



Pushing back Maya origins

New discoveries from 2,500-year-old ruins at a site deep in the Guatemalan jungle shed new light on the origins of Maya civilization

By David F. Salisbury

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PRECLASSIC REVELATIONS

Two monumental fang-toothed masks, elaborate jade ritual objects and a stone monolith engraved with the portrait of a king found in the 2,500-year-old ruins of a neglected archaeological site deep in the Guatemalan jungle are shedding new light on the early development of the Maya civilization.

These discoveries were made by Francisco Estrada-Belli, assistant professor of archeology at Vanderbilt, at a site called Cival in the Petén region of northern Guatemala, about 20 miles east of the well-known ruins of Tikal and were announced by the National Geographic Society, which funds his research. Cival is one of a collection of sites of varying ages that are located in the vicinity of the famous site of Holmul,¹

Archaeologists generally divide the Maya civilization into three main time periods: Preclassic from about 2000 B.C. to A.D. 250; Classic from A.D. 250 to A.D. 900; and Postclassic from A.D. 900 to A.D. 1521. During the Preclassic period, the Maya are characterized as having an unsophisticated, farming culture organized into tribes and headed by chieftains. The classic period is dated from the advent of Maya writing and is characterized by the development of priest-kings who presided over city-states with hundreds of thousands of inhabitants. During this time the total Maya population may have topped one million. Internecine warfare among the city states finally led to the civilization's collapse. Although certain power centers like Chichén Itzá survived the collapse, Maya cities were in general decline when the Spanish arrived and ultimately brought the native civilization to a violent end.

The discoveries at Cival indicate that the Maya had developed the sophisticated culture and many of the features, including priest-kings and city-states, attributed to the Classic period at least 500 years earlier than previously thought. "We are witnessing the development of dynastic rituals at an unexpectedly early date," says Estrada-Belli.

One of the most convincing pieces of evidence is the discovery of a stone monolith, or stela, at Cival bearing the portrait of a king. Such stelae are fairly common during the Classic period, but

¹ The Holmul Archaeological Project began in 2000 under the direction of Francisco Estrada Belli of Vanderbilt University. Interest in Holmul was motivated by the well-known results of R.E. Merwin's excavations at the site in his pioneering season of 1911 (Merwin and Vaillant 1932). Aside from being the first scientific excavation of a Maya ruin in the history of Maya archaeology, Merwin's work is well know for having produced the first ceramic sequence in the Maya Lowland which has served as a reference for research ever since. The 1911 research clearly showed elaborate architecture and burial data of relatively early date (Early Classic), while at the same time bringing to light more complex palaces, temples and burials of the Late Classic Period which are among the most spectacular in the Maya Lowlands. The 1911 excavations demonstrated the existence of relatively unobstructed early architecture at the site in spite of the Late Classic surge in construction. For more background on the site, [click here](http://www.vanderbilt.edu/estrada-belli/holmul/) [http://www.vanderbilt.edu/estrada-belli/holmul/] and then click on the history button.

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Estrada-Belli's team has dated the pillar to at least 300 B.C., making it the first monolith of the type that has been discovered in the Preclassic.

The development of priest-kings was important because they used their god-like powers to build major metropolises, control the large populations that inhabited them and commission large construction projects, including pyramids and large stone temple complexes. So the evidence for the early development of the priest-king system goes hand-in-hand with Estrada-Belli's determination that Cival was much larger than previously thought.

Cival is located deep in the tropical rainforest, making it difficult to get to and to study. When Harvard archaeologist Ian Graham first mapped the site in the 1980's, the jungle concealed all but a few of the largest stone buildings and pyramids so he categorized it as a minor site.

Estrada-Belli, however, was able to get a more accurate survey of the site using satellite imagery. The aerial images revealed that the ruins sprawl over an area of four square miles and gave the archaeologists exact coordinates for individual structures that they have been able to locate using GPS navigation technology. These techniques have allowed them to determine that the city originally had five pyramids and three large plazas and to estimate that at its height in 150 B.C. the city supported a population of about 10,000.

Satellite navigation also allowed the archaeologists to determine that the city's central, ceremonial complex had an important astronomical orientation. The central axis of the main plaza points directly at the location on the eastern horizon where the sun rises at the equinox. Lines drawn from the western pyramid to two of the other buildings also line up with sunrise at winter and summer solstice.

