

DIGGING INTO THE BOOK

Our Changing Understanding of Ancient America and I



Illustrated by Richard Hull



of

MORMON



Its Scripture

By John L. Sorenson

INTRODUCTION

Within the past several decades, professional studies in American archaeology, geography, culture, and language have provided an enormous amount of information of great interest to readers and believers of the Book of Mormon—information that earlier students of the book may not have guessed even existed. The quality and quantity of specialized studies relating to the Book of Mormon are so wide and deep today that no single person can possibly keep up on all aspects of that scholarship.

Indeed, in the past fifty years, much of what earlier generations thought about pre-Columbian American civilizations has been superseded. The sciences that study ancient civilizations have undergone significant changes. In the early decades of this century, science was still thought of as the search for and discovery of permanent and infallible truth. Today, scientists and philosophers admit the nature of their enterprise requires that they regularly reinterpret their theories and data.¹ Karl Popper's view of science as "tentative forever"² has become widely accepted. So even though perhaps a thousand times as much information now exists about the early cultures of America as was available only half a century ago, nowadays the best scholars are far less dogmatic in picturing what happened in the pre-European New World.

Changes have also occurred in some ideas Latter-day Saints have had of the Book of Mormon. Our faith in the saving principles taught by the prophets from Nephi to Moroni has not changed; if anything, it has grown. But in considering scripture as an ancient document, the careful student is now aware that we have much more than we had

suspected. Starting with M. Wells Jakeman, Hugh Nibley, and Sydney B. Sperry, the growing community of LDS researchers began in the late 1940s to uncover some of these details.³ This change of perspective—of seeing new possibilities—is exemplified by John W. Welch's discovery a mere fifteen years ago that the Near Eastern literary form called chiasmus lay hidden in the Book of Mormon, unrecognized by its readers for almost 140 years after its first publication in 1830.⁴ In recent years, other workers have been finding unsuspected facts, patterns, and implications in the Book of Mormon that had been overlooked in an earlier day.

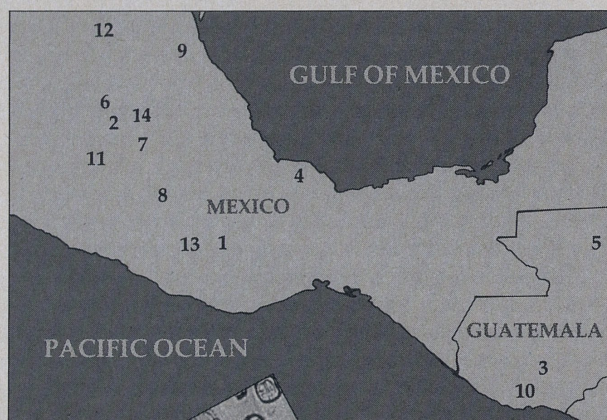
Many Latter-day Saints have not had access to sources which communicate how recent research has changed our understanding of the Book of Mormon as an ancient document. Many also are unaware of some rather surprising new discoveries supporting the Book of Mormon which have been brought about by the advanced methods of science. The purpose of this article and the one to follow is to sketch a few vivid examples of changes in how some Latter-day Saint scholars view the Book of Mormon in the light of new theories and discoveries about the past. These articles are not intended to be an expression of official Church teachings, but on the basis of my own research and study, I have thought this new information to be worth consideration.

PART 1

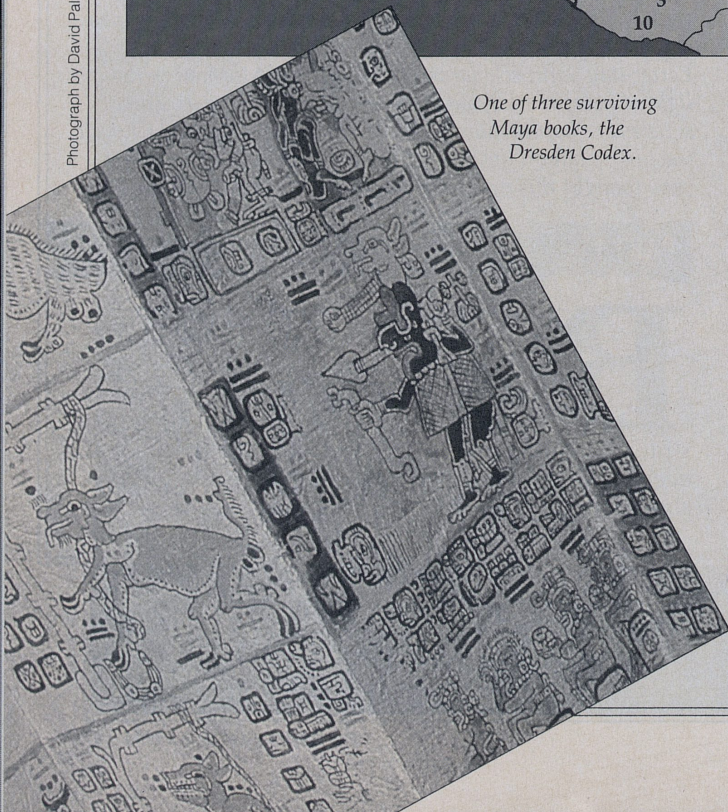
Book of Mormon archaeology has long been a favorite interest of Latter-day Saints. At least a modest crowd will appear any time a lecture is announced with both terms in the title. Unfortunately, some writers and lecturers have not been as well informed about the subject as they should. Neither are critics of the Church who

The Book of Mormon says much about a long tradition of written records in Nephite-Jaredite territory. In Mesoamerica, over a dozen writing systems are known, some of which extend back, on present evidence, to at least the beginning of the first millennium B.C. Yet nowhere else in all the Americas do we presently have reliable evidence that a genuine system of writing and a tradition of books existed before the arrival of the Europeans in the sixteenth century.

