ships and the ships of others were built for the stated purpose of transporting not only people but also timber and provisions to the deforested settlement area (Alma 63:6–10). Hagoth’s initial voyage launched “forth into the west sea, by the narrow neck which led into the land northward” (Alma 63:5). This western sea route is the shortest route in Baja California from our proposed land of Zarahemla to the lands northward.

It is most telling that “cement” construction is not mentioned in the Book of Mormon record outside this set of three verses. And no stone construction is mentioned with these “houses of cement” nor with any Nephite buildings in the north.

But what is meant by the phrase, “houses of cement” (Hel. 3:7)? Most of us today envision sidewalks or driveways which are built with “cement” when we encounter this reference. However, this type of modern cement was invented in the 1810s by Joseph Aspdin, a British bricklayer, which he called Portland cement because it resembled Portland stone, a type of building stone quarried on the Isle of Portland in Dorset, England. This type of modern cement does not dissolve in water because it has been heated in a kiln causing a chemical reaction that creates a solid and permanent structure when combined with water and then allowed to dry. The Romans developed a form of hydraulic cement by combining hydrated lime with pozzolan, a vitreous siliceous material. Many structures such as the Pantheon in Rome and the Roman aqueducts were built with this early form of cement.

We should emphasize that a building constructed of any type of cement material is not the same as a building constructed of stone, so these verses mentioning “cement” houses in the Book of Mormon record do not provide support for stone construction among the Nephites. Moreover, these “cement” materials seldom last longer than a hundred years even with continuous maintenance. An adobe-like “house of cement” provides, however, a building that could last a generation or hopefully the lifetime of the builder and possibly a timespan longer than a house built of timber. But would these Nephite “houses of cement” be still standing today? The early Spanish adobe structures of a few hundred years ago have long disappeared or are in a critical or final stage of ruination when they literally disintegrate into dust. Often the most

Cement

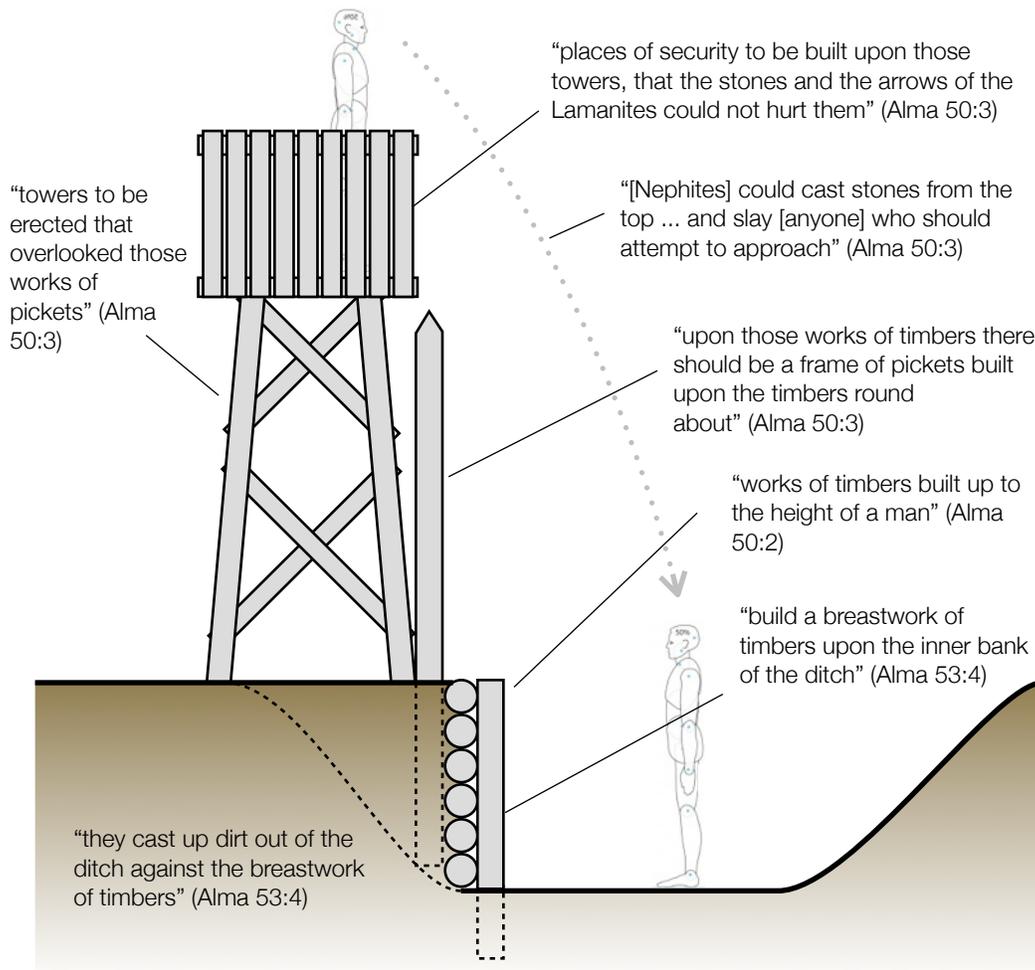
We suggest the Book of Mormon people did not employ the same process for creating cement as we do today, but rather used a “cemented” adobe-like material that is found in many southwest locations of the United States and Mexico, in Biblical lands and throughout the ancient and modern world. This type of material was often made into varying sizes of bricks that were “cemented” by moistening clay material and then drying them in the sun. Anciently it was the most ubiquitous of all “cemented” building materials. The brick walls of adobe-like structures are often covered with a thin, limestone-based cement material plastered (stuccoed) to the walls. This plaster or stucco material is made with lime and sand mixed with water. Gypsum can be used in place of lime. This limestone-based cement is often spread on the floors of these buildings. These adobe buildings use wood for the supportive roof structures that span the outer walls. Thatched materials, such as the leaflets from fan palms, provide a water-resistant outer roof covering. These types of “cement” adobe buildings are found in many parts of Baja California today because of its Mediterranean climate and semiarid environment and the ready availability of limestone (and gypsum), clay materials, and timber and fan-palm thatching materials for roofs. The early Spanish settlers in Baja California and other areas of western North America also built many structures with adobe bricks.

valuable bricks and other components are hauled away and reused. We have personally witnessed this unfortunate dismantling of abandoned historic buildings by individuals surreptitiously removing sections piece by piece for their own use. Throughout time, this hastened destruction of older buildings has occurred among all cultures and civilizations.

