## A BOOK OF MORMON REPORT



# ARCHAEOLOGY 101: Understanding How to Interpret Mesoamerican Archaeology Using The Book of Mormon — Part One

By Shirley R. Heater

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rchaeology, popularly viewed as an exotic field of study of the history of mankind, is practiced worldwide. Mesoamerican archaeology—a term for a geographic, cultural, and archaeological area covering the southern two-thirds of Mexico, Guatemala, El Salvador, Honduras, and Belize—is an intriguing study, especially

by Book of Mormon believers. In fact, archaeological discoveries that have been reported in the Mesoamerican area during the past few decades have led to exciting evidences of corresponding patterns—a thrilling breakthrough for those of us who love The Book of Mormon (Heater 2010).

Misinterpreting these discoveries and other archaeological findings, however, has unfortunately led many Book of Mormon enthusiasts to the wrong conclusions. Sharing these incorrect "proofs" does little to support the accuracy and historicity of The Book of Mormon, many times garnering criticism and scoffing by those to whom we desire to witness. For this reason, it is essential that we are equipped to correctly identify and utilize applicable evidences in support of The Book of Mormon. Thus, it is my desire to present in an abbreviated and simplified form the various methods in which archaeologists bring the past to light. Understanding the process of the overall archaeological field of study—and its limitations—behind and beyond the observed structures and artifacts will provide us with a greater appreciation of how we can best interpret the things that are revealed.

### What is Archaeology?

The study of archaeology (also spelled archeology) is actually a sub-field or subdiscipline of anthropology—the study of all human culture. The four disciplines of anthropology are: cultural/social (workings of societies around the world); biological or physical (long-term development of humans, which includes ecofacts from such organic materials as bone [burials], floral [agricultural], and fauna [animal], as well as forensic investigations); archaeology (past human cultures through physical evidence); and linguistics (verbal and non-verbal communications such as writing or iconography—i.e., symbols or art).

Within the sub-discipline of archaeology are four types: prehistoric (past cultures without a written language); historical (cultures past and present with

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## Archaeology 101 (Cont. from Page 1)

recorded history); underwater (physical remains beneath oceans, lakes, rivers, and wetlands); and salvage (highway projects, major construction, or flood plain for a proposed dam).

In the field of archaeology there is what is termed

the "two percent factor." This factor postulates that only about two percent of ancient civilizations have been preserved, and of that two percent only about two percent have been explored. Of course, the percentage varies from place to place, but this is a general principle or rule of thumb. The two percent factor remains fairly constant as new findings add to the overall total number of sites discovered and explored.



Figure 1. Archaeological site is overlain by a grid with stakes and strings for "walking the grid" ground survey (Feder 2004:183).

as "walking the grid"). A grid of boxes is marked on the surface by stakes, with the use of strings or spray paint (Figure 1). Careful investigation of a suspected site is then conducted by several persons walking over the ground. As individuals find potential artifacts (i.e., pot sherds or flints, pieces of bone, etc.) or features (i.e., a fire pit or a low wall), a flag is placed at that spot. Before any artifacts are collected, the site location is drawn on a grid map. The

### **Archaeological Methods**

An archaeologist's first task is to identify places that indicate a possible site that could lead to further exploration. A site is a concentrated area of previous human activity. Generally, the most obvious clues to a site are large structures such as

artifacts can then be removed, tagged, and put in evidence bags to be taken to the lab. A contour map is also made (either in feet or meters) using a laser, which identifies the rise and fall of the ground and the location of the grid.

trench, he entered a dark room and found a wall with

intact murals, which led to extensive exploration and

simplest method archaeologists employ is the ground

Though there are several methods by which

ancient human activity may be discovered, the

reporting on this Maya site.