The city was abandoned in mysterious circumstances shortly after A.D. 100 and never reoccupied. That means the older structures and artifacts are much easier for the archaeologists to find and study. Because the Maya had a habit of putting new buildings directly on top of older structures, Preclassic remains are few and far between at sites like Homul and Tikal that were occupied during the Classic period.

The El Mirador site, also in Guatemala, is a Preclassic site similar to Cival, but even bigger. El Mirador boasts of a pyramid that rivals in size those in Egypt and once held an estimated population of 100,000. Excavations there have also found evidence of a highly developed culture.

"In the past El Mirador has been largely dismissed as an anomaly," says Francisco-Belli. "But, when combined with what we have found at Cival, it seems clear that an entire network of city-states existed at this time and they were probably competing with each other in the same way that the city-states did during the Classic and Postclassic periods." In fact, the label of "preclassic" may turn out to be a misnomer for the period of 500 B.C. to 200 A.D., he adds.

Cival has yielded other indications of a sophisticated hierarchy and complex religious practices comparable to those practiced during the Classic Maya period, Estrada-Belli reports. At the foot of one of the pyramids, the archaeologists found a depression in the shape of a cross that contained five smashed jars, one in each arm and one in the center. Under the central jar, they found 120 pieces of jade: Most were polished round pebbles, but five were jade axes, which may date back to 500 B.C.

Because the Maya believed that their kings embodied the maize god on Earth, the archaeologists consider this one of the earliest examples of public rituals associated with accession of power in the Maya world.

"These appear to be part of a solar ritual associated with the Maya agricultural cycle," says Estrada-Belli. "The jars are an offering of water. The green and blue jade symbolize maize, or corn. The upright jade axes symbolize sprouting maize plants. This is a cosmic offering. The cruciform is the shape of the Maya cosmos."

Most recently, Estrada-Belli and his students have discovered a pair of monumental stucco masks of Maya deities that they think originally flanked a staircase on one of the pyramids. The

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masks are giant 15- by 9-foot faces and are in a remarkable state of preservation. "It's almost as if someone made this yesterday," he says.

The masks' eyes are L-shaped, their eyes are adorned with corn husks, suggesting the Maya maize deity, the ears are marked with four dots and the squared-off mouth has snake's fangs in its center. Ceramics associated with the masks date them to about 150 B.C. Because the pyramid has a second level, According to Estrada-Belli, there is room for a second pair of masks that he hopes to also unearth.

In addition to their striking appearance, the giant masks have important archaeological significance. Not only do they have a number of features common in Maya sculpture, but they also have some features that are also found on jade sculptures carved by the Olmecs, who lived from about 1300 B.C. to 400 B.C. in the Eastern Lowlands of Mexico. The Olmecs also made cruciform offerings similar to those found at Cival.

The traditional view is that the Olmec developed a number of sophisticated cultural practices, including mathematics, astronomy, writing, irrigated agricultural and kingship, which the Maya borrowed from them. These practices are thought to have spread first to the Maya who lived in the temperate highlands region of Guatemala and then filtered down to the lowland Maya.

But Cival casts new doubt on this theory. "It looks as if these cultural practices were being developed in parallel in lowland cities like Cival at the same time as they were in the highlands and coastal regions," says Estrada-Belli. "It is also looking more likely that the cultural exchange between the Maya and Olmec was a two-way street: It didn't just go one way."

The team also found what may be an important clue to the final fate of Cival. They have found a defensive wall that was constructed hastily. According to Estrada-Belli the six-foot-high wall appears to have been "a desperate attempt to close off the inner core of the site." This suggests that Cival met the same fate as many other Maya city-states: conquest by a more powerful neighbor.

The archaeological field work at Cival was funded by Vanderbilt University, National Geographic Society, Foundation for the Advancement of Mesoamerican Studies, Inc., Ahau Foundation, ARB Co., Interco Tire Co. and Trialmaster Co.

ADDITIONAL INFO

National Geographic Society video

<http://shop.nationalgeographic.com/shopping/product/detailmain.jsp?itemID=1753&itemType=PRODUCT&iMainCat=128&iSubCat=237&iProductID=1753>

National Geographic Society news article

http://news.nationalgeographic.com/news/2004/05/0504_040505_mayamasks.html

Q & A WITH ESTRADA-BELLI

Francisco Estrada-Belli, assistant professor of Mesoamerican archaeology at Vanderbilt University, discusses the large mask of a Maya deity on the façade of a pyramid that he discovered last summer at the Preclassic Maya city of Cival. Excavations this spring have revealed more of the curious face as well as a second mask.

