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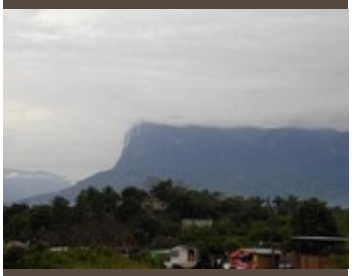

HILL CUMORAH EXPEDITION TEAM, INC

Cumorah Messenger

Progress at Cumorah

By Neil Steede © 2019

In the month of August, 2019, David Brown and I made a trip to our excavation site of Coxca in Oaxaca, Mexico. "Coxca" is the archaeological site known to most church members by the Book of Mormon name of "Cumorah." Many things were accomplished during this trip. First, and foremost, we were able to contract Alejandro Sarabia with our team.

Alejandro is one of the most respected Mesoamerican archaeologists in Mexico. He was the director of the archaeological site of Teotihuacán for 30 years. Teotihuacán is just north of Mexico City and is the largest ancient archaeological site known of in all of Mesoamerica. Alejandro and I have been good friends since 1995. At that time, he gave me permission to do a study on the tunnel underneath the Pyramid of the Sun. Since that time, he has requested me to produce a variety of studies. Because of his prominence in the archaeological community and his commitment to excellence, I thought him to be the best candidate to excavate our site.

Moreover, Alejandro has excavated hundreds of times and has obtained hundreds of permits from the National Institute of Archaeology and History (INAH) of Mexico, I am completely confident that his request for a permit for Coxca will be granted. And there are other reasons we want to have Alejandro on our team. One of the primary reasons is that he is a Mormon and obtained his PhD at Brigham Young University. This

Neil Steede, Alejandro Sarabia and Sergio Estrada discussing project requirements for permitting and other aspects of the their contracts.

Continued on Page 2

Book of Mormon Metals

By Terry Scott © 2019

In part one of *Book of Mormon Metals,* I showed the many types of metal ores located in Mexico. Proving that metal ores existed in Mesoamerica does not prove the Olmec and Mayas actually used any of these metals in their culture.

Before I get into the evidences of metal working in Mesoamerica, let me go over some of the reasons why many archaeologists think it did not exist before 900 CE (AD). One of the biggest criticisms regarding the Book of Mormon is the lack of evidence of iron working by the Mayans or Olmecs as early as implied by the Book of Mormon.

Let me spend a little time talking about the relationship between iron and corrosion or rust as many of us call it. A temperate, dry climate greatly reduces the corrosion rate of iron, while a hot, humid climate accelerates it. The high humidity creates a chemical reaction to form iron oxide on the surface of the iron, commonly referred to as rust.

"*Fresh iron exposed to a hot atmosphere with plenty of oxygen and water will form a thin layer of rust immediately*". [1] The effects of different amounts of humidity can be seen in the corrosion chart **(Figure 1).**[2] A relative humidity (RH) of over 60% starts accelerating the corrosion pro-

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Inside this issue:

should not concern any of us because he has never allowed his studies in archaeology to be overshadowed by his belief in the Book of Mormon. Even more, he has pledged his total allegiance to the Early Sites Research Society (ESRS).

Since our meeting with him he has already written a seventeen-page proposal for the permit. At the same time, our good friend, Sergio from Tuxtepec has become very good friends with Alejandro. Sergio is our coordinator for the project and will arrange our "sponsoring" through the local school, which is a Mexican legal requirement for any archaeological project. We were able to pay both Alejandro and Sergio their wages for the month of August. We were also able to cover Sergio's expenses he incurred by traveling to Mexico City to meet with us.

When David and I arrived in Mexico City, we were met at the airport by Sergio, Edd DeTray and Edd's grandson, Hans. After our meeting with Alejandro at Teotihuacan, the five of us traveled to Tuxtepec. The next day we arrived at Juan Ignacio's house to make further preparations. Juan is the landowner. Upon arrival, Juan was not there, so, David, Edd, Hans and Leon (Juan's youngest son) all decided to hike up to the archaeological site. Obviously, I did not join them since I am both blind and crippled and Sergio stayed with me.