(Below) Outline map of part of Mesoamerica, including southern Mexico and western Guatemala near Golfo de Tehuantepec. Writing systems relating to this area are geographically identified here and represent the earliest-known manifestation of each particular system: (1) Monte Alban, Oaxaca, Mexico—about 800 B.C.; (2) Tlatilco, Mexico—no later than 500 B.C.; (3) Kaminaljuyu, Guatemala (Stela 10)—about 150 B.C.; (4) Central Veracruz, Mexico (Tres Zapotes)—about 30 B.C.; (5) Lowland Maya, Guatemala and Mexico—after A.D. 300; (6) Teotihuacan, Mexico—about A.D. 300; (7) Borgia group of codices, central Mexico—about A.D. 650; (8) Nu'ne (Mixteca Baja), Mexico—about A.D. 600; (9) Tajin, Veracruz, Mexico—A.D. 600; (10) Cotzumalhuapa, Guatemala—after A.D. 600; (11) Xochicalco, Morelos, Mexico—about A.D. 800; (12) Mixtec, Oaxaca-Guerrero, Mexico—after A.D. 700; (13) Toltec, central Mexico—about A.D. 950; and (14) Aztec, Mexico—after A.D. 1450.



One of three surviving Maya books, the Dresden Codex.



occasionally comment on the topic.

The issue is not one of intentions, beliefs, or testimony; it is one of scholarship. To compare the Book of Mormon with the findings of archaeology and related fields is a scholarly, intellectual activity. When anyone, Latter-day Saint or not, sets out to work in that domain, he must operate according to the rules which govern there.

The first essential is to determine the nature of the Book of Mormon and what parts of it can be appropriately compared with scholarly findings. Then we need to establish what archaeological scientists and other scholars actually know and what conditions limit their knowledge. Both sides of this equation should receive careful consideration before we can legitimately draw even the simplest conclusions.

One problem some Latter-day Saint writers and lecturers have had is confusing the actual text of the Book of Mormon with the traditional interpretation of it. For example, a commonly heard statement is that the Book of Mormon is "the history of the American Indians." This statement contains a number of unexamined assumptions—that the scripture is a history in the common sense—a systematic, chronological account of the main events in the past of a nation or territory; that "the" American Indians are a unitary population; and that the approximately one hundred pages of text containing historical and cultural material in the scripture could conceivably tell the entire history of a hemisphere. When unexamined assumptions like these are made, critics respond in kind, criticizing *not* the ancient text itself, but the assumptions we have made about it.

The result has been a body of information about the Book of Mormon troubled by irrelevant "evidence," undependable logic, and conflicting conclusions. Many comparisons made by Latter-day Saints have been ill-informed both in terms of scriptural analysis and archaeological facts. On the other hand, the few professional archaeologists who have attempted such comparisons have often been mistaken on two counts: (1) they have been naive about the Book of Mormon itself—what it says and what it does *not* say; and (2) they have not adequately considered the archaeological details from the right time periods and in the most likely areas of ancient America. In fact, it has only been in the past few years that enough research has been done to create a reliable, plausible picture of events and characteristics in the proper times and places.

Students of the Book of Mormon will do well to broaden their ways of thinking about the book by updating their facts. Some of the writings by B. H. Roberts, one of the sharpest intellects in the Church in his time, illustrate. In several writings, mainly done in 1922, he attempted to compare the Book of Mormon with a century-old romantic novel entitled *View of the Hebrews*, by New England minister Ethan Smith. Some critics had proposed that the Prophet

Joseph Smith had used Smith's novel as the basis for the Book of Mormon. So Elder Roberts surveyed both *View* and the scholarly literature of the day on early American peoples and cultures and compared them to the Book of Mormon.

Unfortunately, what was then assumed to be true about ancient American civilization has since proven to be based on incomplete, and in some cases inaccurate, information. In his studies, for example, Elder Roberts used the general idea which prevailed in his time that the Book of Mormon was a history of the *entire* Western Hemisphere. It can now be seen that on both counts (knowledge of the appropriate scholarly material and analysis of technical aspects of the Book of Mormon) some of his assumptions about the Book of Mormon were faulty.

Among the criticisms of the Book of Mormon by archaeologists, the two most widely circulated statements (the late Robert Wauchope's book and Michael Coe's article nearly a decade ago⁵) suffer from similar limitations. Both of these eminent scholars based their reactions to the Book of Mormon on the same unfortunate assumption that the Book of Mormon account is about events involving American Indians throughout the entire New World. Their conclusions were as flawed as those arrived at by some Latter-day Saints.

It is evident that if the Book of Mormon is to be compared as an ancient record with information from sources external to itself, the facts must be drawn from the appropriate times and places. For example, it would be useless to try shedding light on the circumstances surrounding the epistles of Paul by treating his writings as though they had come from Babylon at the time of the Jewish captivity. To compare the Book of Mormon with what archaeologists have learned about its historical setting in ancient America, we are equally obliged, to the extent that we can, to be clear about the wheres and whens of its events.

THE NEPHITE AND JAREDITE LANDS

Some readers feel that the Book of Mormon does not give enough information to construct a geography. Actually, there are numerous geographically-related statements in the book. When one looks carefully at these references, together with reasonable inferences that can be made from them, the book proves to be rich and very consistent in its information on this subject.

A substantive discussion of geography cannot be given in these limited pages. However, for at least the past forty years, many students of the subject who have studied it in depth have reached similar basic conclusions: (1) the events reported by Nephite and Jaredite scribes evidently covered only a *limited* territory in the New World "land of promise," and

(2) there is presently known only one location in the Western Hemisphere that seems qualify as that scene.⁶

These are very important points. For a long time, few people seemed to see any difficulty in setting the Book of Mormon in *all* of North and South America. The geography seemed so obvious—a continent northward and a continent southward, joined by a narrow isthmus. Eventually, however, accepting that view of the Book of Mormon lands became difficult in light of new information. For example, by the early twentieth-century, research had found that as many as 1,500 languages had been in use in the New World at the time of European discovery.⁷ And new knowledge about the process of language stability and change made it impossible to suppose that all those languages could have derived from the Hebrew presumed to be the speech of the Nephites and Lamanites. Archaeology also began revealing a bewildering diversity of cultures, reinforcing the idea that many groups had lived in the Americas.