Freestanding Walls

In 72 B.C., Moroni, chief captain of the Nephite armies, prepared the cities to withstand Lamanite attacks by “erecting small forts, or places of resort; throwing up banks of earth round about to enclose his armies, and also building walls of stone to encircle them about, round about their cities and the borders of their lands; yea, all round about the land” (Alma 48:8). These freestanding “walls of stone” are the only significant stone construction mentioned in the Book of Mormon. The Nephite stone walls, built “round about their cities and the borders of their lands,” could have been rather extensive. Because of their hasty construction to meet an urgent security need, these walls most likely would have been formed from stacked, uncut stones and not dressed stones prepared by skilled masons. All of these extensive defense preparations were accomplished within a period of a year or two (see Alma 43 to 48). These quickly built stone walls did not provide the required protection and were supplemented with “banks of earth,” “timbers,” “towers” and “works of pickets” (Alma 48:8; 49:2, 4, 19, 22; 50:4–5). Moroni’s armies dug “up heaps of earth round about all the cities, throughout all the land which was possessed by the Nephites.” On the “top of these ridges of earth he caused that there should be timbers, yea, works of timbers built up to the height of a man, round about the cities,” and “upon those works of timbers there should be a frame of pickets built upon the timbers round about; and they were strong and high.” Note that these “works of timbers” were the “height of a man,” about five to six feet high (Alma 50:2). Moroni “caused towers to be erected that overlooked those works of pickets, and he caused places of security to be built upon those towers, that the stones and the arrows of the Lamanites could not hurt them” (Alma 50:1–3). “And he caused that they should build a breastwork of timbers upon the inner bank of the ditch; and they cast up dirt out of the ditch against the breastwork of timbers; and thus they did cause the Lamanites to labor until they had encircled the city of Bountiful round about with a strong wall of timbers and earth, to an exceeding height” (Alma 53:4). High banks of earth were “thrown up,” for security by digging deep ditches (Alma 49:18). These works of “timber” and “earth” were an essential supplement to the limited protection of “stone walls.”

Stones were prepared by the Nephites so they could be “cast” from “the top” of the city walls “according to their pleasure and their strength, and slay [anyone] who should attempt to approach near the walls of the city” (Alma 50:5). Strong “cords and ladders” were hastily prepared by Captain Moroni so that his men could be “let down from the top of the wall into the inner part of the wall,” suggesting the walls were one to two stories high (Alma 62:21). And Captain Teancum “in his anger did go forth into the camp of the Lamanites, and did let himself down over the walls of the city” (Alma 62:36).



Possible construction of the fortified walls Moroni built around Nephite cities.

King Benjamin, because of “the multitude being so great,” could not teach all the people “within the walls of the temple” (Mosiah 2:7). This suggests that these “walls of the temple” were walls surrounding the temple in Zarahemla and not the walls forming the actual

temple structure. The cities in the land of Nephi had walls (Mosiah 7:10; 21:19). King Noah repaired “the walls of the city, yea, even the walls of the city of Lehi-Nephi, and the city of Shilom” (Mosiah 9:8). The city of Nephi had a “back pass, through the back wall, on the back side of the city,” suggesting the city wall had at least two entrances (Mosiah 22:6).

Samuel the Lamanite spoke to the people in Zarahemla from “the walls of the city,” but the people “could not hit him with their stones neither with their arrows” (Hel. 16:1–2). There is no mention of the height of these city walls nor if they were made of stone or timber or a combination of the two materials. It was the people’s expectation that their stones and arrows would hit Samuel at that height, but it appears a heaven-sent power averted their stones and arrows. Note that Samuel “cast himself down from the wall, and did flee out of their lands,” suggesting that the height of the walls would not prevent his ability to successfully jump and flee, possibly six to eight feet (Hel. 16:7). Samuel’s unwelcome exhortation is often depicted by artists as taking place upon an extremely high, masonry stone wall, but there is no evidence in the Book of Mormon record to support this view.



Stone walls near San Ignacio, Baja California, built to enclose animals and delimit boundaries.

Freestanding stone walls generally serve two purposes: To provide a protective barrier for towns, cities and animals; or to visibly define boundaries of settlements, fields and lands. The practice of encircling cities and fields with stone walls and defining borders is not unlike this practice in the Biblical lands (see, for example, Deut. 3:5; 2 Sam. 20:15; 2 Chr. 33:14). One can see evidence of this today when traveling through not only the Biblical lands but nearly all agricultural landscapes across the world. The constructing of stone walls also provides a practical use for strewn rocks gathered from agricultural fields. In Baja California there are rock walls around small towns that appear to have been placed there hundreds of years ago. These stone walls also define property lines.

Without continuous repair, freestanding stone walls often tumble into heaps of stones that others might haul away for alternative uses. It is most significant that stone construction in

the Book of Mormon is only mentioned with some freestanding walls, and never in association with the construction of buildings.

Tools and Machinery

Tools and machinery are associated with many human activities, including agriculture, warfare, transportation and the building of structures. A tool is “a device or implement, especially one held in the hand, used to carry out a particular function.” Nephi made “tools” from the ore he “did molten out of the rock” to construct his ship “after the manner” which the Lord had “shown unto him” (1 Ne. 17:9–10, 16). He also taught his “people to build buildings, and to work in all manner of wood, and of iron, and of copper, and of brass, and of steel, and of gold, and of silver, and of precious ores, which were in great abundance” (2 Ne. 5:15). Jarom, the son of Enos, recorded that his people “became exceedingly rich in gold, and in silver, and in precious things, and in fine workmanship of wood, in buildings, and in machinery, and also in iron and copper, and brass and steel, making all manner of tools of every kind to till the ground” (Jarom 1:8). Machinery in older English referred to contrivances or structures of any kind created skillfully and inventively to serve a particular purpose, including a vehicle or conveyance (usually wheeled), especially one drawn by a horse or horses, or other draft animals.

The Jaredites “were exceedingly industrious, and they did buy and sell and traffic one with another, that they might get gain. And they did work in all manner of ore, and they did make gold, and silver, and iron, and brass, and all manner of metals; and they did dig it out of the earth; wherefore, they did cast up mighty heaps of earth to get ore, of gold, and of silver, and of iron, and of copper. And they did work all manner of fine work” (Ether 10:7, 12, 22–23). The Jaredites “did make all manner of tools to till the earth, ... and they did make all manner of tools with which they did work their beasts. And they



Metal implements displayed at the National Anthropological Museum in La Paz, Baja California, predating the arrival of the Spanish.

did make all manner of weapons of war. And they did work all manner of work of exceedingly curious workmanship” (Ether 10:25–27).

Brass is an alloy of copper and zinc. And the ores of zinc, copper, silver, gold and iron—the named ores in the Book of Mormon—are all found in many locations in Baja California and have been mined from the time the Jesuit fathers first reached the peninsula in the late 1600s.

Clearly, the Book of Mormon people were not masons working all manner of stone work, but were metal workers making all manner of tools and machinery, and artisans making buildings with all manner of wood (timber), metal and sometimes cement.