How did you find the first mask?

I discovered it by sheer chance several years ago when I was in a tunnel excavation left by looters. I put my hand in a fissure inside the tunnel and felt a piece of carving, which I felt might

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be a snake or a mustache on a mask. Only two years later were we able to mount an expedition to excavate to the spot from the other side of the pyramid, and in May-June 2003 we discovered the large monumental mask of a deity.

What do the masks look like?

This deity, 5 meters wide and 3 meters tall, has a very complex iconography. It has an anthropomorphic face. Its nose and forehead are human, but it has stylized eyes and eyebrows. The eyes are L-shaped and adorned with corn husks, and the eyebrow has a diagonal motif with a U sign and two pinnacles on top of the brow. This year's excavations have shown that the face's single incisor is made up of two fangs. The masks may represent a maize god. A similar mask was found in Belize by David Freidel in the '70s and has been identified as a Preclassic sculpture of a solar deity. Ours date to around 200 B.C -150 B.C.

How do you believe the masks fit into the structure of the building?

I think the masks could have framed the central part of a stairway that was used for important ritual purposes for the Preclassic Maya kings. We have found two masks, and I think we'll find more, possibly four. We are continuing our excavations in the pyramid (or temple).

The pyramid that houses the masks is 13 meters high and is elevated on a 20-meter high platform, therefore rising 33 meters above a plaza located in front of the pyramid and other buildings. The pyramid is at the eastern end of the complex. We have also found a long building at the eastern end of the plaza, in front of the pyramid that contains the masks. These structures' eastern location is important as they have a view of the eastern horizon, and I think sunrise was an important backdrop for rituals performed on the plaza.

What other discoveries have you made at the site?

In front of the long eastern building, we found a stela in June 2002, which might be the earliest structure ever discovered in the Maya lowlands, dating to 300 B.C. We found a recess in the plaza where the stela, or stone slab, could have originally been located. The recess contained a bowl, two seashells, a jade tube and a fragment of hematite. In addition, behind the recess we found, in June 2003, another depression in the rock, at the foot of the pyramid. The depression is in the shape of a cross or cruciform. We found five smashed jars in the cruciform, one on each arm of the cruciform and one in the center. Under the central jar we found 120 pieces of jade. Most are round, polished, green and blue jade pebbles, but five are jade axes, 25 cm long. They were placed with their blades pointing upwards.

What is the symbolism of the jars and jade?

They appear to be part of a solar ritual associated with the Maya agricultural cycle. The jars are an offering for water. The green and blue jade symbolize maize, or corn. The upright jade axes symbolize sprouting maize plants. This is a cosmic offering. A cruciform is the shape of the Maya cosmos, with the Maya world-tree or maize plant at the center of the cross-shaped opening into the natural rock. The maize god/world-tree and the sun god are sometimes conflated in a single figure with which Classic Maya kings identified themselves.

What do you believe is the significance of the Cival site as a whole?

I think the site is one of the earliest and largest cities of the Preclassic Maya. Its entire ceremonial complex has an important astronomical connotation. It's not coincidence that the central axis of the main buildings and the plaza is oriented to sunrise at the equinox. Their location of 87 degrees east of north corresponds to sunrise on March 25, just four days after the equinox.

The astronomical complex, the offerings and the mask are related to the institution of kingship rather than religion. Cival is large enough to be the capital of a Preclassic kingdom or state. It may have been home to at least 10,000 people and it could be one of the earliest kingdoms in the Maya lowlands.

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More and more evidence is being uncovered that the Preclassic era was one of well-developed states, just as complex as the states in the Classic Maya period. We have found symbols and iconography that mirror the symbolism of kings of the later Classic Maya period.

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For more background read Estrada-Belli's annual field reports for the last four years posted in the reports section on the [Homul website](http://www.vanderbilt.edu/estrada-belli/holmul/).

[<http://www.vanderbilt.edu/estrada-belli/holmul/>]

(Adobe Acrobat reader required).

MAYA FACTS

The word Maya evokes images of mystery — ancient pyramids soaring above trackless jungle, giant carved stones covered with hieroglyphs, a sudden, mysterious demise. The great Maya civilization spanned more than two millennia and then faded, for reasons still not completely understood.