As early as the turn of the century, a few Saints began to look more carefully at what the Book of Mormon itself said on this matter. They found statements there indicating that the scene for Jaredite and Nephite history was likely more limited than they had previously supposed. Then, in 1939, the Washburns published a detailed analysis of the geography in the Book of Mormon based strictly on its own statements and demonstrating the consistency of those statements. Since the publication of their work, *An Approach to the Study of Book of Mormon Geography*, analysts of the scripture have found still more data in the *Book of Mormon's own statements* suggesting that the immediate land covered by the book's events was probably only hundreds rather than thousands of miles long and wide.⁸

On the basis of my own research, I conclude with others that only one area qualifies in all respects—Mesoamerica. This is the name given by researchers of American civilizations to that portion of central and southern Mexico and northern Central America where the highest level of ancient cultural development in the hemisphere occurred. For example, the scripture says much about a long tradition of written records in Nephite-Jaredite territory. In Mesoamerica, over a dozen writing systems are known, some of which extend back, on present evidence, to at least the beginning of the first millennium B.C.⁹ Yet nowhere else in all the Americas do we presently have reliable evidence that a genuine system of writing and a tradition of books existed before the arrival of the Europeans in the sixteenth century. Also, we can identify in Mesoamerica almost all of the kinds of geographical and cultural features specified by the Book of Mormon—the presence (and absence) in particular relationships of mountains, basins, rivers, "waters," passes, "ups," "downs," "overs," ruined sites with dating that coincides with

the scripture, and so forth.¹⁰

Of course, placing the Book of Mormon lands within a limited region like Mesoamerica requires that we take a fresh look at some of the long-standing questions that have been of interest to Book of Mormon readers. For example, how did the plates of Nephi get from the final battlefield near the "narrow neck of land"¹¹ to where Joseph Smith obtained them in New York? Here the Book of Mormon sheds no light. One obvious possibility is that Moroni himself may have carried the records to New York during his thirty-six years of wandering between the extermination of the Nephites and when he last wrote on the plates. (See Morm. 6:6; Moro. 1:1–4; 10:1.) Or he may have taken them there as a resurrected being. We only know that, whatever the means, in 1827 the plates were in the "hill of considerable size" near young Joseph Smith's home at Palmyra, New York, where Moroni delivered the sacred record to him.

In many instances, once we see the likelihood of a limited scale for the Book of Mormon's geography, questions about language, culture, racial affiliations, and other "problems" that critics have raised about the scripture come into an entirely different perspective.

So, focusing on data primarily from the Mesoamerican area, let us now look at the Book of Mormon alongside the best information available on civilization and geography there.

THE NATURE OF THE RECORD

Another important new idea about the Book of Mormon is that it is not a history in the sense of the word often used today. Rather than being a narrative of what happened in a particular territory, it is like the Old Testament, primarily a family chronicle written by prophets under the Lord's inspiration. The Book of Mormon is thus similar in important respects to "lineage histories." This class of document provides selected information about the origin of the group, why it was chosen by deity, crucial events affecting its fate, the charter on which its system of power was based, and its relationships with other groups. A lineage typically uses this kind of historical account to define its own boundaries, reinforce its power, stabilize its social structure, and otherwise clarify *to its own members* who they are.

Most historical documents, written or oral, of ancient civilizations and tribes are of this kind.¹² They do not claim to tell comprehensively or systematically "what happened" throughout a territory. Indeed, the lineage may not have had exclusive control over a land (as was the case with Abraham). Frequently they constituted only part of a social mosaic, side by side with similar groups, either within or outside the formal nations which most of us consider the proper

subject of history.

The account of the patriarchal period in the Old Testament, for example, comes from the records of a certain lineage and thus contains primarily its key historical happenings and the great truths that its leaders received from God. It shows Abraham moving out of northern Mesopotamia and into Canaan, then Egypt—his family closely knit with other peoples and cultures who are mainly ignored in the record. Ur, Lot, Abimelech, Gomorrah, the "five kings," and Melchizedek are glimpsed in passing, but they are essentially part of the scenery, almost props on the stage to facilitate telling the account of how and why Israel obtained its place in the promised land.

Both the Nephite and Jaredite documents display these elements. Moroni, the last scribe of the lineage of Nephi, concluded and buried the record *not* because there was no more history being made around him. (See Morm. 8:1–9; Moro. 1:1–2.) Those happenings were simply not part of *his* group's history. (Of course, there were other, more important, reasons for finishing and sealing up the record. See Moro. 1:4; title page.) It is apparent, then, why Mormon's abridgement all but ignores the people of Zarahemla, or "Mulekites" as we have dubbed them, even though they were more numerous than the Nephites. (See Mosiah 25:2–3.) Neither did Ether give much attention to those usurping rulers, likely from a competing lineage, who imprisoned his ancestors and so kept them from their place on the throne; in fact, their names aren't even mentioned in the Book of Ether. (See Ether 10:30–31; 11:17–19.) To the people of Jared's lineage, those names were not important.

In significant ways, the burden of these ancient American records was about the fate of the central families who kept them. Others were sometimes mentioned, but only because they provided necessary scenery and furniture for the primary drama. Even centuries-long periods could be ignored, no doubt because little happened then which was considered crucial in determining the destiny of the descendants of Nephi or of Jared.

THE LIMITS OF ARCHAEOLOGY

Thus, the Book of Mormon accounts are not talking about nations in the modern sense. They are usually concerned with ruling lines. But ruling lines are nearly invisible to archaeology. And there's the rub. Neither the famous Hyksos dynasty in Bronze Age Egypt nor the much-discussed Toltec rulers of Mexico a millennium ago can be more than conjecturally matched with the ruins.¹³ The nature of archaeological, linguistic, and historical evidence now available on Mesoamerica makes it difficult to identify specific groups, like a possible Nephi

Archaeology has its own inherent limitations which force archaeologists to make plausible inferences based on limited, ambiguous data. We remain largely ignorant about much of ancient life simply because inference takes us so far from potsherds, stone fragments, and crumbled walls to reach beliefs, social structures, and feelings. Since at any given moment the archaeologists have uncovered only a minute fraction of all the evidences left in the ground, surprises continually await us about what was and was not present.