As early as the 1970s, more high-tech means

pyramids or mounded features. However, many other sites are often found by accident. For instance, a landowner cultivating a field may turn up artifacts, or artifacts may be lying on the surface, suggesting a potential site which may later be confirmed. Other discoveries are sometimes made when looter's trenches are found. One such instance is the discovery by William Saturno at San Bartolo in northeast Guatemala. Taking shelter from the heat of the day in a looter's



Figure 2. Ground Penetrating Radar (GPR) looks like a "lawn mower" and detects underground disturbances (Feder 2004: 91).

have been utilized in archaeological surveys. Many of these nonintrusive methods include the following:

## 1. Ground-Penetrating

3-D Radar (GPR) is an on-the-ground survey method. The device used for this method looks like a lawn mower, which is drug across the ground (Figure 2). The microwave pulses penetrate the ground and bounce back from intercepting objects or disturbances. The resulting "map" reveals a subterranean

snapshot, which can bring to light potential underground excavation sites. Developed in the 1920s, this system was first used on a glacier in Austria in 1929 to detect the depth of the ice. It was during World War II that this method was shown to be effective through the air as well as the ground. In the 1970s, NASA developed a prototype for studying the crust of the moon, which was used by Apollo 17 (Convers 2006:133). The first archaeological investigation using GPR was at Chaco Canyon, New Mexico, in 1975.



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2010. This system uses laser pulses that penetrate both jungle and forest canopy to map the ground level in 3-D topography. LiDAR was first used in Mesoamerica at the site of Caracol in Belize, revealing its hidden forest floor and thus confirming the high population for the site estimated by the archaeologists working there (Smith 2010; Keller 2013).

5. Geographic Resources Analysis Support System, a new generation of technology, is commonly referred to as GRASS GIS (Geographic Imaging System). This

2. Aircraft and satellite imaging, sometimes

referred to as "aerial archaeology," was developed in the 1970s using LARS (Laboratory for Applications of Remote Sensing). Sites were over-flown and photographed by the US Air Force. During the 1970s period, one purpose of using this system was to collect infrared images to reveal various stages of corn blight disease, which were indicated by color variations of the corn fields.\*

**3. Thermography imaging** is another type of aerial survey using heat sensors. Called "Sideways-Looking"

Airborne Radar" (SLAR), the LANDSAT satellite senses variations of light and infrared radiation. When converted to photographic images, these recorded variations may reveal patterns for future analyzing.

#### 4. LiDAR (Light infrared Detection And Ranging, also referred to as LADAR—LAser Detection And Ranging), was a new imaging technology reported in

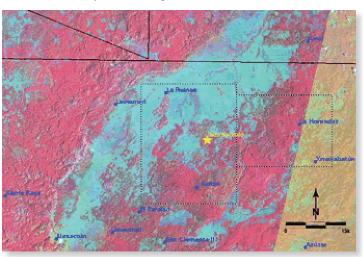


Figure 3. Hidden features at San Bartolo are revealed by color variations in vegetation from an aerial survey.

\* I saw and handled many of these resulting images while I was working in the Data Bank for Lockheed at the Johnson Space Center [NASA] in Houston, Texas, during the early '70s.

occupation in that area. The discovery of San Bartolo led to the disclosure of some of the earliest *Cont. on Page 4* 

through combining and comparing data, resulting in the ability to rotate artifacts for a complete 3-D view. The aerial surveys—discussed previously in numbers two and three—might discover "shadow sites" (underground features not visible

cutting-edge computer software captures, stores, checks, and displays data already in a digital format

(i.e., images, maps and other types of data, including

maps and artifact images are produced (or modeled)

aerial surveys). Three-dimensional models such as

"shadow sites" (underground features not visible on the ground) such as flattened burials or buried stone formations, which cause color variations

> of vegetation. The information received from these shadow sites then can be used on the ground to explore these hidden features. One such example is the site of San Bartolo (mentioned earlier). While surveyed from the air, color variations in the vegetation revealed a number of hidden features (Figure 3). This data then was used to search on the ground, finding new evidences of the vast extent of

## Archaeology 101 (Cont. from Page 3)

hieroglyphs, moving the date of early Mayan writing back to 300 BC, which fit more closely to The Book of Mormon timeline.

The next step is to excavate the area. Excavations take several forms, such as test pits or open-area



Figure 4. Test pits provide a sampling of a grid and may lead to more in-depth excavation (Feder 2004:54).

trenching. Test pits within a grid (Figure 4) provide a sampling which may lead to more in-depth excavations or an extension of the area to other grids. Excavations may extend down to bedrock or until the lowest level is reached where nothing is found. Stratigraphic deposits (accumulated layers along the side walls) can reveal a chronological or historical profile. Open-area trenching excavates squares, leaving a band or wall called a balk around the square, to reveal the stratigraphy layers, as well as

provide a walkway between grids (Figure 5).