Archaeologists divide the Maya civilization into three main time periods:

Preclassic: Approximately 2000 B.C. to A.D. 250. Borrowing ideas from its neighbors and adding its own ingredients, a population in the Yucatán Peninsula rain forest creates one of the most brilliant civilizations of antiquity. Elaborate rituals arise, and with them ceremonial temples, notably at Nakbe and later El Mirador. A calendar, writing and kingship emerge. But around the first and second centuries A.D., great centers in the lowland forests collapse.

Classic: A.D. 250 to A.D. 900. The great city states of the Maya thrive under rulers who trace their lineage to the gods. Wars between cities rage over political power and control of trade, and with them comes ritual procuring of captives for sacrifice. Palenque, Tikal and Calakmul are centers of power. By the ninth century A.D., Classic Maya lowland cities begin to creak under the weight of their populations, and surrounding natural resources apparently become inadequate. Dynasties collapse; populations decline precipitously.

Postclassic: A.D. 900 to A.D. 1521. While other regions are decaying or all but abandoned, centers of power like Chichén Itzá rule in the north, and trade expands. Nonetheless, Maya cities are beginning to decline as Spaniards arrive on the Yucatán Peninsula shores, ultimately bringing a violent end to this chapter of Maya civilization. Yet the Maya live on today: Millions of Maya descendants in Mexico, Belize, Guatemala, Honduras and El Salvador still speak the Mayan language and observe its rituals.

Latest research on early Maya: Archaeologists are uncovering a sophisticated Maya culture from the Preclassic period that was thriving a full thousand years before the height of the Classic Maya civilization. Finds include:

- Guatemala's once-lost city of El Mirador, where archaeologist Richard Hansen has worked for more than 20 years. Perhaps a hundred thousand people once lived there. El Mirador's temple of Danta is probably one of the largest pyramids in the world, rivaling the great pyramids of Egypt.
- Sixty miles from El Mirador, at the Preclassic site of San Bartolo, archaeologist Bill Saturno has found one of only two great Maya murals known and by far the earliest intact mural. It contains a depiction of origin and creation — a Maya "Sistine Chapel."
- A network of cities thrived in the Preclassic era, including the Maya lowlands city of Cival in today's Guatemala. Cival dates to around 150 B.C. Archaeologist Francisco Estrada-

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Belli has used satellite technology to locate and to determine that Cival is twice as big as initially believed.

BIOSKETCH OF ESTRADA-BELLI

Archaeologist Francisco Estrada-Belli of Guatemala is assistant professor of Mesoamerican Archaeology at Vanderbilt University. Born in Rome, Italy, he decided to become an archaeologist when he became fascinated with the Maya site of Tikal as a young boy living in Guatemala. He went on to graduate with a B.A. cum laude in archaeology and anthropology from the University of Rome in 1991 and received a Ph.D. in archaeology from Boston University in 1998.

Estrada-Belli, 40, has extensive experience studying Maya civilization and landscape use. He also focuses on settlement patterns, remote sensing, computer applications in archaeology and maritime archaeology. He has conducted fieldwork, beginning in 1983, in Italy, New England and Guatemala. His current research includes fieldwork at and around Holmul, an ancient Maya city in the heart of the tropical forest of Petén, Guatemala. Discovered in 1911 by a Harvard University expedition, Holmul has remained largely unexplored since. In 2003, at the nearby ancient Preclassic center of Cival, Estrada-Belli uncovered monumental sculptures and elaborate offerings that shed new light on the earliest beginnings of Maya dynastic symbolism. His discoveries at Cival are highlighted in the National Geographic Special "Dawn of the Maya," which will be broadcast in the United States on PBS on May 12.

Estrada-Belli has written a book monograph on the Archaeology of Southeastern Guatemala and authored or co-authored more than two dozen professional articles and chapters on a variety of topics, including Preclassic, Classic and Postclassic Maya archaeological sites, Maya burial patterns, ceramic trade patterns, ritualized landscapes, and GIS and computerized analytical methods.

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STUDENT FINDS LIFE'S WORK

Molly Morgan discovers life's work in the Guatemalan jungle

Like many freshmen, when Molly Morgan left her home in Peoria, Illinois to come to Vanderbilt, she didn't have an idea of what career she wanted to pursue.

A combination of archaeology and ancient history courses focused her interest on the study of ancient cultures. One of the courses Morgan took was taught by Francisco Estrada-Belli,² who invited her down to his dig in Guatemala. When she experienced life on a dig and got caught up in the search to discover and decipher the meaning of ancient Maya artifacts, she was hooked.

