



IMS EXPLORER

Institute of Maya Studies

A monthly newsletter published by the **Institute of Maya Studies**

An affiliate of the Miami Science Museum

Maya enthusiasts providing public education for 42 years

Volume 42
Issue 6
June 2013
ISSN: 1524-9387



Inside this issue:

Important Discoveries 2,6 by Belizean Archaeologists at the Maya Site of Santa Rita

X-Kom Chakan: Maler's 3,6 Lost Second Palace of Tantah, *cont. from pg. 1*

Around the World in 4,5 80 Gigs: Loltún Cave, by IMS member Eric Leuschner

June Programs at the 7 IMS; Membership Application

New Clues in the Search 8 to Rediscover the Mysterious Maya Blue Formula; Upcoming Events



June 19, 2013 • Maya Ceremonial Era Long Count: 0.0.0.9.0 • 2 'Ahaw 18 Sotz G9

X-Kom Chakan: Maler's Lost Second Palace of Tantah

by Stephan Merk

The important early explorer Teobert Maler (1842-1917) documented more than 80 Maya Puuc sites in the Yucatán peninsula between Dec. 1886 and Dec. 1893. He took photographs and measurements of the standing architecture, made drawings and plans, and was in many cases the first one who ever reported about these ancient ruins.

In the last decades scientists and aficionados relocated almost all of these Maler sites, which in the meantime had been forgotten again. One of the very few sites or groups still missing was a building, that the German-Austrian pioneer named the "2. Halbsäulchenpalast" (the Second Palace with half-round columns; hereafter referred to as



Fig. 1



Fig. 2

Fig. 1: X-Kom Chakan, Structure I, Room 2, view from the southwest. **Fig. 2:** X-Kom Chakan, Structure I, Room 1, view from the southwest. Photos: Stephan Merk, 2011.

"Second Palace") of Tantah. Maler had a tendency to term longer structures as "palaces" although the assumed function of these buildings was highly hypothetical.

On March 21, 2011, a local from the town of Bolonchén guided Edgar Portillo, Dan Griffin, Ken Jones, and the author to a small ancient Maya Puuc site in the northeastern part of the Mexican state of Campeche. According to the guide, the ruined place is known as X-Kom Chakan, which according to David Bolles (personal communication, April 4, 2013) in Yucatec Mayan means "hollow in the savanna."

I will propose here that the only building still standing in X-Kom Chakan is identical with Maler's Second Palace (Figs. 1-3). It is situated approximately 850 meters southeast of Structure I in Tantah, an ancient Maya settlement that was first described by Teobert Maler. He had visited this ruin on July 4, 1889, and published its discovery in 1902, in the German magazine *Globus*. Although the



Fig. 3: X-Kom Chakan, Structure I, back wall. Photo: Stephan Merk, 2011.

IMS Presentation: June 19, 8 pm



Tomb I, Zaachila, Mexico (RS, 2013).

"Pyramids, Palaces, Temples and Tombs: An Architect's Comparison of the Ancient Buildings in Mesoamerica"

with
**IMS President
Rick Slazyk**

site exhibits one of the finest executed Puuc buildings ever erected (Structure I, by Maler called "1. Halbsäulchenpalast" – the First Palace with half-round columns; hereafter

continued on page 3



**Jim Reed,
Editor**

©2013 I.M.S. Inc. The *IMS Explorer* newsletter is published 12 times a year by The Institute of Maya Studies, Inc. The Institute is a 501(c)3 non-profit organization. Membership application on page 7. As a member you receive the monthly newsletter and personal access to the Member's Only pages on our website. Access IMS program videos, photo archives, past issues and more. **Get you password by contacting our Webmaster at: keith@merwin.com**

Editor's note: In 2012, the U.S. Embassy granted thousands of dollars to the National Institute of Culture and History of Belize (NICH) for the restoration of the Santa Rita archaeological site. The reason for the grant is because the site is to be converted into a Maya Wedding Garden as part of a grand plan to make Corozal a more popular tourist destination. During excavations prior to the restoration, archaeologists have made some stunning finds. When workers uncovered three capstones, the Director of NICH, Jaime Awe, was summoned to be the first to enter the tomb. The press was called in, and the event was captured live on TV.