Photograph by Donald E. Miller

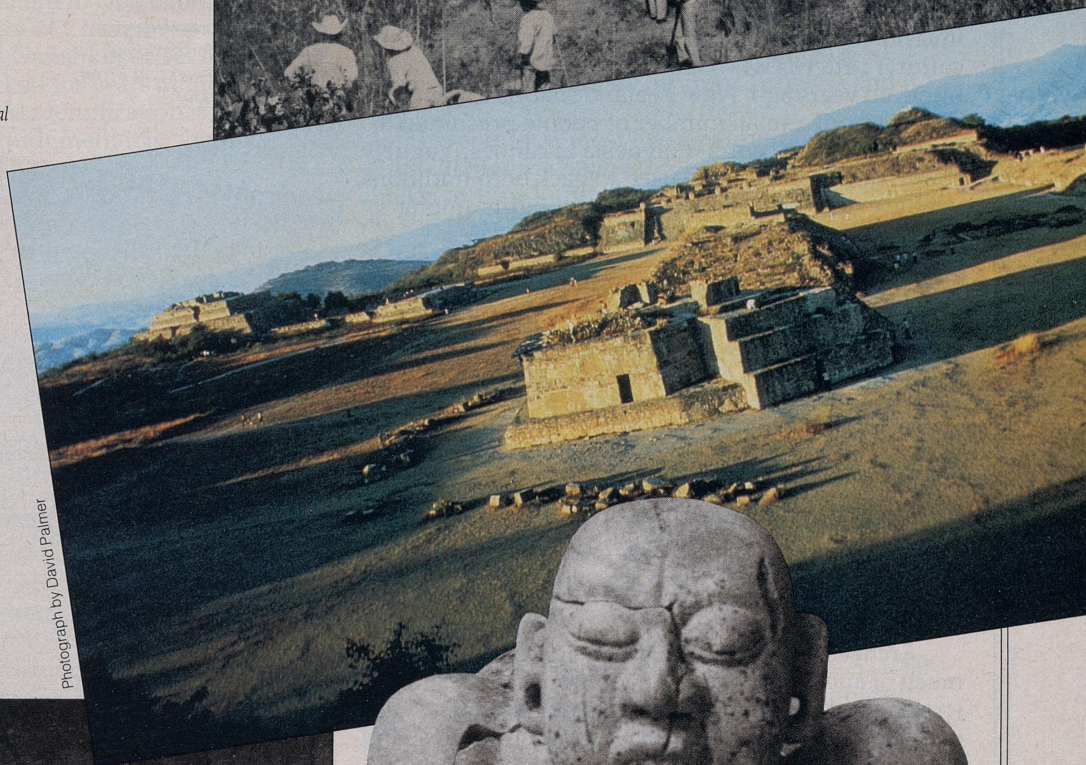


(Top) This photograph of an archaeological "dig" on the Guatemala-Mexico border shows the difficulty of turning a site into reliable information.

(Middle) Photograph of ruins at Monte Alban, Oaxaca, Mexico, shows what can be the end result of archaeological work. The building in the foreground dates to around the time of Christ, and because it contains sighting passages aligned to critical positions of the sun and moon, the building is said to have been an observatory. Its real function remains obscure.

(Bottom left) This photograph demonstrates the exacting identification procedures associated with archaeological work and shows crushed contents on the floor of a collapsed tomb at a site near the Guatemala-Mexico border.

(Bottom right) The end result of broken contents from sites can be a restored object such as this two-piece effigy vessel from a collapsed tomb in the general site of the photograph at left.



Photograph by David Palmer



Photograph by Donald E. Miller



lineage, let alone individuals. This problem touches any historical research on ancient civilizations. Experts have not settled their disputes about the identity of the Israelite invaders around Jericho in Joshua's time and earlier.¹⁴ No monument near the Jordan says "Israel crossed here"; nor will a sign be found anywhere in Egypt identifying the land of Goshen. Instead, we are forced to look for patterns of custom or settlement which seem to be related to something mentioned in the scripture.

Yet an interpretation (e.g., "The new type of pottery jars observed in this stratum must represent the incoming Hebrews") does not spring from "the facts" of its own accord. Scholars make a case, a proposition, that a certain document or tradition agrees with the material remains. Other scholars may not be convinced. In fact, they may attack the hypothesis abusively. The *Popol Vuh*, a lineage history from highland Guatemala, reports the invasion of a smallish body of warriors with Mexican cultural patterns who came to rule the land about six hundred years ago. New Zealand Maoris claim descent from a small number of people presumed to have come from central Polynesia in canoes. Vaguely confirmatory data can be used to back both traditions; yet the evidence is slippery, and dogfights among scholars regularly erupt on this kind of issue.

Suppose, therefore, that we are able to identify a series of striking parallels between what the Book of Mormon tells us about ancient life in Nephite lands and what current research tells us of Mesoamerican ways. We'd then be on precisely the same ground—*plausibility*—as those who treat nonscriptural historical issues.

Is plausibility an acceptable linkage between the Book of Mormon text and the material remains? Certainly. It is the same connection that prominent archaeologists have been making between other texts and their contexts for years, especially the great work that has been done in recent years relating to biblical history.