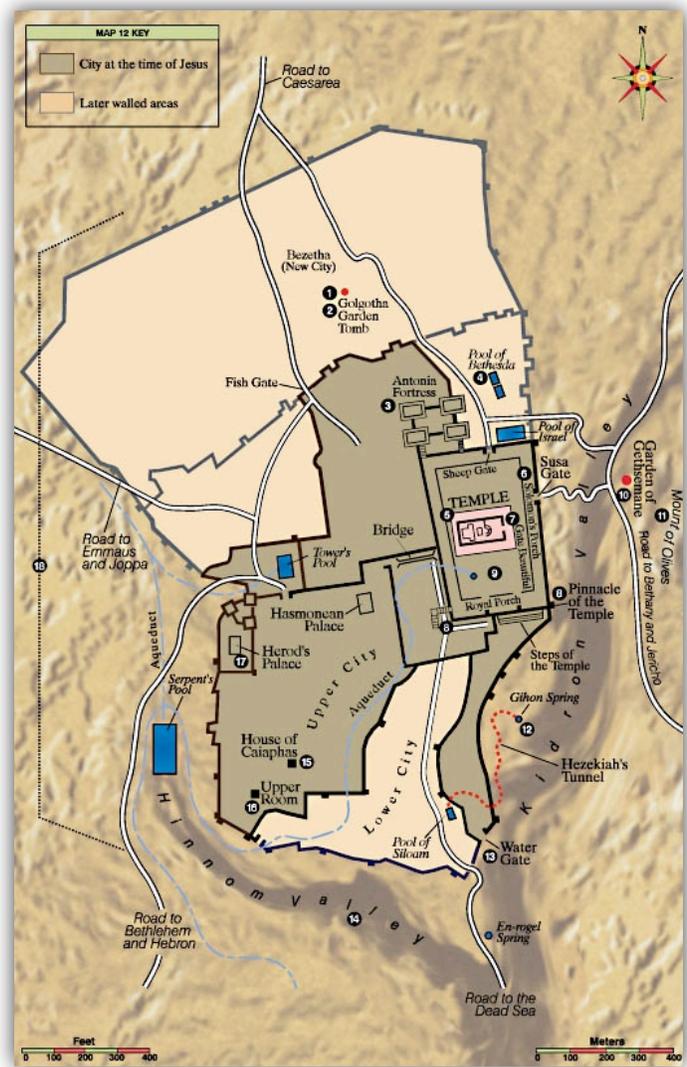
Great and Mighty Cities

The Book of Mormon account mentions the “great cities” of the Nephites numerous times (see, for example, Alma 16:9; 21:2; Hel. 1:18; 7:22; 8:5–6; 3 Ne. 8:25; 9:3–5, 9; 4 Ne. 1:8; Ether 10:20). Moroni in the Book of Ether notes that the Jaredites built many “mighty cities” (Ether 9:23). Along with the “great city” of Zarahemla, even newly built military cities, such as Moroni and Moronihah are referred to as “great” (3 Ne. 9:3–5). The phrases, “great city” and “mighty city” can be misleading. In older English the term “great” in this context refers to the role of the city and not its size. A great city would be a capital city (political, administrative, military or monarchical) or a city that functions as a central marketplace or in any significant role, even though its size could be rather small. The term “mighty” refers to a city’s power and strength as a fortified or defensible center and not its size. Even a small city can be well-fortified.

The phrases “great city” and “mighty city” cannot define or stipulate actual square miles, or number of buildings, the type of construction materials, population size or the age of settlement. Too often we apply modern interpretations of these phrases which causes confusion and misunderstanding of what would have been typical city sizes among the Book of Mormon record keepers. The question then becomes what does a “great city” mean in the Book of Mormon? The old-world city of Jerusalem is the only city mentioned in the Book of Mormon that we actually know the historic size and location. Four times Nephi refers to the Jerusalem of his youth as a “great city” (1 Ne. 1:4; 2:13; 10:3; 11:13). There is no doubt that Jerusalem was a significant city in the Biblical lands and could have

been comparable to the major Book of Mormon cities. Using Jerusalem as a reference, we can attempt to estimate the relative size of what appears to be a “capital city which was the city of Zarahemla” (Hel. 1:27). A “capital” city refers to a city’s political or central role as the seat of government and not its size.

Some 2,000 years ago the city of Jerusalem occupied a total area of some 1,600 feet by 1,200 feet or 45 acres (see Map 12, “Jerusalem at the Time of Jesus,” in the LDS Bible *Appendix*). It is difficult to calculate the number who could have lived in Jerusalem and surrounding area at that time, but some estimate less than 10,000 people. By today’s standards, ancient Jerusalem was not a large city but rather a small town. A modern North American suburb covering this same 45 acres would only house about 500 residents. And yet Zarahemla and Jerusalem were known as “great cities” because of their significance and not their size, even though they were probably the largest cities in their respective lands. According to the Book of Mormon account, the city of Zarahemla was surrounded by numerous town and villages, not unlike Jerusalem or early Salt Lake City.



“Jerusalem at the time of Jesus.” Bible Map 12 from the LDS scriptures.

Before the arrival of the automobile and more affordable transportation such as the trolley car, nearly all cities, including Salt Lake City or Jerusalem or Zarahemla, were never large in area because of the restrictive travel times from one location to another and especially to reduce the travel times within the city and from the city or town to the surrounding rural agricultural areas. These travel times and distances, constraining the size and scope of cities and towns, especially in the past, are

referred to by geographers as the “journey to work” principle. We should not look for remnants and evidence of Nephite cities similar to Los Angeles where size and scope are a function of modern automobile transportation. Instead we should look for cities comparable to compact Biblical and medieval towns that were highly constrained in size by walking distances. We can find no evidence in the Book of Mormon that the Nephites built expansive cities. They built “great cities,” not expansive cities. (See also, “Cities on the Land” in our topic article, *Jared, his Brother and their Friends: A Geographical Analysis of the Book of Ether*)

The Prophesied Desolation

Some have asked: Should there not be artifacts or remains that the Book of Mormon people left behind? Our response is: We agree, but only artifacts or remains of items that are actually mentioned in the Book of Mormon account and could have survived to the present-day. We should not be expected to find the types of buildings or other structures that the Nephites did not construct. The remains or artifacts of the Nephite structures may not still exist because of their perishable nature, or, more importantly, these structures were left “desolate” in keeping with the prophecies of the Lord to the Nephites, and to the people in Jerusalem, that if they did not repent and return unto him with full purpose of heart, “the places of [their] dwellings shall become desolate until the time of the fulfilling of the covenant to [their] fathers” (3 Ne. 10:6–7). A “desolated” place by definition is one that is caused to be “deserted of people” and “made empty or bare” by the devastation and obliteration of buildings, crops, trees and everything of substance, rendering the land “without sign of life” and “unfit for habitation.” The Book of Mormon record is clear that the Nephites and the Lamanites in the end did not repent and return to the Lord, and the prophesied desolation was fulfilled. Likewise, the people of the Biblical land of Jerusalem, because of wickedness, witnessed the equivalent “abomination of desolation” of their homes and towns by the Romans under Titus, including the temple they thought would not be destroyed (Deut. 28:52; Matt. 24:2; Mark 13:1–2; Luke 19:40–44; 21:20; D&C 45:18–21; JST–Matthew 2–21). According to the Lord, this “desolation” and the resulting devastation and abandonment of Jewish and Nephite places and dwellings would continue until “the fulfilling of the covenant to [their] fathers,” which began with the restoration of the gospel in 1830 (3 Ne. 10:7).