Important Discoveries by Belizean Archaeologists at the Maya Site of Santa Rita

Santa Rita is significant for many reasons. Because the site resembles the Maya city of Chetumal (or Chactemal), Santa Rita is believed to be a vestige of that larger ancient metropolis. Santa Rita controlled trade routes to and from Chetumal and other cities deep within present-day Mexico and Guatemala. It was the starting off point to go up river and inland to El Mirador.

The Maya inhabited Santa Rita for more than 3,500 years, from 2000 BCE to the 16th century CE, when residents forced conquistador Alfonso Dávila to leave. The city's population slowly dwindled thereafter and the area was finally abandoned late in that century.

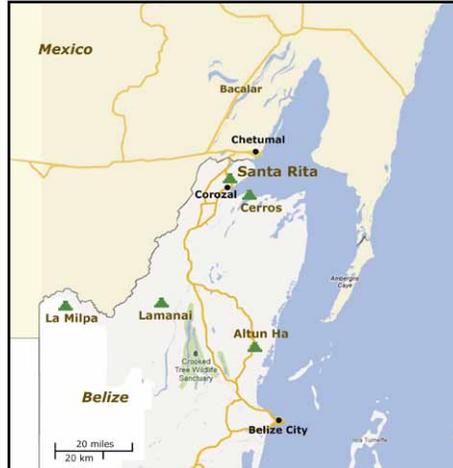
Since the excavations began in January of this year, surprising discoveries have been made. First, excavators encountered a burial that was located beneath the plaza in front of the main stairway. Evidence shows that Maya who were living at the site in the Post Classic period (around

1200-1500 CE) dug a hole down into the courtyard and buried people in a crypt. Inside the burial, researchers found the remains of either one or two individuals. Next to the remains they found a lot of smashed pottery, and also a unique Pelican Effigy Vessel.

But the principal find so far was unearthed in April when excavators initially noticed signs that there may be a tomb in the heart of the upper part of the stairway. Dr. Jaime Awe, was called to the site.

When he was finally crouched down inside the tomb and the cameras were rolling, Awe explained:

“Man, this is very interesting stuff down here. I can make out two individuals. We have one that looks male because of the



Santa Rita is located on top of a hill overlooking the outskirts of Corozal Town in northernmost Belize. Historical evidence suggests that Santa Rita was once the ancient Maya capital of Chetumal.



L) Restoration on the left side of the main stairway. R) Restoration on the right side of the main stairway. The tomb was found below the higher level.



L) Jaime Awe squeezes inside the tomb to begin investigating its contents. R) The Pelican Effigy Vessel is the first of its kind to be found in an excavation.



size, extended, the head to the north, the feet to the south. We also have a second individual which is really interesting because the second individual is at the north end of the tomb. What I



**2013
IMS Board
of Directors:**

Rick Slazyk, AIA, NCARB, LEED AP
President/Membership/Website
arcwerks@bellsouth.net

Marta Barber
Executive Vice President/
Programming
imsmiami@yahoo.com

Janet Miess
Secretary/Website
jmiess@gmail.com

Joaquín J. Rodríguez III, P.E.
Administrative Vice President/
Director of Research
rod44@comcast.net
954-786-8084

Ray Stewart
Treasurer • rstu@bellsouth.net

Susan Bearse
Hospitality
bear6072@bellsouth.net

Patricia Manfredi
pmanfred2003@yahoo.com

Keith Merwin
Webmaster • keith@merwin.com

Alex Morán
kj4cgv@gmail.com

Dr. Anne Stewart
Education Chair

Beth Wein
Hospitality
bethwein@ymail.com

Beth Wiggert
Subscription List
beth2vic@earthlink.net

Gerald Wolfsohn
Public Relations
gerald.wolfson@att.net

Jim Reed
Newsletter Editor
mayaman@bellsouth.net

can say is that the person at the top, at that end, has two pots on top of the chest. Now, the individual that's lying fully extended, looks pretty tall. In fact if I can get a tape measure from somebody, I can get a sense of length of the skull. About 5 feet 6 inches, so probably male, just based

continued on page 6

X-Kom Chakan: Maler's Lost Second Palace of Tantah *continued from page 1*

referred to as “First Palace”), Tantah situated nine kilometers northeast of Bolonchén de Rejón, is still a rarely visited place (see map at right). Karl Herbert Mayer, in 2009, described Structure I and gave a detailed overview of Tantah in the published literature.