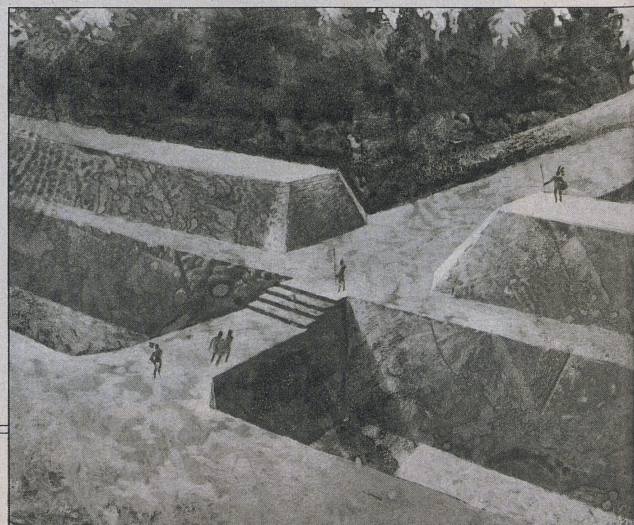
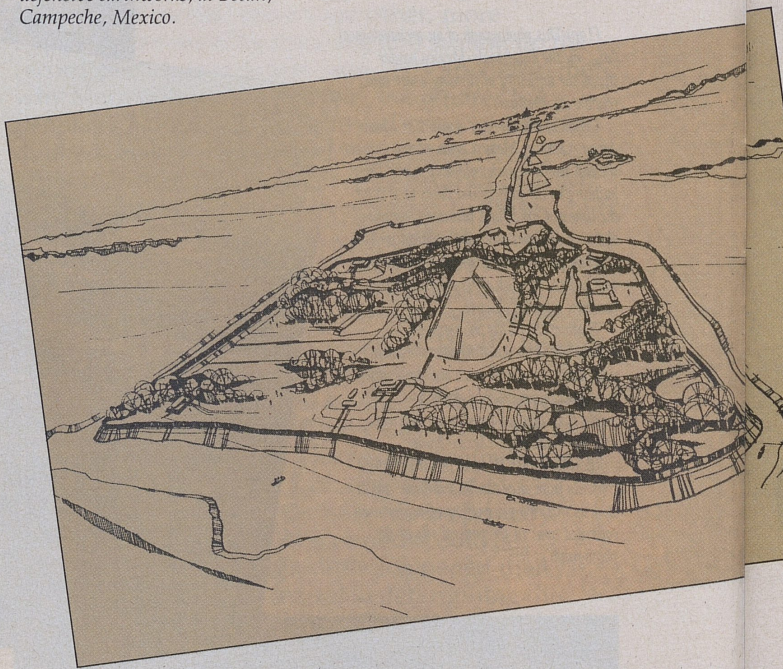
Archaeologists remain largely ignorant about much of ancient life simply because inference must be stretched so far from potsherds, stone fragments, and crumbled walls to reach beliefs, social structures, and personalities. And since at any given moment the archaeologists have uncovered only a minute fraction of all the evidence which had been left in the ground, surprises continually await us about what was and was not anciently present. Even when study of the cultural remains is supplemented with other information—from historical linguistics, epigraphy, biological anthropology, botanical identification—we cannot be certain. Therefore, all interpretations of archaeological findings should quietly be prefaced with "so far" and "it looks like."

Archaeology, then, has its own inherent limitations which force archaeologists to make reasonable, though less than certain, inferences based on the limited, ambiguous data they

A prime example of a topic on which expert views have changed dramatically to be more in agreement with the Book of Mormon is armed conflict. Until recently, the expert view of Mesoamerica was that only peaceful societies existed in the climactic Classic era. The big shift came in 1970 at Becan in the Yucatan Peninsula. The center of the site is surrounded by a ditch almost two kilometers in circumference and averaging sixteen meters across. An expert has said, "To throw 'uphill' from the outside is almost impossible. Defenders, possibly screened by a palisade, could have rained long-distance missiles on approaching enemies using spearthrowers and slings." This sounds almost like a paraphrase of Alma 49:18–20. More than one hundred fortified sites are now known.

(Top) Archaeologists' conception of the fortress at Edzna, Campeche, Mexico.

(Bottom) Archaeologists' projection of a reconstruction of a section of fortifications, defensive earthworks, at Becan, Campeche, Mexico.



encounter. For example, Michael Coe of Yale University tries to connect specific Aztec gods, whose characteristics we know mainly from traditions recorded by Spaniards in the sixteenth century, to Olmec images from 2,500 years earlier which he considers to represent deities with characteristics like those of Aztec gods.¹⁵ His colleague George Kubler, with the same information, sharply disagrees;¹⁶ but that, too, is a matter of judgment. Meanwhile, even in an area supposedly well known, such as ancient Judea, interpretations vary greatly. Professor William F. Albright two generations ago identified the site of Tell Lachish as the city "Lachish" mentioned in the Old Testament in relation to both the Assyrian and Babylonian invasions. His basis for the identification is a traditional account by Eusebius in the fourth century A.D. wherein he logs sites and travel distances which make the site in question a plausible candidate for the Old Testament city. Professor Ahlstrom of the University of Chicago has challenged this identification. David Ussishkin of Tel Aviv University, who has worked for years at the site, concedes that the accepted identification is purely circumstantial, yet in his judgment it is "highly likely."¹⁷

A number of researchers of the Book of Mormon think that the great site of Kaminaljuyu, a portion of modern Guatemala City, could qualify as the Book of Mormon city of Nephi. Can this identification be proven? Of course not; but in settling for plausibility we are simply following the methods of today's most advanced archaeological thinking. Professor L. R. Binford insists that in the face of "ambiguity in the facts of the archaeological record" the archaeologist confronted by this ambiguity "[must] prudently weigh the possible alternatives and then reach a judgment as to which is most likely." In other words, *plausibility* becomes the criterion for judging the truth of a statement in archaeological terms.¹⁸

That is all we can do. After all, science, let alone man-made history, is "tentative forever," Popper assures us, adding: "Only in our subjective experiences of conviction, in our subjective faith, can we be 'absolutely certain.'" ¹⁹ Science provides no equivalent to that "subjective faith"; nevertheless, there is much interest in seeing how *plausible* the Nephite account now seems, in light of the last half-century of feverish digging.

WAR

A prime example of a topic on which expert views have changed dramatically to be more in agreement with the Book of Mormon is armed conflict. Until recently, the prevailing picture of Mesoamerica was that only peaceful societies existed in the climactic Classic era, exemplified by the spectacular Maya and Teotihuacan

ruins dating from about A.D. 300 to 800.²⁰

Mayan leaders were supposed to have spent their time peacefully contemplating and worshipping a complex set of gods, gazing at notable art, playing philosophical games with their calendar, and otherwise acting like "the Greeks of the New World." Only after A.D. 1000 was militarism supposed to have played a role in Mesoamerican history.