The abandoned Jaredite land was “called Desolation by the Nephites,” even though the land itself, its soil and its potential to grow vegetation and crops, was not “desolate, save it were for timber; but because of the greatness of the destruction of the people who had before inhabited the land it was called desolate” (Ether 7:6; Morm. 3:5; Morm. 4:2; Hel. 3:6). This land of Desolation, before it was reclaimed and restored by the Nephites, was



Example of a “desolated” town: Greenburg, Kansas, before and after a tornado struck, May 4, 2007.

“rendered desolate and without timber, because of the many inhabitants who had before inherited the land” (Hel. 3:5). Like the Nephite and Lamanite lands, this Jaredite land, in fulfillment of the prophecies of the Lord, was deserted of people and made empty or bare by the devastation and obliteration of buildings, crops, trees and everything of substance, rendering the land without sign of life and unfit for habitation. The Lord “had sworn in his wrath unto the brother of Jared, that whoso should possess this land of promise, from that time henceforth and forever, should serve him, the true and only God, or they should be swept off when the fulness of his wrath should come upon them” (Ether 2:8). In 121 B.C., king Limhi secretly sent a “small number of men” northwards, “to search for the land of Zarahemla,” and to obtain help for freeing his people from bondage. The search party was “lost in the wilderness for the space of many days, yet they were diligent, and found not the land of Zarahemla” but “discovered a land [the land Desolation] which was covered with bones of men, and of beasts, and was also covered with ruins of buildings of every kind, having discovered a land which had been peopled with a people [the Jaredites] who were as numerous as the hosts of Israel” (Mosiah 8:7–11). It is the destruction

and “sweeping off” of people and their possessions by decree of the Lord and ruination of structures that render a land “desolate.” A desolated land is not the same as a deserted land. A deserted land is abandoned but not devastated. And a desolate land is not a barren land that was never productive. A desolate land, unlike a barren land, can be resettled and reclaimed to its former productive state when the Lord so directs, for example, the once “desolated,” but now productive area we call the Holy Land. The Nephites and Lamanites refrained from settling this desolated northern land of the Jaredites until 55 B.C., for reasons that are not clear from the record—they may have been delayed by the Lord’s timetable, or possibly resettlement needed to wait until the land naturally recovered and became reforested to an advanced stage (see section on *Cement*, above).

Civilizations Swept Off the Land

The descendants of Lehi and the Jaredites were led to a “land of promise” (1 Ne. 2:20; 4:14; 5:5; 7:1,13). It was called a “land of promise” because the Lord “promised,” or covenanted with those that obtained it and kept the commandments that they would prosper, but if the people didn’t keep the commandments, he “promised,” or covenanted they would be “swept off” the land (Morm. 4:18; Ether 2:9). The Book of Mormon people enjoyed the fruits of a great civilization when they kept the covenants and were blessed with prosperity when they obeyed the commandments of the Lord. The Lord through the prophets clearly explained what would happen to the people if they didn’t observe these gospel principles:

[The Lord] had sworn in his wrath unto the brother of Jared, that whoso should possess this land of promise, from that time henceforth and forever, should serve him, the true and only God, or they should be swept off when the fulness of his wrath should come upon them.

And now, we can behold the decrees of God concerning this land, that it is a land of promise; and whatsoever nation shall possess it shall serve God, or they shall be swept off when the fulness of his wrath shall come upon them. And the fulness of his wrath cometh upon them when they are ripened in iniquity.

For behold, this is a land which is choice above all other lands; wherefore he that doth possess it shall serve God or shall be swept off; for it is the everlasting decree of God. And it is not until the fulness of iniquity among the children of the land, that they are swept off. (Ether 2:8–10)

The Book of Mormon account describes the destruction of multiple civilizations that were literally “swept off” the land because of their iniquity. It is difficult to say how much physical evidence would have survived this destruction process, coupled with the normal diminution of artifacts that would have happened over the 1600 years since the end of the Book of Mormon record.

Nephi saw in vision the destruction of their civilization, and that his people at the time of dissolution would go “forth in multitudes upon the face of the land” and “dwindle in unbelief” (1 Ne. 12, especially verses 20-22). Alma also prophesied to his son Helaman of the great destruction and “cursing” that awaited not only the land but the people if they didn’t repent:

And these are the words: Behold, I perceive that this very people, the Nephites, according to the spirit of revelation which is in me, in four hundred years from the time that Jesus Christ shall manifest himself unto them, shall dwindle in unbelief.

Yea, and then shall they see wars and pestilences, yea, famines and bloodshed, even until the people of Nephi shall become extinct—

Yea, and this because they shall dwindle in unbelief and fall into the works of darkness, and lasciviousness, and all manner of iniquities; yea, I say unto you, that because they shall sin against so great light and knowledge, yea, I say unto you, that from that day, even the fourth generation shall not all pass away before this great iniquity shall come.

...

And now it came to pass that after Alma had said these things to Helaman, he blessed him, and also his other sons; and he also blessed the earth for the righteous’ sake.

And he said: Thus saith the Lord God—Cursed shall be the land, yea, this land, unto every nation, kindred, tongue, and people, unto destruction, which do wickedly, when they are fully ripe; and as I have said so shall it be; for this is the cursing and the blessing of God upon the land, for the Lord cannot look upon sin with the least degree of allowance. (Alma 45:10–12, 15–16).

We should not forget that there was complete destruction of their civilizations and nearly complete decimation of people both at the end of the Jaredite record as well as the end of the Nephite account. It was prophesied that the lands of both groups would become “cursed” and destroyed and the inhabitants would be “swept off” the land (Alma 37:28, 31; 45:16; Ether 11:6). The prophecies of the Lord declared, and the record confirms, that this sweeping destruction and annihilation included not only the people but their cities and the

buildings within, similar to the Jews as a people, and their temple and other structures, being swept off the land of Jerusalem in A.D. 70 (3 Ne. 10:7).

The descendants of the Book of Mormon people were not unlike the descendants of the children of Israel who were scattered and driven from their Biblical homeland (see Jacob 5). We believe the Book of Mormon record is correct when it states that the people were swept off their homelands, and we believe that homeland was in Baja California. We suggest the surviving Lamanites and Nephites scattered primarily over the area of western North America (Oasis-America) and their descendants became a people such as the Hopis, Aztecs and other linguistically related groups. These groups continued to build houses of timber and cement (adobe) and lived in tents.