While those four hiked up the mountain, I negotiated with the women concerning Alejandro's board. We had already made arrangements for his room by having rented a room from their house for him. However, no arrangements had been made for his meals. I arranged this aspect with the ladies of the home who are the wives of Juan and his two sons.

The four reported that upon their arrival to the archaeological site, they found direct evidence of the presence of the tropical rain forest. If you remember, in April we hired people to clear the jungle off of the site. Now, four months later the jungle was already at a height of 4 feet and even higher in some places. It would have been invisible to anyone who did not know it was there.

The four had a prayer meeting. There was a wonderful spirit as prayers were given in English, Spanish and Mayan. Several had very personalized experiences which hopefully they will be sharing in this newsletter.

When Juan arrived at his house, we began discussing and planning with him. We reminded him that the rented room was paid for on our last trip and that the rent went from April of 2019 to April of 2020. At that time, it was requested that a lock be put on the door. This has yet to be done.

In April I had paid Juan wages for April, May and June of 2019. With this trip, we have now paid his wages for July thru December of 2019 and for January of 2020. We discussed the need for a gate to be installed in the fence from the cow pasture to the archaeological site. We also discussed the need to make a small building close to the site to house the tools. I explained that the tools need to be protected in a secured building. Therefore, I requested that the construction be cement block walls and a concrete floor. I also requested that the small building have a metal roof with a door that locks.

Juan stated that he did not believe that we needed a building up by the site. He explained that they trusted everyone who lived around them. In response, I asked him for one of his measuring tapes. I then told his son to please place the tape up by the side of the road. Then Juan asked, "Why?."

I explained that, "Tomorrow I will go and see if the tape measure is still there, after all, you say that you trust everyone."

"I understand your point," said Juan.

I explained to him that he should keep all of the receipts from the construction of the small building and that I would reimburse him when I return.

In every sense the trip was extremely successful. Not only did we have our archaeologist and coordinator contracted, but we also acquired room and board for the archaeologist at the landowners home. We also made arrangements with the landowner to do improvements that were important for the completion of the excavation.

I most certainly felt that the Lord had helped us in all these endeavors and that this project is moving forward toward an amazing discovery.

The Coxca site covered in overgrowth that has flourished since we cleared it in April.

cess of iron. Mexico City has an RH as high as 74%, Guatemala City's RH reaches 77%, and the rain forest areas in Mesoamerica can reach 88% RH, with up to 260" of rain fall a year. [3]

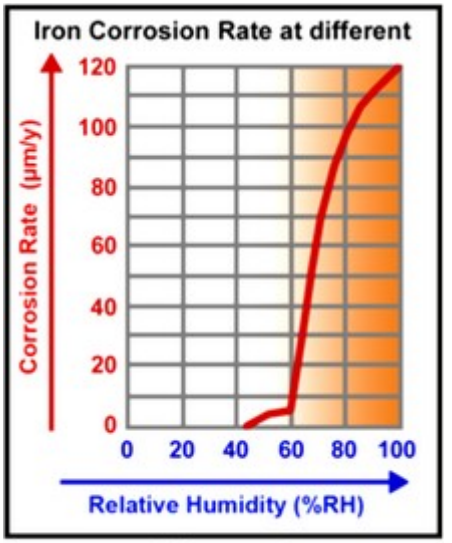

Figure 1

Let me illustrate this by using a 1" thick piece of iron. With an RH of 62%, corrosion takes place at around 20µm per year. Conversion units are 1000µm = 1 mm. 25.4mm = 1". This translates to about 1270 years before the 1" thick iron is completely gone. An RH for Guatemala City gives a corrosion rate of about 85µm/year or about 300 years to destroy a 1" piece of iron. An RH of 88% from the rain forests will completely disintegrate a 1" piece of iron in about 230 years. Since the book of Mormon puts the ending of the Nephites around 400 AD (CE) that is over 1600 years ago. This is plenty of time to rust away, say a sword; most ancient swords were between ½" to ¾" thick. Iron bowls and other thinner iron ornaments would most likely have corroded away much sooner than a sword.