In the 1950s and 1960s a few voices—Armillas, Rands, Palerm²¹—urged that this picture must be revised, but nobody listened. The big shift came with the 1970 work by Tulane University at Becan in the Yucatan Peninsula. The center of the site is surrounded by a ditch almost two kilometers in circumference and averaging sixteen meters across. The makers had piled the earth to form a ridge on the inner side of the ditch. David Webster described the military effect of this fortification:

"To throw 'uphill' from the outside is almost impossible. Defenders, possibly screened by a palisade, could have rained long-distance missiles on approaching enemies using spearthrowers and slings."²²

This sounds almost like a paraphrase of Alma 49:18–20. But the Spanish conqueror Cortez had seen similar sorts of fortified places as he pushed through the forests between Tabasco, Mexico, and Honduras in the 1520s. Was Becan merely one of those late, insignificant sites dating long after the Book of Mormon? Webster demonstrated that the Becan ditch and wall were constructed between about A.D. 150 and 450, encompassing the time when Mormon and Moroni lived and fought.²³

Since then a wealth of new supporting data has emerged. More than one hundred fortified sites are now known. Ray Matheny's work at Edzna revealed a large, moated fortress dating to around the time of Christ.²⁴ Loma Torremote in the Valley of Mexico was a palisaded hilltop settlement by about 400 B.C.²⁵ Part of the three kilometers of defensive walls at famous Monte Alban dates before 200 B.C.²⁶ The core of Los Naranjos in western Honduras was entirely surrounded by a big ditch sometime between 1000 and 500 B.C.²⁷ Besides the actual sites, graphic art, remains of weapons, and warrior figurines have been found for many periods. So have stone walls. (Compare Alma 48:8.)²⁸ And the public skull-rack (Aztec *tzompantli*), used at the time of the Conquest by the Aztecs to strike fear into the hearts of potential rebels against their military control, has now been found in the Cuicatlan Valley of Oaxaca dating from before the time of Christ.²⁹

Increasingly it is apparent that war practices in use when the Europeans arrived go back to the very early history of Mesoamerica. Yet as late as ten years ago, most of the published descriptions of early life in the area directly contradicted this view.

The intimidating effect of outdated views is shown by a recent incident. One of my former students wrote to me with some concern because his

professor at an eastern university had assured him that the bow and arrow, mentioned in several places in the Book of Mormon, was not present in Mesoamerica until A.D. 900. But I could assure him that a potsherd from central Mexico has scratched on it a sketch of a man with such a weapon. The fragment is dated approximately eight hundred years prior to the "recognized" date cited by the professor.³⁰

The description of fortifications in Alma 48 through 3 Nephi 3, the frequent battles recorded in the Jaredite and Nephite records, the scale of casualties, many of the tactics and weapons employed, the organizational pattern of the armies, and other information on this topic disclosed in the Book of Mormon now seem entirely plausible in terms of recent developments in our knowledge about Mesoamerica.

POPULATION

In 1560, Father Bartolome de Las Casas estimated that forty million native Americans had perished "unjustly and through tyranny" in New Spain in the two generations after Columbus's discovery.³¹ In the 1930s, anthropologist A. L. Kroeber calculated the much smaller figure of 8.4 million for the total population of the hemisphere when the Europeans arrived.³² These extremes illustrate the difficulties in arriving at pre-European population figures. Oftentimes, population estimates reflect the times of the men who made them. Kroeber's numbers can't help but have been affected by the pessimism of the Great Depression which affected historians, anthropologists, and other scholars. On the contrary, Henry Dobyns's assessment of the data led him in 1966 to conclude that ninety million natives had inhabited the Americas around A.D. 1500—more than forty million of them in Mexico and Central America.³³

Population studies are not, of course, based upon speculation or interpretive whim. As historical and archaeological sources are more carefully examined and the specialists correct each other by mutual criticism, a better grasp of the real numbers is emerging. William Denevan's 1976 volume, *The Native Population of the Americas in 1492*, weighed all the arguments. His estimated total of 57 million for the hemisphere seems fairly safe. He concluded that Mexico and Central America had some 27 million.³⁴ Moreover, according to Fernando de Alva Ixtlilxochitl, who used native documents as sources for his post-Conquest history of central Mexico, the "Toltecs" of the tenth century carried on wars with forces in the millions and suffered over 5.6 million dead.³⁵ Even discounting for possible exaggeration, such numbers are not outside the range of the reasonable. Neither are the 230,000 warrior casualties

attributed to the Nephites six hundred years earlier. (See Morm. 6:10–15.)

The figures on Mesoamerican population offered by demographers decades ago could not be reconciled with statements in the Book of Mormon about millions of people being destroyed in the concluding Jaredite and Nephite wars. Now, analysis of the data on lands occupied, ecology, settlement sizes, war casualties, and other population-related factors in the Book of Mormon text shows striking consistency and realism in the reported demographic changes. At the same time, the absolute numbers reported in the book are of the same order of magnitude as the figures which current research on Mesoamerica finds acceptable.

METAL USE

Critics have considered specific items mentioned in the Book of Mormon text which have no known parallels in ancient America as special problems. However, both critics and apologists of this subject have displayed inadequate knowledge of both the scriptural statements and comparative cultural materials of the right time and place.

For many years Mesoamerican scholars contended that metallurgy was unknown in the area until after the end of the Classic era around A.D. 900. The Book of Mormon, on the other hand, indicates that the Nephites used iron, copper, brass, steel, gold, and silver almost from the first of their history (2 Ne. 5:15), and the Jaredites knew gold, silver, and other metals more than a millennium earlier. However, new data and new interpretations again place the Book of Mormon in a better light.