Because the Book of Mormon people built humble structures of wood and cement, all of which would have easily been destroyed by natural disasters, leaving little or no evidence of their civilization, the question then becomes: What should we expect to find after the Lord has allowed the people to be swept off the land, their civilization destroyed and the land cursed?

The Hopi and Aztec people

The Hopi people, living in the northeast corner of Arizona, claim their ancestors came from a “red city,” located “where the rocks and earth are red,” somewhere “in the far southwest” of their present home (Gary A. David, *The Orion Zone*, 214-17). The name Zarahemla means “red city” (Hugh Nibley, *Teachings of the Book of Mormon, Part One*, 340). The landscape of our proposed land of Zarahemla is red earth and rocks. The Aztecs of Mexico and Central America claim their ancestors came from an area northwest of central Mexico, near the southwest United States, called Aztlán. Some claim that Aztlán means “place of the white heron [egret or white-faced ibis]” (see, *Wikipedia*, Aztlán). Baja California is a breeding ground of the white heron. These two relative directions—southwest of northern Arizona and northwest of Mexico City—triangulate to the area of southern California and northern Baja California, which is the expected location and travel direction of a people who would have left the Baja California peninsula as they were being “swept off” the land.

What Should We Expect To Find?

We have often stated that the gold plates taken from the ground by Joseph Smith after being deposited there by Moroni are the best archaeological evidence for the Book of Mormon. This buried record, with its “correct” translation, is valuable “archeological

evidence unearthed from the past” because it has allowed us to match Book of Mormon places and details to actual locations in Baja California, and to provide this analysis of the structures built by the Book of Mormon people. The translation of the Book of Mormon came by the gift and power of God, and we have found the book's numerous geographical details to be correctly recorded, and in harmony with existing topographical features on the earth. The desire to find supportive or verifiable Book of Mormon evidence on the land and in the ground parallels the challenges faced by those seeking collaborative evidence for the location of Biblical places. The lands of the Bible, after many years of archaeological investigation, have yielded only a few items that link to the Biblical record, especially during the hundreds of years the children of Israel were in Egypt. Scholars have found that geographical confirmation of Biblical locations must precede supportive evidence from other disciplines, including archaeological discoveries. It stands to reason that this would be the case with Book of Mormon lands. For those interested in this topic, we would recommend an article on this subject: *“Historic Archaeology and the Geographic Imperative,”* by John A. Tvedtnes. A link to this article is provided on our web site.

We trust our work on the geography of the Book of Mormon lands will help pinpoint potential locations for finding Book of Mormon artifacts rather than casting a wide research net over the total area of Baja California, a task that is not feasible nor cost-effective. But if remnants of ancient buildings were found in Baja California, which unique features from the Book of Mormon record would we use to identify the remains as Nephite buildings and not structures built by another culture? Indeed, it would be essential to assemble a list of features from the Book of Mormon account to positively identify a Nephite building, similar to the unique details in dental records that help identify the remains of a specific person rather than merely identifying the remains as human. Creating an inventory of these essential features is one of the purposes of this analysis.

Another objective is to document and stress the absence of stone buildings within this inventory. Certainly the record keepers would have mentioned stone as a construction material if stone had been a significant component of their buildings. The record keepers were not reluctant to itemize timber, cement, and metals of many kinds such as iron, steel, copper, brass, gold, silver, ziff and other precious ores when detailing the construction of their buildings, but never stone. The city of Zarahemla was burned at the time of Christ's crucifixion (3 Ne. 8:8, 24; 9:3). Near the end of the Jaredite record, Shiz, the brother of Lib, “pursued after Coriantumr,” his nemesis, and “did overthrow many cities, and he did slay both women and children, and he did burn the cities” (Ether 14:17). It is difficult to burn

cities consisting of stone buildings. We assume these Jaredite structures were mainly made of wood, as were the Nephite buildings.

But what if there are not sufficient unique details in the Book of Mormon record to ever clearly identify a Nephite structure, and we are left with only the numerous geographical features in the Book of Mormon account that match a specific location on the surface of the earth such as Baja California? And if we did stumble upon ruins of a Nephite building, would details of the building tell us, through some unanticipated identifying marks, it was indeed a Nephite structure? It would be delightful to unearth a sign declaring, “Welcome to the City of Zarahemla.” But could we even decipher or read the writing on such a sign if we found one? And so again we ask the simple but essential question: If you saw a Nephite



Deteriorating adobe building in San Ignacio, Baja California, with plastered cement on the outside walls.

building, what would you expect to find? It is to be hoped that this inventory and analysis of Book of Mormon structures could serve as a standard for answering this question.

Readers wishing to pursue the topic of archaeology and the Book of Mormon are strongly urged to read two chapters on the subject by Hugh Nibley, “*The Nature of Book of Mormon Society*” and “*The Archaeological Problem*,” published in his work, *An Approach to*

the Book of Mormon, and an article in the *Ensign*, “*Ancient Temples: What do they signify?*” (September 1972, 47). Nibley spells out what we should expect to find in the way of buried artifacts, and especially what we should not presume to find, simply because many of the anticipated items are not part of the society and culture of the Book of Mormon people. His insights and perspectives have enlightened our understanding of Book of Mormon geography. Links to these articles are provided on our web site.

We know the Book of Mormon to be a true and correct account of the Nephite, Lamanite and Jaredite cultures and civilizations. We also believe that the most important contribution of the Book of Mormon is not its geography or its cultural details, but its clear and masterful contributions to our understanding of gospel doctrines of salvation, correct principles of behavior, and the consequences of unrighteous choices.

We conclude our geographical analysis of Book of Mormon structures by reiterating and reemphasizing the prophetic declaration of the Lord to the people of *Jerusalem* and to the people of the *Book of Mormon* at the time of his crucifixion that their dwelling places would become desolate. A “desolated” place, by definition, as we have stated, is one that is caused to be “deserted of people” and “made empty or bare” by the devastation and obliteration of buildings, crops, trees and everything of substance, rendering the land “without sign of life” and “unfit for habitation.” Jerusalem was destroyed and leveled and the inhabitants swept off in fulfillment of this prophecy. Would not the prophesied desolation also have utterly destroyed Zarahemla and all the other Book of Mormon dwelling places, with no buildings left standing and the places abandoned? These sobering and prophetic words should temper any search for Book of Mormon ruins:

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

... yea, O ye people of the house of Israel, ye that dwell at Jerusalem, as ye that have fallen; yea, how oft would I have gathered you as a hen gathereth her chickens, and ye would not.

O ye house of Israel whom I have spared, how oft will I gather you as a hen gathereth her chickens under her wings, if ye will repent and return unto me with full purpose of heart.