When an iron object is buried in a tomb, the oxygen supply can be greatly reduced or completely cut off with only the air trapped in the tomb before it is sealed. At Kaminaljuyu we have such a situation. In Tomb II, Mound E-II-3 a variety of offering were found including "*pebbles and chunks of minerals (iron oxide, hematite, mica, quartz)*"[4] As mentioned before, iron oxide only forms on the surface of iron, but does not come in pebbles or chunks by itself.

Before I go into artifacts found, I want to comment on copper, gold and silver.

Copper may have not been used much by the earlier Mayans. I only found one reference dating copper usage around 200 CE. (see Figure 2)[5] "*An early dating at La Pena (Mexico) puts copper smelting as early as 200 BCE with the cire perdue or lost wax technique similar to that used in lower Central America, Ecuador/Peru and Colombia.* [5]

Copper Tooling Timeline			
Location	Annealing	copper smelting	bronze smelting
Old World	6000 BCE	4200 BCE	2500 BCE
Great Lakes	5500 BCE		
So. America	2155 BCE	1450 BCE	850 BCE
Mexico	200 BCE-500 CE	200 BCE-650 CE	900 - 1040 CE

Figure 2

Let's move on to Gold and Silver. "*Spain's King Ferdinand understood that the acquisition of that gold was the only way in which he could fund his scheme of exploring and spreading the word of God. The king became desperate for gold and, on July 25, 1511, he unequivocally instructed his New World colonists to get gold, humanely, if you can, but at all hazards, [to] get gold*"[6] Gold and silver ornaments are rare and treasured items, both in museums and for private collectors. Thanks to the Spaniards, much or most of the Silver and Gold items made by the Mayans and other Mesoamerican groups were seized, melted down and shipped back to Spain by the conquistadors.

"*Between 1500 and 1650, the Spanish imported 181 tons of gold and 16,000 tons of silver from the New World. In today's money, that much gold would be worth nearly $4 billion, and the silver would be worth over $7 billion. This may not seem like a whole lot in a world with national budgets in the trillions of dollars, but during this span, prices in Europe rose by 500%; in other words, a loaf of bread was five times more expensive in 1650 than in 1500, thanks in great part to gold and silver imports.*" [7]

Over a 150 year period, Mesoamerica was systematically looted of all the gold and silver that could be located. It is no wonder that Archaeologist can find little evidence of gold or silver.

Now let me talk about the actual usage of metals in Mesoamerica. Let's start with some basic definitions.

Metal working vs **Metallurgy**.

"*Metalworking is the art and craft of shaping metal while metallurgy is the science of metals; their extraction from ores, purification and alloying, heat treatment, and working.* It is easier to prove the Olmec and Maya practiced metal working than metallurgy. Let me expand on the term **iron ore**. "*Iron minerals that are at present used as ores are hematite, magnetite, limonite, and siderite… **Hematite** is the most important iron ore.*" [8]

Ilmenite (found at San Lorenzo) is a heavy, black, metallic oxide mineral composed of iron and titanium oxide. (FeTiO3).[9]

Pyrite or iron pyrite, or fool's gold, is an iron sulfide (FeS2). It has long been used in jewelry due to its similar appearance to gold.[10] It is sometimes found with gold because the two are formed under similar conditions.[11]

"*Metal items crafted throughout Mesoamerica may be broken into three classes: utilitarian objects, objects used for individual ornamentation, and ceremonial/ritual objects.*[12] *The latter two categories comprise the bulk of distinctly Mesoamerican artifacts, with metals playing a particularly important role in the sacred and symbolic cultural realms.*" [13]

Of the two types of metal artifacts that have been found in any great number; are mirrors and beads. "*Early mirrors were fashioned from single pieces of iron ore, polished to produce a highly reflective surface. Mirrors have been found in almost every part of the Maya region, mostly in burials and ritual caches. They have been dated to all periods of Maya civilization from the Middle Preclassic (around 600 BC) right up to the Spanish conquest in the early 1520s.*" [14]