Most metal artifacts in Mesoamerica belong to the centuries immediately preceding the Spanish Conquest. Even then, there was no abundant metal supply in the area, so earlier objects probably were reused or melted down and recast. Naturally objects of such value only rarely would have been left where archaeologists could discover them. What early metal objects have been found are generally small, or else they were purposely deposited as offerings in tombs or sacred sites. The fact that now a dozen or so pieces of metal have been found from before A.D. 900, going back to about 100 B.C., assures us that these people had a knowledge of metalworking. But, unquestionably, metal objects were relatively rare and rather precious at all times. Patterson supposes that the comparative rarity of metal in pre-Columbian times had to do with the limited technology which made mining the ore deposits difficult.³⁶

It is, nevertheless, puzzling that we do not find more evidence of metallurgical skill than is demonstrated so far in the handful of early pieces we have found. We know that the Peruvians used simple metal-working skills soon after 2000 B.C.³⁷ Since it is

generally accepted that Peru and Mesoamerica were in contact, we would be surprised if such a valuable cultural feature as metals was not transmitted from the former to the latter.³⁸ Even without considering the possibility of a transoceanic introduction of metallurgy, the Peruvian knowledge strongly suggests that archaeological orthodoxy on this point has been in error, that in fact the Mesoamerican peoples did have more knowledge of this technology than has so far appeared.

Language studies provide support for the idea of early metals use in Mesoamerica. For many years linguists have been at work comparing surviving related languages in order to reconstruct the parent- or proto-languages. Professors Longacre and Millon have reconstructed part of Proto-Mixtecan, spoken in the state of Oaxaca, Mexico, and surrounding areas. A word for metal (or at least metal bell) appears to have been in use around 1000 B.C. according to their data.³⁹ Kaufman's study of the Tzeltal-Tzotzil

The description of fortifications in Alma 48 through 3 Nephi 3, the frequent battles recorded in the Jaredite and Nephite records, the scale of casualties, many of the tactics and weapons employed, the organizational pattern of the armies, and the other information on this topic disclosed in the Book of Mormon now seem entirely plausible in terms of recent developments in our knowledge about Mesoamerica.

languages showed that in the Mayan area another word for metal went back to about A.D. 500; but the same root is also found in Huastec, a Mayan language which is thought to have broken off from the main group around 2000 B.C.⁴⁰ Campbell and Kaufman, meanwhile, in an influential study on Proto-Mixe-Zoquean, demonstrated rather conclusively that this was the language central to Olmec civilization. It, too, had a word for metal which they felt had originated no later than 1500 B.C.⁴¹ So historical linguistics now shows that metals appear to have been known, and presumably used, in the three most important language families of early Mesoamerica well before 1000 B.C. We may have confidence that in the future archaeologists are likely to find metal specimens, rare though they may be, to fill in present gaps.

Among the metals mentioned in the Book of Mormon is *ziff*. (See Mosiah 11:8.) Several reasonable Hebrew derivations of this term are possible, either with the sense of "shining" or "plated." In terms of Mesoamerican substances, perhaps *tumbaga* is the most logical possibility.⁴² This alloy of copper and gold was commonly produced in Colombia and Central America but has also been found in a Mayan site.⁴³ Another possibility is the unique copper-tin alloy discovered by Rubin de la Borbolla, Caley, and Easby in western Mexico.⁴⁴ Or tin alone may have been *ziff*. Modern metallurgical scientists tend to believe that all alloys are now known and that nothing new, like *ziff*, still remains unidentified.

A parallel case helps us appreciate that there are still problems of physical analysis and of labeling to be solved. Medieval Russian sources refer to a metal, *kharsini*. It has only recently been tentatively identified through careful reading of the documents as a native substance compounded of arsenic and antimony; scholars had earlier guessed that *kharsini* must have been brass.⁴⁵ As in the parallel case, Caley and Easby criticized Mesoamerican archaeologists for their "stubborn refusal to face facts" about the mining, smelting, and use of tin in pre-Columbian times. The archaeologists had generally denied the very presence of this metal in pre-Spanish days.⁴⁶

Meanwhile, Craddock has corrected another error about ancient metal in the Mediterranean, using new analyses to demonstrate that brass, the copper-zinc alloy, was actually used in Greek and Etruscan times, around Lehi's day. Metallic zinc may also have been used.⁴⁷ The standard story for years was that zinc and conscious alloys from it originated only in the 1700s in Europe. That view made the "brass plates" problematic, but now it is quite plausible that they were made of brass, exactly as the Book of Mormon indicates.

The point of all this is what it teaches about "knowledge." At this moment we do not know what *ziff* is. No matter how complete metallurgists and archaeologists feel their data now is, we can feel assured new light will come with more study—of the



Reconstructed weapons, a stone-hammer and a spear, from Central Guatemala of unknown date.



Photograph of a gold metal object from the Cenote of Sacrifice, Chichen Itza.

For many years Mesoamerican studies contended that metallurgy was unknown in the area until after the end of the Classic era around A.D. 900. The Book of Mormon, on the other hand, indicates that the Nephites and Jaredites used metal. Historical linguistics now show that metals appear to have been known, and presumably used, in the three most important language families of early Mesoamerica well before 1000 B.C.

chemical composition of specimens already dug, of finds that will surely be made in the future, of metals terminology, and so on. For example, we would like a more careful study on the contents of a pottery vessel dug up at Teotihuacan, Mexico, many years ago by the Swedish archaeologist Sigvald Linne, which dates to about A.D. 300–400 and contains a “metallic-looking” mass that contained copper and iron.⁴⁸ At the same time, interested Latter-day Saints should carefully examine the Book of Mormon text to analyze and correlate every statement and implication about metals. Only then can a proper comparison be done. However, the metal-use “problem” of the Book of Mormon seems already to have moved a long way toward solution.

In a broader sense, research as a *continuing, open process* is the burden of this article. Neither Latter-day Saint readers nor professional archaeologists and their associates will be wise simply to stand still. The Latter-day Saint reader who wishes to go beyond a superficial treatment of the “evidences” must develop skills and multiply the ways he can view an ancient text. Archaeologists would do well to learn that although a document from early times may contain unfamiliar religious material, it may still offer

new understanding about the material remains which concern them. For either Saints or archaeologists to ignore the work of the other is counterproductive. A studious attitude on both sides is the wisest course. □

To be continued.

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NOTES

1. Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962).

2. Karl R. Popper, *The Logic of Scientific Discovery* (New York: Basic Books, 1959), p. 280. “The old scientific ideal of *episteme*—of absolutely certain, demonstrable knowledge—has proved to be an idol. The demand for scientific objectivity makes it inevitable that every scientific statement must remain *tentative forever*. It may indeed be corroborated, but every corroboration is relative to other statements which, again, are tentative. Only in our subjective experiences of conviction, in our subjective faith, can we be ‘absolutely certain.’ ” (Italics in the original.)