But if not, O house of Israel, the places of your dwellings shall become desolate until the time of the fulfilling of the covenant to your fathers. (3 Ne. 10:4–7)

And thus it was.

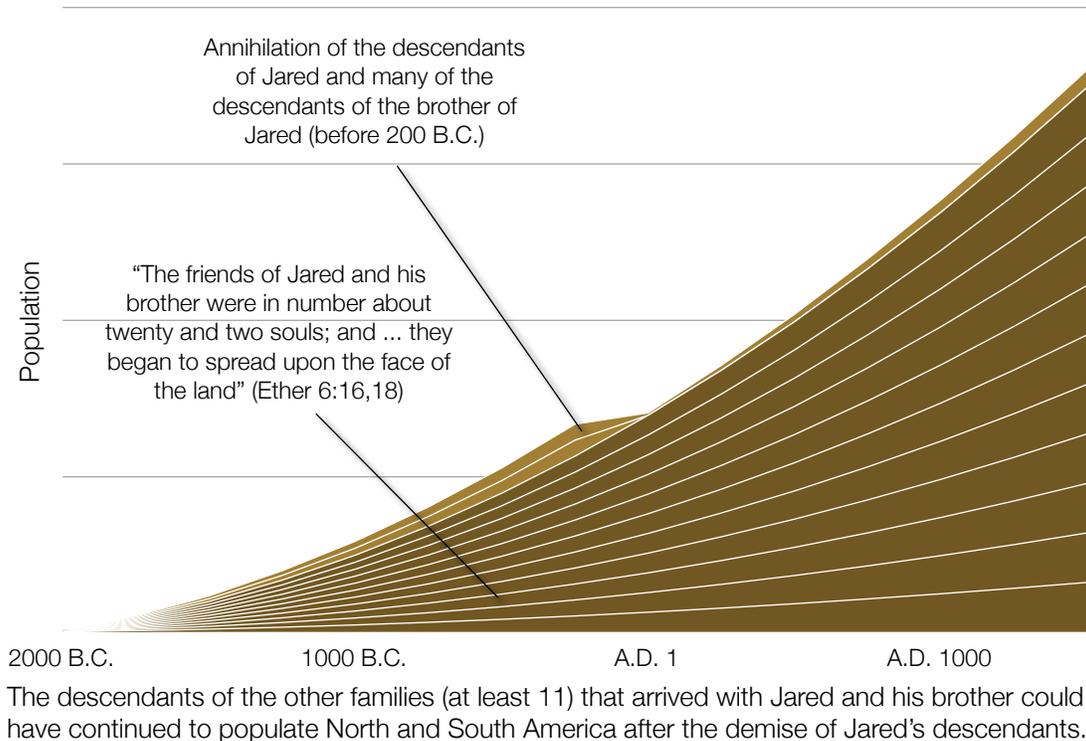
The Ancient Ruins of Meso-America

We pose a question: Where do the still-standing ancient structures of Meso-America fit into this divinely declared and divinely fulfilled prophecy that Nephite dwelling places would become completely desolate, that is, destroyed and obliterated as were the dwelling places in the land of Jerusalem?

We are often asked: What do your geographical findings mean to the many archaeological discoveries in Meso-America? And we respond: These intriguing and awe-inspiring archaeological ruins and findings in Meso-America deserve to be investigated, in their own right, but not because they sit on the sites where the Book of Mormon story took place or because they were built by Book of Mormon people during the years of their recorded history. As we have noted, the Book of Mormon record describes a people who built humble homes, cities, temples, and synagogues. We need not look to areas of impressive and elaborate stone ruins such as have been discovered in Meso-America to find the Nephite and Lamanite locations mentioned in the Book of Mormon record. We suggest that these imposing structures were built by a feudal or slave-based civilization, as has happened throughout history, and not the people directly associated with the Book of Mormon record keepers. Certainly there appears to be nothing recorded in the Book of Mormon record, as shown by the above analysis, that describes or matches these imposing structures in construction materials, building shapes or design details or their intended purpose. We should be quick to note, however, that those who built these structures in Meso-America could well be estranged cousins or distant descendants of the Book of Mormon people, not only Lamanites and Nephites but also the many Jaredite families who came to this continent.

The numerous families (at least 11) of the friends of Jared and his brother, like the descendants of the brother of Jared, “began to spread upon the face of the land, and to multiply and to till the earth; and they did wax strong in the land” (Ether 6:18). It would appear that all these families separated themselves from the descendants of Jared. They are never mentioned again in the Book of Ether, and yet the family of Jared is only one out of minimum of 13 first-generation families arriving in the promised land. As a consequence, we never learn the fate of the descendants of the brother of Jared nor the descendants of the many “friends.” Did they suffer a similar end as the descendants of Jared, with a complete annihilation and destruction of their civilizations at locations similar to hill Ramah? Maybe only a few families completely perished. We do not know, because we have no

record of their history. We strongly suspect that many of them eventually scattered to distant locations throughout North and South America. Their descendants today could be among the millions of indigenous people now living in widespread locations on these two continents, most of whom have cultures, languages and DNA that do not seem to match the cultures, languages and DNA one might expect if they were descendants of the Lamanites and Nephites. It is our opinion that this is the case. The record of Ether certainly provides a credible background for such a scenario to unfold and evolve over time.



In the past, attempts have been made to link the Nephite and Lamanite cultures of the Book of Mormon to all or most of the indigenous people of North and South America. A close reading of the Jaredite history, as we outline above, cautions strongly against attempting to explain how all indigenous groups—and ancient civilizations—in the New World are descendants of the Lamanites and Nephites. Instead, the Jaredite story provides a compelling link to numerous Jaredite families and their friends who scattered and migrated across the western hemisphere, including, of course, Meso-America. The implications and consequences of these wide-ranging Jaredite migrations prompt many questions. We encourage anyone interested in the subject of Book of Mormon migrations to read our topic article, *Jared, his Brother and their Friends—A Geographical Analysis of the Book of Ether*. We have attempted in our writings to show that the Lamanite and

Nephite people were confined primarily to the peninsula of Baja California and only later, after the near annihilation of their population, expanded to the surrounding areas. The Jaredite migrations in North America, on the other hand, appear to have started at least 1,500 years earlier, with numerous families quickly scattering and multiplying throughout the hemisphere and creating a larger and a more-widespread imprint on the land than the Lamanites and Nephites. It is to be hoped that we have provided a groundbreaking framework, using our geographical analysis of the Book of Ether, that will allow us and others to ponder, evaluate and attempt to fill-in the missing pieces of this far-reaching puzzle.

Did the Lamanites Build the Large Stone Structures in Meso-America?

Some of our readers ask: If the larger and more technologically advanced structures in Meso-America do not match the structures or building capabilities of the Nephites, as outlined in the Book of Mormon record, then it could follow that they were built by the descendants of the Lamanites who may have had more advanced building skills than the Nephites. Does the Book of Mormon record provide any support for this view?