"*During the Early and Middle Preclassic periods (approximately 1500 to 500 BC) the Olmecs fashioned mirrors from iron ore, including minerals such as hematite, ilmenite and magnetite. The Olmecs preferred to manufacture concave mirrors; this gave the mirror the properties of reflecting an inverted and reversed image. Larger concave mirrors could be used to light fires. These early mirrors were manufactured from single pieces of stone and were therefore of small size, rarely exceed-*

Continued on Page 4

ing 15 centimetres (5.9 in) across." [15]

Although the Olmec used similar materials to manufacture a reflective surface, mirrors found at Olmec sites differ from those found in the Maya subarea in three respects: (1) the Olmec mirrors are produced by polishing one whole piece of iron-ore, while the Maya mosaic versions are constructed of smaller fragments fitted together; (2) Olmec mirrors seem to lack the stone/ceramic/wood backing that is so characteristic of Maya varieties; and (3) the reflective surface of Olmec mirrors is concave such that the surface is ground into an inverted contour while Maya mosaic mirrors are normally flat. On the other hand, Olmec-style mirrors do share with Maya specimens the characteristic drill holes, presumably for suspension, and a high frequency of occurrences in both cache and burial contexts.p44 [16]

"*The mosaic composite faces of Maya specimens* (see Figure 3) *are undoubtedly more intricate than those of the Olmec fashioned from a single mass of mineral, so plausible conjecture suggests that they denote advancement in craftsmanship. Accordingly, it would seem that the virtuosity represented by the grinding and finishing of Olmec mirrors* (Heizer and Gullberg 1981: 115) *would apply even more to the mirrors from the Maya subarea. Described as masterpieces of the stone-workers craft on the few undecayed plaques found the pieces of pyrite are so perfectly shaped and fitted that the joints are almost invisible, a result of long and careful grinding of each bit of pyrite.*" [16] (see Figure 3)[16]

Superbly conserved mirror in museum exhibition (Fields and Reents-Budet 2005: 106)

Figure 3

"*Pyrite, with a hardness of 6.5* (see Figure 4) *and with no natural cleavage planes to facilitate subdivision of the crystals, could not have been other than most difficult to work. Yet every plaque was mounted with dozens or scores of plates cut to precisely the same thickness and shaped to fit exactly. The polygons seldom had less than four and some possessed as many as nine sides, each so bevelled that only the very edge came into contact with that of its neighbour. Nothing produced in aboriginal America seems to us to rival these plaques in the matter of skilled and meticulous craftsmanship.*"p179 [16]

"*The remains of at least 15 mirror backs are documented in the extensive Tikal Reports along with countless recordings of specular hematite in the form of mosaic elements, flecks, dust, and granules.* (Coe 1990)".p73 [16]

A Study by Marc Blainey, lists 512 mirrors found from 42 different Mayan sites. 240 mirrors have holes drilled in them, with 192 having 4 holes in each mirror. 156 have identifiable backing material, mostly slate. Several mirrors backs have Mayan glyphs or pictures carved on them. [16] (see Figure 5)[16]

"*A mirror with hieroglyphic text on the back was excavated from Río Azul in the far north of the Petén Basin of Guatemala. Another mirror from Petén, found at Topoxte, has a circular band of text on the back that includes the phrase u-nen, meaning "his mirror". Mirrors with Maya glyphs on the back have been found as far away as Costa Rica, more than 850 kilometres (530 mi) from the Maya heartland…On the whole the iron ore polygons have not survived and have deteriorated to a rust-like residue coating the backing. In some cases ridged deposits of adhesive outline the shape of the vanished polygonal mosaic pieces.*" [15]

"*In general, ancient Maya mirrors are marked by the following traits: (1) a circular or square mosaic surface consisting of fitted iron-ore pieces (e.g. pyrite, hematite) adhering to the mirror back with sticky (vegetal?) resin; (2) some sort of whole, or compound backing to the mirror, made of either ceramic, wood, or stone, onto which the iron-ore fragments adhere; (3) either one or two pairs of suspension holes on opposite edges; and (4) a general association with elite burial and cache deposits of monumental architecture.*" p41[16]