Part two of Archaeology 101: Understanding How to Interpret Mesoamerican Archaeology Using The Book of Mormon will appear in the next issue of glyph notes, Volume 22 Number 4. All references for the article will be included in Part Two.

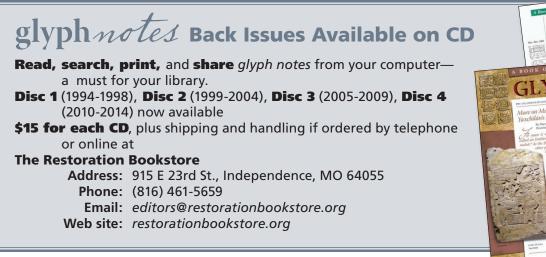
Shirley Heater obtained an anthropology degree, with a focus on Mesoamerican Archaeology, from the University of Missouri, Columbia, in 1982. She graduated magna cum laude with Honors, Phi Beta Kappa, and continued her graduate studies in the area of Biblical Archaeology.



Figure 5. Deposits accumulate in layers which are revealed in stratigraphic profile on trench walls (Feder 2004:79).

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Answers to God's Important Rules Word Scramble from Page 7





# Don't Forget Me

Pre-Columbian Studies Institute (PSI) came into existence in 1994. Lyle and Sherrie Smith and my husband, Don, and I are founding members of the organization. In addition to the newsletter, *glyph notes*, PSI sponsors tours to Book of Mormon lands. Don and I have been blessed to be able to assist with tours to Mexico, Honduras, Guatemala, Belize, and El Salvador, which we believe encompasses the area where the narrative of The Book of Mormon took place. The tours allowed us to form friendships with others who share a common bond of love for The Book of Mormon.

I cherish the many opportunities I have had to meet and share my testimony of Jesus Christ and his gospel with bus drivers, waitresses, fellow church members, strangers on the street, guides, and many others in various walks of life. One particular meeting with a worker at the Jungle Lodge at Tikal in Guatemala remains strong in my memory. My best friend, Barbara Eliason, and I were sitting in the dining/registration building at the lodge waiting for our husbands to return from an after-hours guided tour of Tikal. As we were visiting about our day's activities, I noticed the young girl who was closing up the shopping booth and tidying up the area. She kept glancing over as we laughed and talked. Her eyes told me that she was longing for something.

We motioned to the young girl to join us. She accepted our invitation. Unfortunately, she spoke very little English. Barbara did not speak any Spanish, and I had only two semesters of college Spanish. We struggled to communicate with our limited vocabularies of each other's native language. However, we did communicate. Hand gestures, artwork, and other forms of non-verbal communication helped bridge the language barrier. The time went by quickly as we learned each other's name along with bits and pieces about our families.

Our group was scheduled to leave the following morning. We were up early and almost loaded into our bus when the young girl walked up to say goodbye. Barbara and I asked Lyle, our tour leader who could speak fluent Spanish, to convey some thoughts to her. Don snapped a picture of the three of us and we hugged goodbye. She looked me in the eye and said, "Please don't forget me; I am a child of God too." Those words brought tears to my eyes. Rarely does a day go by that I don't think about her and offer a prayer that someday we will meet again. My hope is that she, along with the thousands, yes, even millions of others to whom The Book of



(L-R) Patricia Beebe, young Maya woman, Barbara Eliason at the Jungle Lodge just before the group departed Tikal.

Mormon and the gospel must go, will be among those who come to Zion, "and they shall see us, and we will fall upon their necks, and they shall fall upon our necks, and we will kiss each other..." (D&C 36:13a).

You, the supporter and contributor, have helped Pre-Columbian Studies "whisper hope" to thousands through its newsletter *glyph notes* with its testimonies and evidences from archaeology and linguistics attesting to the authenticity of The Book of Mormon and its relevance for our day. The powerful promise in The Book of Mormon found in Ether 5:22 states: "And it is by faith that my fathers have obtained the promise that these things should come unto their brethren through the Gentiles...."

The promise will be fulfilled through the Gentiles to whom the precious Book of Mormon has been entrusted. "For unto whom much is given much is required" (D&C 81:1c). Won't you join with PSI, through your financial donation, in assisting with the work of sending hope to those who have not had the opportunity to learn about The Book of Mormon?

If you have not already done so, please take a moment to update your subscription to the newsletter now. A self-addressed envelope is provided in this issue for your convenience. Again, we thank each and every one of you who have been faithful supporters of Book of Mormon research over the years. Our prayer is that none will have need to utter the words, "Don't forget me; I am a child of God too."