After documenting the First Palace in Tantah Maler was guided to the “2. Halbsäulchenpalast.” Unfortunately, the explorer was not specific when he described how he reached the building. He wrote: “Continuing the path from the Palace for about one kilometer, we then turned right into a savanna which has many trees (...)” where he found the “very much destroyed” structure. He did not take a photograph and the only statement Maler gave about the Second Palace is that it exhibits the same type of decoration on its façades as the much larger First Palace of Tantah.

On that three-day exploration in July 1889, Maler wanted to see the Maya sites of Tantah, Chunchimai, and Dolores; local informants had reported their existence to him. Therefore, he followed the old route from his starting point in Bolonchén to the ranchería of Chunchimai, now known as the abandoned Rancho Chimai. This path passes by the ruins of Itzimté, and leads towards the northeast; the ruins of Tantah are to be found almost halfway.

Because Maler wrote that from Tantah he continued following “the path” for around one kilometer to

Grouped among numerous other Puuc sites, X-Kom Chakan is located northeast of the modern-day town of Bolonchén de Rejón. You can see how close it is to Tantah.

reach the Second Palace, I always assumed that he meant the old wagon road from Bolonchén to Chimai. In that specific area, I had tried several times to relocate the building, without success.

The solution to the problem was simply that Maler in his text did not mention that the wagon road bifurcates shortly before one reaches Tantah: to the left, it continues towards the northeast, to the right, it heads in an eastern direction. It was that path to the right that brought Maler to the Second Palace, not the main wagon road. If one starts from this specification, the site is relatively easy to find.

The ruins of X-Kom Chakan lay at the edge of a mostly tree-covered small savanna. The only partially standing building, Structure I, was erected on an outcrop or a high platform. It consisted of two rooms, one behind the other, and connected by a doorway.

This double room has a southwest-northeast axis and faced towards the southeast. It is possible that at one time, a third room existed, laid crosswise and looking towards the northeast. The façade of the front room, Room I, as well as the feasible third room, are destroyed. Only a small portion of the sidewall in the



northeast and parts of the vault of Room I are still standing.

The back room, Room 2, is pretty well preserved. Only the short sidewall in the southwest and two of the once 19 capstones in the vault are missing. Room 2 is 566 cm long and 214 cm wide. Doorjambes in the entrance to the front room consist of two large stone blocks each and are 47 cm deep. Inside the room the front wall shows four pairs of cord holders: one each on both sides of the doorway, on lower and upper levels.

A modern visitor left his name and the date 1965 on the inner side of the back wall of Room 2.

As already mentioned, the front of Room I has completely fallen. In the debris one can see many banded parts of former façade columns, indicating that the whole front was decorated in the upper register with a continuous row of half-round and banded columns, just like the main façade of Tantah, Structure I (Figs. 4, 5).

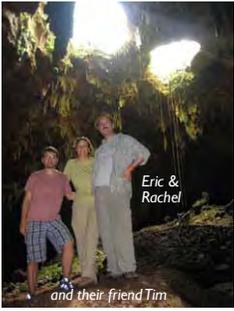
Also, the back sides of the two buildings in Tantah and X-Kom Chakan are alike: The lower parts exhibit plain veneer stones, crowned by a three member medial molding, consisting of an apron-type member at the bottom, followed by a contiguous line of short colonnettes, and a simple row of sticking-out flat plain stones on top.

Above that molding, the upper back façades are decorated with plain stones alternating with simple, not-banded columns in packs of three each. Only the lower member



Fig. 4: Tantah, Structure I, back wall. Photo: Stephan Merk, 2009. **Fig. 5:** Tantah, Structure I, front façade. This is how, most likely, the main façade of X-Kom Chakan once was decorated also. Photo: Dorothea Graf, 2009.