And we respond: We do not have a Lamanite record, only the perspective of the Nephite record. Alma stated that the Lamanites did not keep records:

And it came to pass that whosoever would not believe in the tradition of the Lamanites, but believed those records which were brought out of the land of Jerusalem, and also in the tradition of their fathers, which were correct, who believed in the commandments of God and kept them, were called the Nephites, or the people of Nephi, from that time forth—

And it is they who have kept the records which are true of their people, and also of the people of the Lamanites. (Alma 3:11–12; see also, Enos 1:16; Mosiah 10:16)

Mormon states that the Lamanites did not revere the written records and wanted to destroy them. Thus Mormon hid the Nephite records at the end of his life, so they would not be destroyed by the Lamanites:

And it came to pass that when we had gathered in all our people in one to the land of Cumorah, behold I, Mormon, began to be old; and knowing it to be the last struggle of my people, and having been commanded of the Lord that I should not suffer the records which had been handed down by our fathers, which were sacred, to fall into the hands of the Lamanites, (for the Lamanites would destroy them) therefore I made this record out of the plates of Nephi, and hid up in the hill Cumorah all the records which had been entrusted to me by the hand of the Lord, save it were these few plates which I gave unto my son Moroni. (Morm. 6:6).

Nephi records that Laman and Lemuel and the sons of Ishmael scoffed and murmured at his attempting to build a ship:

And when my brethren saw that I was about to build a ship, they began to murmur against me, saying: Our brother is a fool, for he thinketh that he can build a ship; yea, and he also thinketh that he can cross these great waters.

And thus my brethren did complain against me, and were desirous that they might not labor, for they did not believe that I could build a ship; neither would they believe that I was instructed of the Lord.

And now it came to pass that I, Nephi, was exceedingly sorrowful because of the hardness of their hearts; and now when they saw that I began to be sorrowful they were glad in their hearts, insomuch that they did rejoice over me, saying: We knew that ye could not construct a ship, for we knew that ye were lacking in judgment; wherefore, thou canst not accomplish so great a work. (1 Ne. 17:17–19)

After his people were forced to separate from the families of Laman, Lemuel and the sons of Ishmael, Nephi took the building knowledge given him by the Lord and taught it to his descendants:

Now I, Nephi, did not work the timbers after the manner which was learned by men, neither did I build the ship after the manner of men; but I did build it after the manner which the Lord had shown unto me; wherefore, it was not after the manner of men. (1 Ne. 18:2)

And I did teach my people to build buildings, and to work in all manner of wood, and of iron, and of copper, and of brass, and of steel, and of gold, and of silver, and of precious ores, which were in great abundance.

And I, Nephi, did build a temple; and I did construct it after the manner of the temple of Solomon save it were not built of so many precious things; for they were not to be found upon the land, wherefore, it could not be built like unto Solomon's temple. But the manner of the construction was like unto the temple of Solomon; and the workmanship thereof was exceedingly fine. (2 Ne. 5:15–16)

Mormon records that many of the Lamanites lived in tents and led an idle life. Three large areas of Lamanite tent dwelling stretched for hundreds of miles along the western seashore of the two major lands of Nephi and Zarahemla:

Now, the more idle part of the Lamanites lived in the wilderness, and dwelt in tents; and they were spread through the wilderness on the west, in the land of Nephi; yea, and also on the west of the land of Zarahemla, in the borders by the seashore, and on the west in the land of Nephi, in the place of their fathers' first inheritance, and thus bordering along by the seashore. (Alma 22:28)

Enos recorded that the Lamanites' skill was in constructing weapons of war, such as the bow, cimeter and ax:

And I bear record that the people of Nephi did seek diligently to restore the Lamanites unto the true faith in God. But our labors were vain; their hatred was fixed, and they

were led by their evil nature that they became wild, and ferocious, and a blood-thirsty people, full of idolatry and filthiness; feeding upon beasts of prey; dwelling in tents, and wandering about in the wilderness with a short skin girdle about their loins and their heads shaven; and their skill was in the bow, and in the cimeter, and the ax. And many of them did eat nothing save it was raw meat; and they were continually seeking to destroy us. (Enos 1:20; see also, Alma 3:5).

Mormon records that the Lamanites in the land of Nephi possessed skills, such as tending flocks and preparing animals:

And they said unto him: Behold, he [Ammon, a Nephite] is feeding thy horses. Now the [Lamanite] king had commanded his servants, previous to the time of the watering of their flocks, that they should prepare his horses and chariots, and conduct him forth to the land of Nephi; for there had been a great feast appointed at the land of Nephi, by the father of Lamoni, who was king over all the land. (Alma 18:9; see also, Alma 18:10, 12)

As forced laborers, the Lamanites appear to have learned several construction skills from the Nephites:

And it came to pass that after the Lamanites had finished burying their dead and also the dead of the Nephites, they were marched back into the land Bountiful; and Teancum, by the orders of Moroni, caused that they [their Lamanite prisoners] should commence laboring in digging a ditch round about the land, or the city, Bountiful.

And he caused that they should build a breastwork of timbers upon the inner bank of the ditch; and they cast up dirt out of the ditch against the breastwork of timbers; and thus they did cause the Lamanites to labor until they had encircled the city of Bountiful round about with a strong wall of timbers and earth, to an exceeding height.

And this city became an exceeding stronghold ever after; and in this city they did guard the prisoners of the Lamanites; yea, even within a wall which they had caused them to build with their own hands. Now Moroni was compelled to cause the Lamanites to labor, because it was easy to guard them while at their labor; and he desired all his forces when he should make an attack upon the Lamanites. (Alma 53:3–5)

We have no way of knowing if the descendants of the Lamanites, after the end of the Book of Mormon record, acquired the ability to build with technologies beyond those possessed by the Nephites. Certainly, there is no evidence in the record to suggest they had more advanced skills before that time.

The Pictographs and Petroglyphs of Baja California

The peninsula of Baja California has the largest collection of pictographs and petroglyphs in the world. Scattered over 700 locations, these historic rock paintings are protected under the aegis and sponsorship of the United Nations (UNESCO). Researchers find these numerous rock paintings curious but nearly impossible to interpret in meaning and origin. But who were these painters? We have only begun to review the pictographs and petroglyphs of Baja California with reference to the Book of Mormon record, but here are some preliminary thoughts:

We suggest that not all the Book of Mormon people had the ability nor the necessary means to read and write. This skill appears to have been acquired by a select few (1 Ne. 1:1; Enos 1:1; Mosiah 1:2–8; 9:1). Because of this, we suggest that not all Book of Mormon people had convenient access to the written record but were orally taught gospel principles and their history (Alma 23:5; 26:29; 30:53; 3 Ne. 26:8; Moro. 7:1). This was not unlike the situation in the world before Gutenberg invented the printing press, and even then it was hundreds of years later, in the early 1800s, when most people could read and write and had access to libraries. Even the people of Zarahemla (the Mulekites) dwindled in their understanding and language because “they had brought no records with them” (Omni



Petroglyphs in the Great Mural Region of the Sierra de San Francisco in central Baja California, an UNESCO World Heritage site.