3. M. Wells Jakeman, “The Ancient Middle-American Calendar System: Its Origin and Development,” *BYU Publications in Archaeology and Early History*, no. 1, 1947; Hugh Nibley, “The Book of Mormon as a Mirror of the East,” *Improvement Era* 51 (1948), pp. 202–04, 249–51; Sydney B. Sperry, *Our Book of Mormon* (Salt Lake City: Stevens and Wallis, 1947).

4. John W. Welch, “A Study Relating Chiasmus in the Book of Mormon to Chiasmus in the Old Testament, Ugaritic Epics, Homer and Selected Greek and Latin Authors,” Master’s Thesis, Brigham Young University, 1970; John W. Welch, ed., *Chiasmus in Antiquity* (Hildesheim: Gerstenberg Verlag, 1981).

5. Robert Wauchope, *Lost Tribes and Sunken Continents* (Chicago: University of Chicago Press, 1962). Michael D. Coe, “Mormons and Archaeology: An Outside View,” *Dialogue* 8 (1973), pp. 40–48.

6. Despite some disagreement about details, the following are among those who have reached conclusions similar to these, in chronological order: J. A. and J. N. Washburn, *An Approach to the Study of Book of Mormon Geography* (Provo: New Era Publishing, 1939); M. Wells Jakeman in classes at BYU and public lectures from at least 1946 onward; Thomas Stuart Ferguson, *Cumorah—Where?* (Independence, Mo., 1947); Milton R. Hunter and Thomas Stuart Ferguson, *Ancient America and the Book of Mormon* (Oakland, Ca.: Kolob Book Co., 1950); Ross T. Christensen, “The Present Status of Book of Mormon Archaeology: Part 2,” *Millennial Star* (Oct. 1952), pp. 234ff.; John L. Sorenson, “Where in the World? Views on Book of Mormon Geography,” privately circulated Book of Mormon Working Paper No. 8, 1955; V. Garth Norman, “Book-of-Mormon Geography Study on the Narrow Neck of Land Region,” privately circulated Book of Mormon Geography Working Paper No. 1, 1966; Sydney B. Sperry, *Book of Mormon Compendium* (Salt Lake City: Bookcraft, 1968), pp. 447–451; Hugh Nibley, “The Book of Mormon and the Ruins,” *Foundation for Ancient Research and Mormon Studies, Nibley Archive Reprint BMA-BM* (1980), p. 2; David A. Palmer, *N Search of Cumorah: New Evidences for the Book of Mormon from Ancient Mexico* (Bountiful, Ut.: Horizon Publishers, 1981).

7. For example, Norman A. McQuown, “Indigenous Languages of Native America,” *American Anthropologist* 57 (1955), pp. 501–70.

8. The scriptures which establish a reading for a possible limited scope of Nephite (and Jaredite) lands have been discussed by many scholars. An example is in the later writings of Sydney B. Sperry, longtime professor of scripture at Brigham Young University, who often discussed the implications of such scriptures as Omni 1:20–21; Mosiah 8:7–12 with Alma 22:30–32; Morm. 1–5; Ether 9:3; and Ether 14 and 15. See also J. Nile Washburn, *Book of Mormon Lands and Times* (Salt Lake City: Horizon Publishers, 1974),

- pp. 205–17, 283–87; and Ferguson, 1947, and Palmer, 1981, cited in footnote 6.
9. Michael D. Coe, "Early Steps in the Evolution of Maya Writing," in H. B. Nicholson, ed., *Origins of Religious Art and Iconography in Preclassic Mesoamerica* (Los Angeles: UCLA Latin American Center and Ethnic Arts Council of Los Angeles, 1976), pp. 110–11.
 10. In addition to the sources cited in notes 6 and 8, see John L. Sorenson, *An Ancient American Setting for the Book of Mormon* (Provo: FARMS, in press).
 11. Consider the following reasoning: (1) The Cumorah of the Nephites and the Ramah of the Jaredites were the same hill (Ether 15:11). (2) This area, covered with bones (Omni 1:22; Mosiah 8:8; 21:26–27; etc.) and also a "land of many waters, rivers, and fountains" (Morm. 6:4; Ether 15:8), was in the land of Desolation, which bordered on the land Bountiful at the narrow neck of land (Alma 22:29–32). (3) In Mormon 3 through 6, it becomes clear that the final battles of the Nephites were localized, centering largely in the general area of the city of Desolation, which was in the land of Desolation "by the narrow pass which led into the land southward" (Morm. 3:5, 7). (4) And therefore, according to this reasoning, Cumorah, the final battlefield of the Nephites and Lamanites, was near the narrow neck of land.
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 13. William F. Albright, *The Archaeology of Palestine* (Harmondsworth: Penguin Books, 1949), pp. 85–87; Richard A. Diehl, "Tula," in J. A. Sabloff, ed., *Supplement to the Handbook of Middle American Indians*, Vol. 1, *Archaeology* (Austin: University of Texas Press, 1981), p. 291.
 14. Kathleen M. Kenyon, *The Bible and Recent Archaeology* (Atlanta: John Knox Press, 1978), pp. 33–43.
 15. Michael D. Coe, *Mexico*, 2d. ed. (New York: Praeger, 1977), p. 86.
 16. George Kubler, "The Iconography of the Art of Teotihuacan," *Dumbarton Oaks Studies in Pre-Columbian Art and Archaeology*, No. 4 (Washington, D.C., 1967), pp. 11–12.
 17. The dispute over identification was recapped in a lecture by Ussishkin at Brigham Young University in February 1982.
 18. Lewis R. Binford, "Reply," *Current Anthropology* 24 (June 1983), p. 373; emphasis in the original.
 19. See note 2.
 20. David L. Webster, *Defensive Earthworks at Becan, Campeche, Mexico: Implications for Maya Warfare*, (Tulane University, Middle American Research Institute, Publication 41, 1976), p. 108.
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 23. *Ibid.*, p. 87.
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 33. *Ibid.*, p. 416.
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