Around the World in 80 Gigs

Editor's note: A couple of years ago, when everyone got wind of the "fact" that the mysterious Maya had predicted the end of the world for December 21, 2012, most of us took the news in stride and stayed put with family, friends and coworkers. IMS members **Eric Leuschner** and **Rachel Platt** took a different approach. They decided it was excuse enough to quit their jobs and headed off on a year-long world adventure together! Last November, before returning to the U.S., they spent a month in the Yucatán and visited seven Maya sites. They came back from their planetary escapade with 80 gigs of photos!

They started a blog site, and Eric takes the time to do research about the sites they visited; his posts are very informative travelogs. I was most impressed with their adventure to Loltún:

Loltún Cave

By the time we reached Loltún cave, roughly 66 miles from Mérida, we were ready for some out-of-car action. The name comes from the Mayan words for flower (*Lol*) and stone (*Tún*), which is about as cool a name as you could hope for.

This stop on the Ruta Puuc is steeped in history, and was a popular hangout for prehistoric shamans as well as 19th century Maya rebels – and everyone who came in between. This extensive network of caves is one of the largest on the peninsula, covering many kilometers of subterranean space.

Apparently the caves have not been fully and completely explored, which is hard to believe in this day and age. We learned from our guide that a sprawling new branch of the cave system may be made public in the next few years (hot tip for those who remember reading this article in the future).

There is a reasonable park entrance fee (though the Texans we met in the parking lot might disagree), and other than a small group of what appeared to be Mexican students, we more or less had the place to ourselves.



A: We descend into the mouth of Xibalba, leaving the sunlight behind us.



B: A notable feature at one of the entrances into the cave is this bas-relief carving which dates to the Late Preclassic.



C: Rubbing of the sculptured figure from The Ancient Maya.

As an official archeological site, the government has put a number of protections in place, such as the requirement for a designated guide. They literally won't let you in without one, but technically you don't have to pay them. The assigned guides work as volunteers and "accept" tips, which in this case we more than happily provided.

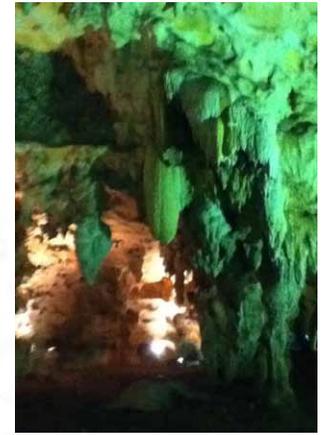
We really lucked out with Pablo. He had every quality you want to see in a guide: a clear passion for his work, extensive knowledge of the subject matter, a friendly (but not overbearing) attitude, and a firm command of English (he told us he was working on his German, evidently an under served market around there). Really, if it wasn't for him, the caves would not have come alive like they did for me that day.

While walking down a steep winding stone stairway, we arrived at the mouth of Loltún, gate to Xibalba – the Underworld (**A**).

Most of the actual Mayan relics were more referenced than actually seen (pottery and other artifacts from 3,600 years ago have been



D: This "Olmec-style" stone head was found in a room of the cave called "the Maya".



E: Then it was magnificent room-after-room of dramatically lit stalactites and stalagmites.

discovered here), but I always had a sense of their presence and significance. Marking the entrance was a faded, almost invisible bas-relief carving of a richly dressed warrior – Late Preclassic, among the oldest carvings in the area (**B**). And towards the end of the initial walk down, there was a stone carved head placed atop a large rock (**D**). This wasn't to be the last surprise he would spring on us. He motioned down into the darkness and said "Take a good look before I do something". Then, he switched on the lights and the intricate yawning cavern stretched out of sight. Down we went.

I've been in a few caves before, most of them products of volcanic activity (Pablo was very curious about the lava tubes of Mt. St. Helens when we brought it up). I had even snorkeled in a cenote once before on a previous trip (outside of Tulum), but this was a different class altogether.

The first couple of caverns were truly enormous, featuring a mad jumble of stalactites, stalagmites, with surreal surfaces warping and

continued on page 5

Loltún Cave by Eric Leuschner *continued from page 4*

folding and disappearing out of sight (E).