Patricia J. Beebe, Vice President 🕮

# glyph quotes \_ By Susan Freeze

Voice recognition is such a curious thing. We don't need to see a person we know to recognize them. We need only to hear their voice.

When someone calls me on the intercom at the school where I teach, I recognize who it is by their voice. The lunch prayer—said every day by a different student—comes over the intercom. If I don't catch the student's name, I can still identify him or her if the student was once in my class. When listening to a sermon on a CD from the branch where I attend, I can tell who is talking before any name is given. I immediately recognize family and friends when they call on the telephone.

In all these situations it only takes a few words to recognize the speaker because I have spent enough time with them to know their voices. The Scriptures indicate we must learn to understand the voice of the Lord, but if we don't spend time developing our relationship with God, then we won't recognize his voice.

In the end of the thirty-fourth year after the birth of Christ, a great multitude of the Nephites and Lamanites were gathered together to marvel at

the great change that had occurred during the three days of darkness at the time of Christ's crucifixion. "While they were thus conversing one with another, they heard a voice, as if it came out heaven," but they did not understand it. Even though they couldn't understand the voice, it did pierce them "to the center," causing them to quake and their hearts to burn. Finally, on the third time that the voice spoke, they understood.

There are many reasons that get in the way of our hearing and understanding God's voice. The *They heard a voice, as if it came out of heaven; and* ... *they understood not the voice which they heard.* —3 Nephi 5:4 [LDS 11:3]

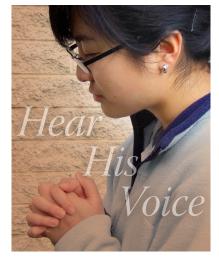
Scriptures list iniquity, pride, seeking other gods, and being a stiff-necked people as a few of those reasons. If God is trying to talk with us, we need to listen! His message to the Nephites and Lamanites was important. He was telling them that the personage descending from heaven was his beloved Son and to listen to him! He was inviting them to come into a relationship with his Son—the same invitation that he gives to us today.

As most Christians, our great desire should be to hear and understand the voice of the Lord the first time he speaks to us. Our relationship with Jesus Christ is the key to hearing and understanding God's voice. We develop this relationship through obedience. "And hereby we do know that we *know* him, if we keep his commandments" (1 John 2:3). "My sheep hear my voice, and I know them, and they follow me" (John 10:27). It's not possible to recognize a voice that has never been heard.

Research shows that we don't learn well during a crisis. If tribulation is coming, it will be important to have an established relationship with the Lord.

> This relationship with him is truly the oil in the lamps of the ten virgins (Matthew 25:1-12). That is why the foolish virgins could not borrow any oil. Our personal relationship with Christ is not something that can be given away to another person.

It takes about a month to form a new habit. It takes longer to forge a relationship. Just like I can recognize the voice of friends and family, I want to recognize my Lord's voice in the same intimate way so I can heed his directions.



# Assistant Editor Wanted

We continue to be excited about the opportunity to share the good news about The Book of Mormon. To do this more effectively, PSI (Pre-Columbian Studies Institute) is searching for someone to assist the editor with the publication process of the newsletter *glyph notes*. This is a volunteer position. *glyph notes* is published quarterly now, which would require approximately 60 hours during the three weeks of the editing and proofing process. Prefer someone who lives in the Independence area to facilitate working together and someone who has a degree in English or journalism or special training in producing newsletters. Write to the editor (Sherrie Smith) at *precolumbiansi@gmail.com.*  **P**RE-COLUMBIAN STUDIES INSTITUTE • JUL / AUG / SEP 2015 • VOLUME 22 NUMBER 3 glyph notes

Glyph Dwellers Dwellers – to live and have a home in a particular plac

## The Adventures of Beezrom

By Mindy Mulheron Illustrations by Aaron Presler

The best part of the story was that God actually

TOUCHED a stone and made it light up! Isn't it awesome that God was right there—with the Brother of Jared, and the Brother of Jared didn't even know until he saw God's finger? How crazy is that?! Have you ever thought about the things you can't really see? Do you wonder (or maybe you know!) if God is right there by your side all the time? Like physically next to you? Standing there? What if you reached out your hand someday and God grabbed it-and then suddenly you saw HIM?! Wouldn't that be AMAZING? Wow! I've been thinking a lot about the idea that we're surrounded by the host of heaven. It's a pretty cool thought to know that we aren't ever alone-even if we can't see our heavenly guardians.