Mohs Scale of Hardness		Figure 4
Lead: 1.5	Bronze: 3	Titanium: 6
Tin: 1.5	Nickel: 4	Pyrite: 6 -6.5
Zinc: 2.5	Platinum: 4-4.5	Jade: 6 -7
Gold: 2.5-3	Steel: 4-4.5	Quartz: 7
Silver: 2.5-3	Iron: 4.5	Hardened steel: 7-8
Aluminum: 2.5-3	Obsidian: 5 -5.5	Tungsten: 7.5
Copper: 3	Ilmenite: 5.5 -6	Topaz: 8
Brass: 3	Magnetite: 5.5 -6.5	Corundum: 9

Mirror back from Costa Rica with Mayan hieroglyphs carved on back

Mirror back from Zaculeu tomb, Western Watemala

Figure 5

"*In 1967 Michael Coe of Yale University supervised the excavation of a large basalt head in San Lorenzo in the Tehuantepec region of Mexico. While unearthing this Olmec monument, he discovered large amounts of pottery and a cache of heavy beads. The head monument and beads are dated to the early formative period of the Olmec civilization about 1100 BC. Since then other large caches of these beads have been found in the San Lorenzo area. In addition in the 1970s Pierre Agrinier discovered several more of these objects along with a quantity of unworked ore in the Chiapas region.*" p130 [17]

"In 1996, a non-Mormon archeologist named Dr. Anne Cyphers wrote "*a total of 10 tons of iron has been found at San Lorenzo, in several massive hoards, the largest of these which was four tons. Before the discovery of these hoards, only a few pieces of iron were known. They were discovered by using a metal detector.*" [18]

"*Ann Cyphers unearthed more than eight tons of perforated iron ore cubes. Obtained from sources in Oaxaca and Chiapas, these exotic cubes may have served not only as beads, but as units of wealth, much like the kula ornaments and other forms of Melanesian shell valuables.*" [19]

"*The ilmenite artifacts from San Lorenzo are small and roughly cuboidal, with 2–3 cm long edges. The artifacts have flat to slightly convex faces and rounded edges. Each one has three intentionally drilled conical perforations. Each perforation penetrates a face of the block, and all intersect at the center*.p852 [20] (see Figure 6)[17]

The holes drilled in the beads would have allowed for string or twine to be threaded through several of them and hung from the waist.

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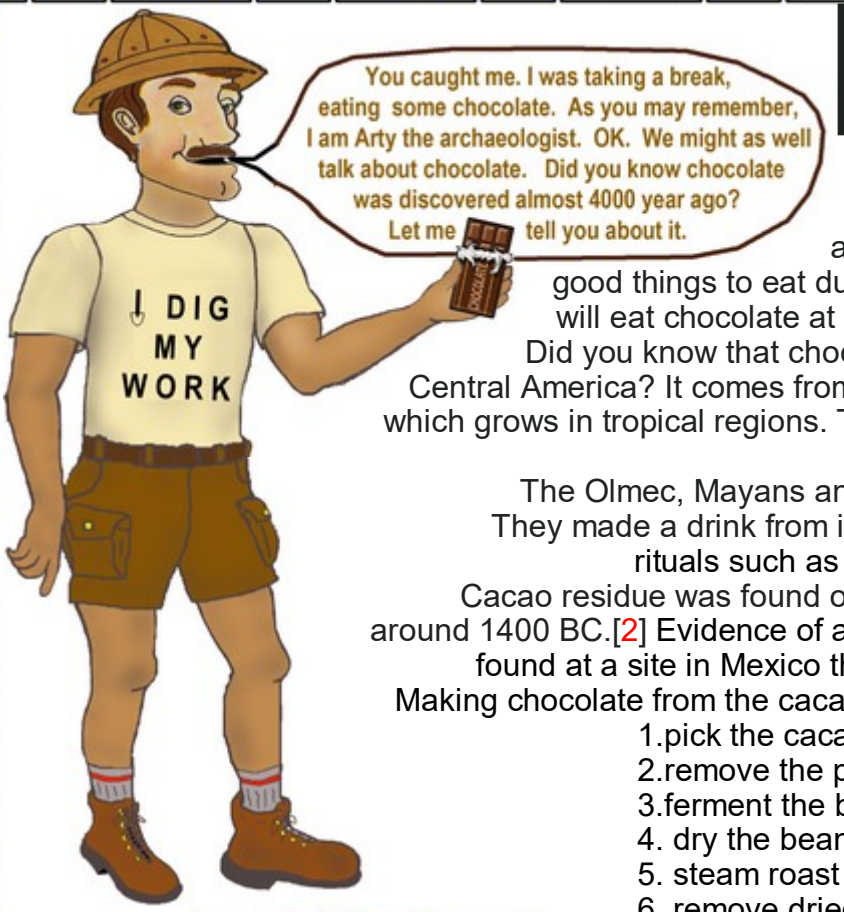