Then, Pablo shot a flashlight briefly at an indentation in the ceiling to reveal a dense, twitching den of bats. Suddenly, the packed mud-like turf below our feet took on a whole new meaning (F).

Pablo explained to us how the pre-Columbian Maya used this cave for ritual and meditation. He brought us to a smaller chamber and demonstrated an interesting property of the caves that may have been used to this end. He walked up to a pair of columns and gave them each a swift closed-fist whack in rapid succession. (G) The result was two clear tones in what sounded like a major third on a standard musical scale. He invited us to try it out ourselves, and part of me wished I could have just stayed there and punched the rocks all day.

We went further into the cave system and things got a little darker. Then we saw the hands – tiny handprints high on the wall, upwards of 7,000 years old (H). It was suggested that this was how the primitive spelunkers would mark their path as they wended their way deeper and deeper into Loltún.

Other prehistoric goodies included the remains of mammoths and other extinct mega fauna (though we didn't get to see the bones personally). Mammoth bones were found inside a little room carved into the side of the cave (I) that appear to be over 10,000 years old, and Pablo suggested that only humans could have dragged those bones into that room.

There was also a big sinkhole towards the end of our tour that Pablo said was actually used as a pit trap by prehistoric hunters (J). The precipitous drop would be more than enough to kill a giant sloth or anything else that wandered into it. Yum!

Going even further back in time, we were taken to a "canyon" with massive boulders all piled up on one end. Our guide said that one theory about the formation of the caves (and all the others in the cave-riddled Yucatán) involves the famous



F: *Thousands of bats live in the cave and are always overhead.*



G: *Pounding with your fists on these two columns produces the sounds "Lo!"—"Tun!"*



I: *Mammoth bones were found inside the little room that is up the wooden ladders in the back.*

H: *Within the cave archaeologists have found many examples of prehistoric cave drawings. Hand print outlines similar to these that*



are also seen at the nearby site of Uxmal date to the Late Classic Period, but the outlines at Loltún may be centuries older.

Chicxulub crater (you know, the one that supposedly killed the dinosaurs). The pile of boulders and the various high-water marks were supposedly indicators of the impact.

In the final cave (where the mammoths fell), we got a birding treat: a rare glimpse of a special migratory bird that actually hangs out in the caves when it's not trekking up and down the eastern seaboard. Pablo retold a legend about the bird disappearing into the cave and returning, signifying that it had been to the underworld and back, or something like that. Truth is, I can't remember the bird's name or what the legend consisted of. Which is a real shame because when we actually saw one (and Pablo had warned us not to get our hopes up), I was genuinely thrilled.

Lastly, on the way out, we passed some of the most recent Maya contributions to the cave (if you don't count the extensive electrical lighting system that illuminated our path). This was the remnants of a thick rubble wall built at the mouth of the cave in the mid



J: *It is suggested that this area where the ceiling has caved in was used as a pit trap for hunting large game.*

to late 1800s by Maya rebels during what is known as the Caste War of Yucatán (yet another bloody 19th century revolt by oppressed indigenous Americans). This (and other) caves were used as hideouts, providing shelter, water, and security for the fighters and their families. The walls were built in such a way that, from a distance, they appeared to be a seamless barrier, but when you got right up next to them, you could see there was a way through. Heartbreaking, but nevertheless a vital part of the cave's history.

We learned so much from our guide Pablo and we highly recommend a visit to Lotún Cave when you're visiting the Ruta Puuc. 🏠

Resource: The rubbing of the bas-relief carving on page 4 is from *The Ancient Maya* by Sylvanus G. Morley, George W. Brainerd and Robert Sharer, 1983, Stanford University Press, Stanford, CA.

Check out Eric and Rachel's website with posts of their trip around the world, along with all of Eric's excellent photography at: <http://equalareaproject.com>

Important Discoveries at Santa Rita

continued from page 2

on that height. Now, there are some really interesting artifacts associated with this individual lying down. I can see right by the side of the head there are two figurines.

“This one looks like it’s made from resin poured in a mold, and if that’s true that would make it a unique artifact. I don’t think we’ve ever found a figurine that’s made from resin and poured into a mold. So that’s awesome!”