1:17); and their history was provided by Zarahemla, “according to his memory” (Omni 1:18). The record on the brass plates, brought at great effort from Jerusalem, was the means that “enlarged the memory of this people, yea, and convinced many of the error of their ways, and brought them to the knowledge of their God unto the salvation of their souls” (Alma 37:8). Without the brass plates it was “not possible that our father, Lehi, could have remembered all these things, to have taught them to his children, except it were for the help of these plates” (Mosiah 1:4). Father Lehi was “taught in the language of the Egyptians therefore he could read these engravings, and teach them to his children, that thereby they could teach them to their children, and so fulfilling the commandments of God, even down to this present time” (Mosiah 1:4).



Petroglyphs in the Great Mural Region of the Sierra de San Francisco in central Baja California, an UNESCO World Heritage site.

Because only a few people were record keepers, we suspect that others would have attempted to record and preserve cultural and historical events in mediums such as painting. The pictographs and petroglyphs in Baja California portray a few consistent elements. Many of the paintings depict two groups in the same scene, represented by red and black figures. This could correlate with the two main groups in the Book of Mormon, the Nephites and the Lamanites. The pictures also depict scenes of fighting and hunting, activities frequently described in the Book of Mormon record.

The most representative and best-known of these paintings are found in the extensive and rugged wilderness area (Sierra de San Francisco) on the north and eastern borders of our proposed land of Zarahemla. This is the same kind of mountainous and secluded wilderness described in the Book of Mormon as the location of the “Gadianton robbers, who dwelt upon the mountains,” and infested “the land; for so strong were their holds and their secret places that the people could not overpower them; therefore they did commit many murders, and did do much slaughter among the people” (3 Ne. 1:27). This wilderness hiding place of the Gadianton robbers, in the land of Zarahemla, “was called Hermounts; and it was that part of the wilderness which was infested by wild and ravenous beasts” (Alma 2:37). In our allocation of Book of Mormon lands, the wilderness of Hermounts falls precisely where there is a significant concentration of pictographs and petroglyphs.

We recognize that others could have occupied these wilderness areas after the Nephite and Lamanite civilizations were destroyed, and these later inhabitants may have been the people who created these pictographs and petroglyphs. At this time, we can only ponder the meaning and origin of these paintings and their possible relationship to the people of the Book of Mormon, but the topic appears to be a potential area for investigation. This vast collection of rock paintings, extending along the 800-mile length of Baja California, provides tangible archeological evidence for a sizable pre-Spanish civilization on the peninsula. These 700 sites, found over a wide-ranging area, are not the work of a small, incidental group of people. It is also striking that the greatest concentration of paintings centers on an area in central Baja California we identify as the land of Zarahemla.



Major regions (orange) of pictographs and petroglyphs in central Baja California.

Inventory and Plausibility of Identification

To declare an ancient building a Nephite structure, the remains of that building would need to match some identifying features that are recorded in the Book of Mormon text. The following chart is a complete inventory of all the structures in the Book of Mormon record and their associated features. The chart is grouped by location of the structure with notations on dimensions, building materials, relative size and the plausibility of finding and identifying the structure today, some 1600 years after the end of the Book of Mormon record.

In an attempt to calculate the plausibility of identifying a structure today, many years after it was built, we have assigned a weighted score to each structure. Structures made of stone (10) or dirt (8) are weighted the highest on the plausible scale. Objects made with wood (2), cement (4) and metal (6) would most likely have deteriorated over time, thus the lower scores. Items that are stated in the Book of Mormon (●) are given their full score, whereas materials that are only implied (○) are given half their score.

We have classified the size of each structure based on its probable dimensions. If the structure is measured in miles we have marked it as large (■), if the structure is measured in yards we have marked it as medium (■) and if a structure is measured in feet is marked as small (■). Each size is then assigned a relative score of 8, 5 and 2 respectively, with the assumption larger structures would be more likely found on the landscape today.

The plausibility scores from the materials and relative sizes are then added together to provide a total score that can be used to estimate the most identifiable structures that could remain after more than 1600 years. Structures with similar plausibility scores are then grouped together. Structures that score more than 20 should be the most probable to find and are highlighted in orange. Structures that scored between 10 and 20 may be possible to find and are highlighted in light orange. The other structures probably are not identifiable today because of the deterioration of the materials used and their smaller relative size and lack of distinguishing features.

Structure	Dimensions			Materials					Size	Plausibility
	Width	Height	Length	Stone	Dirt	Wood	Cement	Metal		
Score				10	8	2	4	6	8, 5, 2	
Land of Nephi										
City of Nephi Walls				○ 5					■ 8	13
Nephi's Temple	○	○	○			● 2		● 6	▬ 2	10
City of Nephi Prison				○ 5		○ 1			▬ 2	8
City of Middoni Prison				○ 5		○ 1			▬ 2	8
Noah's Palace						● 2			▬ 2	4
Nephi's Temple Tower		○				○ 1			▬ 2	3
Hill Shilom Tower		○				○ 1			▬ 2	3
Land of Zarahemla										
City Walls		○		○ 5					■ 8	13
Prison				○ 5		○ 1			▬ 2	8
Nephi's Garden					○ 4				▬ 2	6
Judgement Seat						○ 1			▬ 2	3
Temples						○ 1			▬ 2	3
Temple Walls	○	○	○			○ 1			▬ 2	3
King Benjamin's Tower		○				○ 1			▬ 2	3
Nephi's Tower		○				○ 1			▬ 2	3
Gates						○ 1			▬ 2	3
Land of Bountiful										
Ditches			○		● 8				■ 5	13
Temple						○ 1			▬ 2	3
All Lands										
Walls		○		● 10	● 8	● 2			■ 8	28
Roads	○	○	○	● 10	● 8				■ 8	26
Ditches			○		● 8				■ 5	13
Homes						● 2	● 4		▬ 2	8
Prisons				○ 5		○ 1			▬ 2	8
Buildings							● 4		▬ 2	6
Synagogues		○				○ 1			▬ 2	3
Temples						○ 1			▬ 2	3
Towers		○				○ 1			▬ 2	3

Note that walls (28), roads (26) and ditches (13), all made with durable materials, placed the highest on the scale, indicating that these features have the highest probability of being identified today. Thus the best one could hope for is to identify roads, ditches and stone walls. And, not unexpectedly, remnants of ancient walls, roads and ditch lines can be identified in Baja California, especially in the areas we propose as Book of Mormon lands, such as the land of Zarahemla.

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