Chocolate

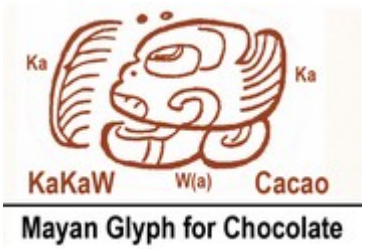
With the Christmas season almost here, we often think of good things to eat during the holidays. Most of us will eat chocolate at least once during Christmas. Did you know that chocolate was first discovered in Central America? It comes from the *Theobroma Cacao* tree which grows in tropical regions. The seeds inside the fruit are used to make chocolate.

The Olmec, Mayans and Aztecs all used the cacao. They made a drink from it, used it for money[1] and in rituals such as birth, marriage and death.[2]

Cacao residue was found on pottery in Honduras dating around 1400 BC.[2] Evidence of a drink made from cacao was found at a site in Mexico that dated around 1900BC.[1]

Making chocolate from the cacao bean requires many steps:

1.pick the cacao fruit
2.remove the pulp and beans inside
3.ferment the beans in their pulp
4. dry the beans
5. steam roast the beans
6. remove dried pulp from beans
7. grind the beans into powder
8. heat to remove acids and moisture
9. mix in flavor, milk, sugar, vanilla etc.
10. pour into shape molds and cook
11.sell chocolate to the public
12. we buy and eat the chocolate



Mayan Glyph for Chocolate


Mayan Mural of Cacao Tree

1 https://en.wikipedia.org/wiki/Theobroma_cacao
2 https://www.smithsonianmag.com/arts-culture/a-brief-history-of-chocolate

WORD SEARCH

Find and circle the words from the story:

R	U	Z	K	B	T	M	M	E	I	C	O	D	Z	C	J	D	P
S	C	D	G	E	H	M	E	V	X	A	V	D	L	H	I	K	P
G	A	F	P	A	E	A	X	H	Z	Q	W	N	J	O	M	T	U
O	M	T	Q	N	O	Y	I	O	D	D	S	V	K	C	O	I	L
V	C	R	N	S	B	A	C	N	F	R	Z	A	D	O	N	Q	P
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L	K	E	I	S	O	V	F	U	U	N	S	T	I	A	Y	M	L
M	T	U	Q	E	M	Q	E	R	I	K	C	E	J	T	Q	D	N
E	F	E	L	Z	A	H	M	A	T	H	J	C	A	E	W	A	G
C	L	U	W	N	X	O	Y	S	W	C	A	C	A	O	B	T	N
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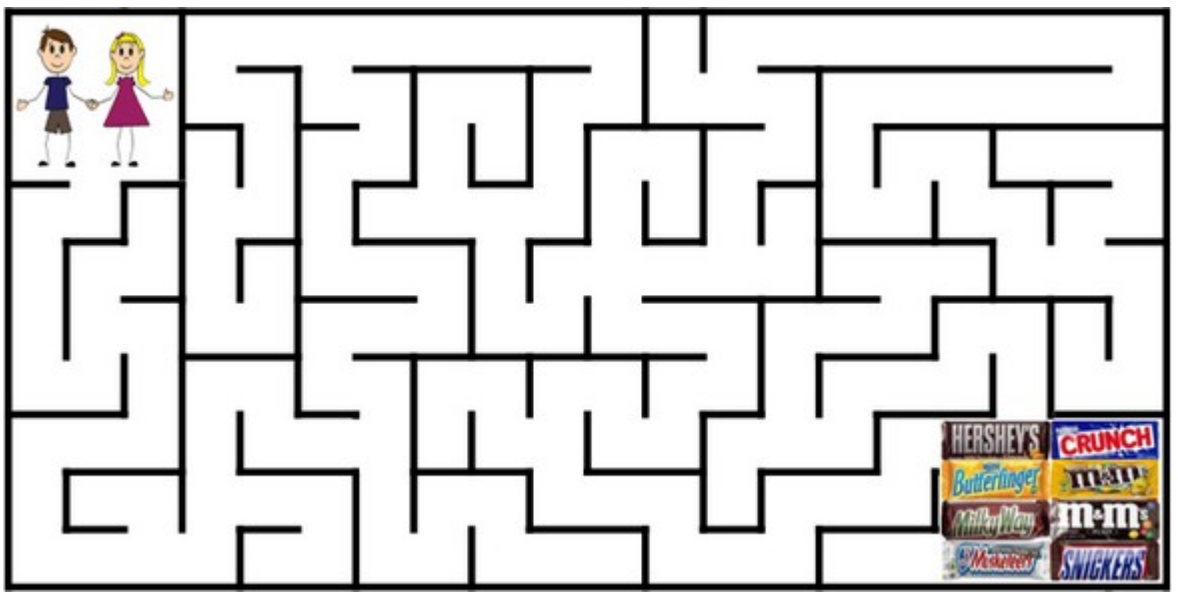
Aztec
Beans
Cacao
Chocolate
Drink
Fruit
Honduras
Mayan
Mexico
Money
Olmec
Pulp
Rituals
Theobroma
Tree
Tropical



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OTHER SITES OF INTEREST

http://www.teach-nology.com/teachers/lesson_plans/science/archaeology/
http://research.history.org/Archaeological_Research/KidsPage.cfm
http://ngm.nationalgeographic.com/2007/08/maya-rise-fall/map-interactive
http://www.digonsite.com/drdig/mesoamerica/15.html http://www.smm.org/sln/ma/index.html
http://archaeology.la.asu.edu/teo/ For questions e-mail me at tscott75@sbcglobal.net

Book of Mormon Metals *Continued*

"*How were these iron ore beads drilled owing to the hardness of the ilmeniite ore the grinding abrasive used was probably harder than six on the Mohs scale (see Figure 4). This excludes obsidian, which was also in use among the Olmec. Some possible grinding minerals available to the Olmec are quartz sand, topaz, and corundum. The consistent circular pattern in the holes shows that the holes were formed or at least finished by drilling.*" P137 [17]

Typical Olmec bead. Over time the holes have filled with sand.

Figure 6

S.D. Gillespie writes about a workshop, located at Llano del Jícaro, "*specializing in the final crafting stages of greenstone, basalt and iron-ore objects contains polishing tools, drill bits, debris and 150,000 drill bearings made of ilmenite, a dense ferrous mineral laced with crystalline veins whose source lies in Oaxaca. Not only was the workshop site under elite control, the ilmenite tools also were strictly regulated.*" [21]

Finally I insert this letter reprinted on a Mormon web site summing up the frustrations of many of us, regarding the usage of metals during early Olmec and Mayan reigns before 900 CE, being largely ignored by the main stream archaeological community just to save face.