According to published data, four other burials were previously excavated at Santa Rita. Many of the artifacts found in the tombs show similarities to those from Kaminaljuyu, Guatemala and Teotihuacan in Central Mexico, attesting to the international character of the site; Classic Period artifacts even include pottery of Andean origin.

Awe: “This one figurine is probably made up of resin that has been poured in a mold. It’s a first for the country of Belize. I can’t remember anything



like that being found anywhere in the central Maya area.” Above) At the start of the 1900s, a British medical doctor, by the name of Thomas Gann (known to some as a treasure-hunter and amateur archaeologist) discovered a beautiful mural in Mixtec (Oaxacan) style at Santa Rita. Unfortunately (we do not know why), the mural was destroyed shortly after its discovery. The only record that remains of this unique piece are some meticulous drawings by Thomas Gann himself.



Plan your Maya-style wedding now

Have a fire-lit nighttime ceremony with attendants dressed like you know who – at the Maya Wedding Garden!

Just north of the site is the Río Hondo, along whose banks are large areas of swampland in which the Maya created raised fields. These supported the cacao

plantations for which the province was famous. 🌱

Sources: www.nichbelize.org; www.ctv3belizenews.com; and www.7newsbelize.com

X-Kom Chakan: Maler’s Lost Second Palace of Tintah continued from page 3

of a once multiple member upper molding is still in situ in X-Kom Chakan, the other rows have all fallen down.

Nothing can be said about the base molding of the building; it is completely covered with debris and earth. In the rubble on the northeast side, a half-rounded capital and parts of a corner column were recognized. The visible architecture stylistically belongs to the Classic Puuc times and can be dated to the Ninth Century.

About 70 meters south of Structure I in X-Kom Chakan are several platforms with low mounds on top, the remains of an ancient residential compound. The largest one of these destroyed former structures has an east-west axis and faced north; most likely, it never had a stone roof. Immediately north of this structure, two pilas and one metate were seen.

Teobert Maler’s dream, to find a publisher for his extensive manuscript, titled *Península Yucatán*, that included almost all of his discoveries in the Yucatán, did not come true during his lifetime. Therefore, the explorer agreed to

compile information about several Maya sites in three detailed articles for the German magazine *Globus*, published 1895 and 1902, in which he provided photographs and descriptions of the ruins he had found. In one of the articles, his manuscript of the two palaces in Tintah was printed, although in a shortened version.

Eighty years after Maler’s death, in 1997, his *Península Yucatán*, edited by Hanns J. Prem, was finally published. The part of the text dealing with Tintah was enhanced by adding three original drawings to it: a detailed floor plan of the First Palace together with a sectional view, and a rough sketch of the Second Palace.

The sketch shows a double-room building, one room behind the other; the front façade of the outer room has fallen, the inner room is almost completely preserved. Maler did not draw a third room. The sketch does not show an orientation to one of the cardinal points, but if we estimate that, as usual, north would be on top, then the building would look towards the east-southeast,

direction which would match the X-Kom Chakan ruin.

The identification of X-Kom Chakan, Structure I, with the lost Second Palace is based on three arguments: the location (if we accept that Maler, coming from Tintah, took the eastern path) in a tree covered savanna; the sketch that the explorer did of the floor plan of the structure, and, third, the identical style of façade decoration, as proposed by Maler. It is not clear if X-Kom Chakan should be seen as part of Tintah or as a site by itself.

References:

Maler, Teobert
1902 Yukatekische Forschungen.
Globus, Vol. LXXXII, Nos. 13 and 14,
p. 218.

1997 *Península Yucatán*. Aus dem
Nachlaß herausgegeben von Hanns J.
Prem. Monumenta Americana V.
Berlin: Gebr. Mann, pp. 198-199.

Mayer, Karl Herbert
2009 The Maya Site of Tintah,
Campeche. *IMS Explorer*, Vol. 38,
No. 7, pp. 1-2, 5-6. 🌱

Institute of Maya Studies Line-up of Presentations!

June 12, 2013: IMS Explorer Class:

**“Understanding the Maya Calendars”
with Dr. Anne Stewart**



The Maya calendars were far more complex than the Gregorian calendar we now use. They were used for a variety of purposes, both practical (such as determining the times to plant maize) and esoteric (such as astrological divination). In their calendrical system the Maya kept records of recurring cycles of time based on the movement of celestial bodies.