Anyway, just wanted to see what you thought about that idea—that heavenly guardians could actually be all around us-and to make sure you knew that you're never alone! Not ever. Especially since the story isn't very happy today. As I kept reading, I found out that the Brother of Jared and his friends made it to the Land of Promise-just like Lehi and his family! It took a long time, and they were probably tired of being in those boats, but they made it. And when they arrived, they prospered in the land—which means they were happy and blessed. Sounds good, right? Well, here's the bad part: eventually they forgot what God had done for them. (Can you believe it?! They FORGOT.) And because they forgot, or didn't care anymore, they started to do bad things. In fact, they were doing such bad things that people started getting hurt and even dying. Isn't that sad?

Why do you think we forget so easily how good God is? Why do we think we don't need him to help us? Or that we know better than him? Sometimes it seems like God doesn't want us to have any fun, but the real reason is because he doesn't want us to get hurt. Think So we were talking about light last time, and that God is light. (But you knew that already because you're smart!)

about the lifeguard at the pool who yells at you for running. Do you know why they don't want you to run? It's not because they're mean: it's because they don't want you to get hurt. Sure, it's really fun to run and jump into the pool. But what if you slip and scrape yourself on the concrete? Or worse, slip and fall into the pool and maybe get really hurt?! God is like the lifeguard. He's watching out for you because he doesn't want you to get hurt. His rules are the best rules, and if we don't follow them we have to understand we'll probably get hurt-and who wants that?! So next time you're tempted to break one of God's rules, think about why God made the rule. He had a really good reason, and if you think about it I'm sure you'll figure it out.

There's a lot more. You know God never leaves a story undone, so there's no way the bad guys are going to win! But I gotta run for now. See you next time! © Scriptural Reference: Ether Chapter 3 [LDS 6-8]

#### God's Important Rules Word Scramble Unscramble the phrases below to discover some of God's important rules.

GEOLDVO	2 WORDS	
H O E O T E V A L N R O N E	3 WORDS	
RYUBOSERTAOPYEN	3 WORDS	
I K B D N E	2 WORDS	
N T O E H B S E	2 WORDS)	
T O E D S L O A T N	3 WORDS	
Y U T E F H R E N D G E H	3 WORDS	
Can you think of other rules God has given us? Why are God's rules important?		

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> ARCHAEOLOGY 101: *Understanding How to* Interpret Mesoamerican Archaeology Using The Book of Mormon — Part One

Don't Forget Me Glyph Quotes The Adventures of Beezrom Glyph Clips



#### Lecture and Workshops Maya Society of Minnesota

Readers of *glyph notes* in the area of St. Paul, Minnesota, may find their lectures and workshops of interest. The September and October ones will be finished by the time this issue goes out, but there is another one on November 13. It will be about the site of El Peru-

Liquid mercury, highly toxic, is produced by heating mercury ore, or cinnabar. The red-colored cinnabar was used widely in the Maya and Olmec areas, many times as a covering for a whole burial. The tomb of the Red Queen in Palenque is so called because of the amount of cinnabar in the tomb. Cinnabar was also

Waka, which has been reported on in past issues of glyph notes. The lecture is at 7:30 p.m. at 100E Giddens Learning Center, St. Paul, Minnesota. See their web page for more information (sites.hamline. edu/mayasociety/) or call Tom Olson at 952-542-9851. 🕮

used to decorate jade objects.

See also Mike Ruggeri's website about Teotihuacan. mikeruggeristeotihuacan. tumblr.com

*tinyurl.com/m9ntfyb* Excavations of the tunnel under the Pyramid of the Feathered Serpent (Quetzalcoatl) have revealed interesting artifacts, like jade statues, jaguar remains, and a box filled with carved shells and rubber balls. Recently archaeologists discovered liquid mercury at the end of the tunnel and they are puzzled about its purpose.

By Sherrie Kline Smith

Liquid Mercury Found at

Teotihuacan

The Guardian

April 24, 2015

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PSI members Don and Pat Beebe are shown the tunnel's entrance by site archeologists at the Pyramid of the Feathered Serpent. Inset: A sample of cinnabar