An Open Letter to Dr. Michael Coe from John L. Sorenson

"*Then there is the problem of accessing the information that does exist. I have spent considerable time searching site reports for mentions of metal objects that have been found that apparently date before the "metal curtain" of about AD 900 in Mesoamerica in the area but are conventionally ignored in discussions of the history of metallurgy. There have proved to be several hundred such specimens dating from 400 BC to AD 900, 153 of which were excavated by professional archaeologists. (Why bother to seek "chemical traces" of metal when actual specimens are totally ignored?) This incidence of metal objects would be even more surprising were it not for the fact that terms have been reconstructed in **five** major Mesoamerican language families that mean "metal" or "(metal) bell," all the words thought to refer to times prior to 1000 BC.*" [22]

2020 Calendar Fundraiser By David B. Brown

The Hill Cumorah Expedition Team, Inc (HCETI) has produced another calendar offering as a fundraiser for their efforts in supporting Neil Steede's Book of Mormon perspectives.

HCETI began in 2001 as an informal group looking to develop the archaeological evidence that points to Cerro Rabon being the Book of Mormon location called Hill Cumorah. This group continued to meet and perform annual expeditions to Mexico in its effort to move the project forward.

In 2005, the group launched a website in an effort to begin telling their story. In 2006 the group gained legal recognition in becoming a Missouri non-profit corporation. In 2009, the corporation finally received their IRS 501c3 status, which it has since maintained without interruption.

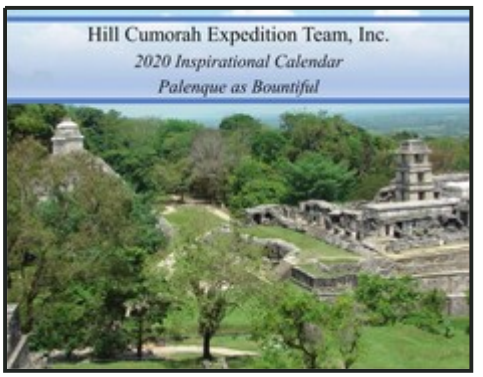
During the years since its inception, HCETI has been instrumental in supporting Neil Steede's developing Book of Mormon geography that parallels the Mesoamerican cultures of the Maya and the Olmec. Many of the cities, people and cultural shifts found in the Book of Mormon are actually identifiable when placed side-by-side with Mayan and Olmec cities, people and cultural shifts.

The publication of many of these are found on the HCETI website, most of them on the webpage for the 16 videos pointing out the parallels. They can be found from a link on the homepage at www.hceti.org.

This year's calendar focuses on the Maya archeological site of Palenque and how it parallels with the Book of Mormon city Bountiful. The photos highlight many of the unique structures and murals that express the Mayan testimony of Jesus Christ. While that is a bold statement, we can support that statement with nearly endless evidences.

Are you interested in helping us continue to move forward with this work? You can support us by purchasing a calendar. Go to our website and click on the button to purchase a 2020 Inspirational Calendar. We will send it to you as soon as we receive your order.

Thank you for all your continued support. We look forward to how things are developing with the archeological dig about to take place at Cerro Rabon and the possibilities are so exciting that words cannot truly express our anticipation—let's do this work together.



We're on the web at www.hceti.org

The Hill Cumorah Expedition Team, Inc is a Missouri not-for-profit corporation dedicated to the study, research and dissemination of information as it pertains to the Book of Mormon. Our primary focus is to research and assemble archaeological and other related information to help establish the historical feasibility of the Book of Mormon.

HILL CUMORAH EXPEDITION TEAM, INC

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Book of Mormon Metals *Continued*

I am reminded of a scripture from The Book of Mormon that seems to describe some of the above finds I have just written about. Ether 10:27 "*And they did work all manner of work of exceedingly curious workmanship*."

Footnotes:

[1]https://van.physics.illinois.edu/qa/listing.php?id=485
[2]https://www.armorvci.com/newsletters/corrosioncollegeaugust2012.html
[3]https://www.thesustainabilitycouncil.org/tropical-rainforest-biome.html
[4] Henderson, John S. The World of the Maya, Ithica, NY, Cornell University Press, 1997 p94
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