In such a system a given date would reoccur, for example, every 365 days as in the cycle of the sun. However, they used the system to create an absolute chronology in which a given date is unique, such as our July 4, 1776. To have such a system you must have a beginning date. For us, it is the birth of Christ from which we count forward and backward. The most common system of cyclic counts used by the ancient Maya were the 260-day sacred almanac, the 365-day vague year and the 52-year calendar round. These systems were also adopted by other Mesoamericans. What made the Maya unique was the Long Count. It tracked the number of days that had elapsed since a zero date deep in the past.

In this class, we will look at the components of these calendrical systems and learn how to read several calendars paying special attention to the Long Count. Using the computer program created by former IMS president Sid Hollander, we can recreate a requested date in the Long Count with the correct Maya glyphs.

June 19: IMS Presentation:

**“Pyramids, Palaces, Temples and Tombs:
An Architect’s Comparison of the Ancient Buildings in Mesoamerica”
with IMS President Rick Slayzk, AIA, NCARB, LEED AP**

We have explored and researched the beautiful buildings left by the Maya during the Classic Period: the Pyramid of the Magician in Uxmal, the palaces in the Central Acropolis of Tikal, the magnificent temples of the Chenes style – Hochob, Tabasqueño, Chicanná – in the Yucatán, the tombs of the founder of Copan and, of course, Pakal’s tomb in Palenque. What about the other great civilizations of Mesoamerica? What did they leave behind?



The Palace at Mitla, Mexico (RS, 2013).



Temple of the Sun, Teotihuacan, Mexico (RS, 2012).

After visiting great cities in the Gulf of Mexico area, Central Mexico and the Valley of Oaxaca, we begin to see the differences between the architecture left behind by Aztec, Teotihuacan, Gulf Cultures and Zapotec/Mixtec in comparison to the Maya. The differences are not always obvious, but Rick will help you distinguish what makes the Maya different.

All meetings are 8 pm • Institute of Maya Studies • Miami Science Museum • Maya Hotline: 305-279-8110

New Membership and Renewal Application

Name: _____
Address: _____

City, State, Zip: _____
E-mail: _____
Phone: _____

- New Renewal
- Benefactor: \$350
- Patron: \$150
- Century: \$100
- Member: \$40



*Membership in the IMS includes attending two lectures a month; a year’s subscription to our downloadable monthly **IMS Explorer** newsletter; and access to all features on our website: past newsletters, videos of IMS lectures, upcoming program announcements, IMS photo archives, and a lot more!*

Institute of Maya Studies

The Institute of Maya Studies is totally member-supported! If you are not a member, please take a moment and join us. Membership brings benefits and helps the IMS offer educational programs to the public. If you are already a member, please encourage your friends to join. If you need any assistance, call our Maya Hotline at: 305-279-8110

The IMS has gone Green! Join today

You can also become a member by using PayPal and the on-line application form on our website at: <http://instituteofmayastudies.org>

As a member, you get personal access to the Member’s Only pages on our website. Access IMS program videos, photo archives, past issues and more. **Members: Be sure to get you password by contacting our Webmaster at: keith@merwin.com**

Mail payment to: The Institute of Maya Studies, Inc. • Attn: Membership • 3280 South Miami Avenue • Miami, FL • 33129

The Institute of Maya Studies is a 501(c)3 non-profit organization. Membership dues and contributions are tax-deductible to the fullest extent allowed by the I.R.S.



New Clues in the Search to Rediscover the Mysterious Maya Blue Formula

The ancient Maya used a vivid, remarkably durable blue paint to cover their palace walls, codices, pottery and maybe even the bodies of human sacrifices. Now a group of chemists claim to have cracked the recipe of Maya Blue.

Scientists have long known the two chief ingredients of the intense blue pigment: indigo, a plant dye that's used today to color denim; and *palygorskite*, a type of clay. But how the Maya cooked up the unfading paint remained a mystery. Now, Spanish researchers report that they found traces of another pigment in Maya Blue, that they say gives clues about how the color was created.

"We detected a second pigment in the samples, *dehydroindigo*, which must have formed through oxidation of

the indigo when it underwent exposure to the heat that is required to prepare Maya Blue," noted Antonio Doménech, a researcher from the University of Valencia.

"Indigo is blue and dehydroindigo is yellow, therefore the presence of both pigments in variable proportions would justify the more or less greenish tone of Maya Blue," Doménech explained. "It is possible that the Maya knew how to obtain the desired hue by varying the preparation temperature, for example heating the mixture for more or less time or adding more or less wood to the fire."

The Spanish researchers say they are now investigating

A Maya king, seated and wearing an elaborate headdress of blue feathers, adorns the north wall of a house discovered at the Maya site of Xultún. The painting by artist Heather Hurst recreates the design and colors of the original Maya artwork at the site.

Credit: Heather Hurst, ©National Geographic Society.



the chemical bonds that bind the paint's organic component (indigo) to the inorganic component (clay), which is the key to Maya Blue's resilience.

The research was detailed this year in the journal *Microporous and Mesoporous Materials*.

Sources: From an article by M. Gannon, released 4/2/2013 at: www.livescience.com. Submitted by Scott Allen.

Upcoming Events at the IMS:

June 12 • 8 pm: *IMS Explorer Class*

"Understanding the Maya Calendars" – Dr. Anne Stewart will decode the components of the various calendars, and introduce a conversion software program designed by Sid Hollander.

June 19 • 8 pm: *IMS Program*

"An Architect's Comparison of the Ancient Buildings of Mesoamerica" – IMS President Rick Slazyk will compare the architecture seen at recently visited sites to that of the Maya.

July 10 • 8 pm: *IMS Explorer Session*

"The 8 Ba'tz Ceremonies: End of the Tzolk'in or Maya 260-day Calendar in Momostenango, Guatemala" – with our good friend and fellow Maya adventurer **George J. Fery**.

July 17 • 8 pm: *IMS Program*

"Maya Astronomy Through 13 Centuries (not Baktuns!)" – with the most dynamic duo in Maya studies: **Harvey** and **Victoria Bricker**.

Upcoming Events and Announcements:

Through June 30: *Museum Exhibit*

"Aztec to Zapotec: Selections from the Ancient Americas Collection" – See more than 180 artifacts from the Aztec, Maya, Moche, Nasca, Inca and Zapotec cultures. At the Orlando Museum of Art (OMA) in Orlando, FL. For additional info visit: www.omart.org/exhibitions/aztec-zapotec-ii.

Through Sept. 8: *Museum Exhibit*

"Wari: Pre-Inka Lords of Peru" – At the Kimball Art Museum, in Fort Worth, TX. (This exhibit was previously shown at the Cleveland Museum and Museum of Art in Fort Lauderdale, FL). Get more info at: www.kimbellart.org

October 26, 3 pm: *Museum Lecture*

"Inka and Colonial Wooden Keros" – Theme of a Saturday Talk by Emily Kaplan to take place at the Dumbarton Oaks Research Library and Collection, Washington, D.C. Check out: www.doaks.org

October 26-27: *Conference*

"Conference of Andean and Amazonian Studies" – Theme of the 2013 Conference of the Society for Andean and Amazonian Studies, at the University of Central Florida, Orlando, FL. Get additional details at: www.afsnet.org/events/event_details.asp?id=287554&group=

Through July 31, 2015: *Museum Exhibit*

"Maya: Heart of Sky, Heart of Earth" – Theme of an exhibit at the San Diego Museum of Man, San Diego, CA. For more information visit: www.museumofman.org/

Editor's Tip: *Online all the time*

"Mesoamerica and Ancient America Lectures, Conferences and Exhibits" – Mike Ruggeri maintains the most comprehensive list available of upcoming events. Be sure to bookmark his site at this tiny URL: <http://bit.ly/1aKJzE>



IMS EXPLORER

Join in the **Explorer-ation!** Scholar or not, we welcome submissions from IMS members. Share what interests you with others. All articles and news items for the **IMS Explorer** should be forwarded to the newsletter editor at: mayaman@bellsouth.net