That was in 2001. Immediately after getting her bachelor's degree, she joined the graduate program in archaeology at Vanderbilt. In 2002, she worked at the excavation of the Maya royal palace at Cancuén being run by Arthur A. Demarest³ and acted as laboratory director at a Maya site in Northwest Belize operated by archaeologists from Texas Christian University.

In 2003, she returned to Estrada-Belli's dig just in time to be involved in the recent discoveries at Cival. She is one of a number of Vanderbilt students who have worked at the remote site. Other

² Assistant professor of archaeology

³ Ingram Professor of Anthropology. See story "How Maya kings played ball" [http://exploration.vanderbilt.edu/news/news_maya3.htm]

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graduate students include Jeremy Bauer, who is continuing excavations in the center of Cival, and Jennifer Foley and Justin Ebersole who are working nearby. They are being assisted by undergraduate students Amelia Townsend, Valerie Osbourne and Byron Dubow.

“The last year at Cival has been one of extensive excavation,” Morgan says. She was directly involved in one of two major excavations in the city center where all the temples and pyramids are located: excavating at the foot of the stone monolith bearing the illustration of a Maya king.

The purpose of the excavation was to determine if the current location of the massive stone stela was the position where it was originally erected. The first part of the job involved cleaning up a looter’s trench. But, when that was done, she and her workers began removing the overlying layers of dirt and rock.

“Almost immediately we began to find caches of pottery and other objects that remained from generations of public offerings,” Morgan recounts. When excavating artifacts it is very important to understand their physical relationship with the material in which they are buried. This helps archaeologists date the objects and determine the relationship between different artifacts found in the same area. “The stratigraphy was very complex, with a number of thin layers,” she says. So she called in another graduate student, Jeremy Bauer, to help out. Bauer is an expert in an archaeological technique, called single context planning,⁴ that is largely regarded as one of the most precise methods of excavation.

After about three weeks of hard work – much of the excavation was through solid bedrock so Morgan and her workers were working by hanging over a board laid across the trench or leaning over the sharp edge of the cut – they struck it big. They reached a cache that contained more than 100 jade objects.

It took them another three-and-a-half weeks of painstaking work to extricate all the jade pieces. “It was one of the most exciting things I’ve done in my life,” says Morgan. She and Bauer would get up at the crack of dawn and work on the excavation until nightfall. It might have been exciting, but it also was very hard work, she acknowledges.

The location she was working on was about five minutes down the path from the place where another team was tunneling into the top of a pyramid to uncover a stucco mask that Estrada-Belli had discovered when he fell into a narrow looter’s trench from the other side.

“One day we heard the other crew screaming and shouting,” Morgan says. She and Bauer rushed over to see what the hollering was all about. When they got to the other excavation site and walked to the end of the tunnel, they saw that a portion of the surface of the mask had been uncovered. “It was just amazing! You could see how well it was preserved, but you couldn’t tell how big it was,” she says. It took the team about three weeks to shore-up the tunnel and carefully clear away the rest of the rock so that the entire mask was exposed.

Her parents are both proud of the work that she is doing and a bit fearful of the fact that it takes her to such remote places where she is totally out of touch for long periods of time. Her father is an orthopedic surgeon and her mother raises flowers and acts as a judge at local floral competitions.

“We were very much an outdoorsy family,” Morgan says. “We did a lot of hiking and fishing. My parents instilled my love of the outdoors and my sense of adventure.”

Some of the stories the young archaeologist tells probably haven’t helped her parents’ peace of mind. For example, there was the case at Cival when she and some other archaeologists were walking around the site when no Guatemalans were available to accompany them. Normally, the Americans take locals along because they are so much better at spotting snakes and know how to get rid of them. “We walked right over an enormous, seven-foot-long fer-de-lance.⁵ We didn’t

⁴ For background on single context planning from the University of York, see <http://www.york.ac.uk/depts/arch/strat/1para.html>

⁵ A large pit viper that lives in tropical America

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even know it was there until I felt it move against my foot. When we looked down, we immediately jumped away!" she says.

Although Morgan does not expect to return to Cival except as a visitor, her time there had a definite impact. "At Cival we were exploring one of the earliest Maya sites. That experience has made me want to go even earlier, to the time when the Maya changed from a hunter-gatherer society to one with settled agriculture," she says.

That interest has led her to some pre-Maya sites on the Guatemalan coast that date between 1,500 B.C. and 600 B.C. Although she will be working under the guidance of Arthur Demarest, she will be the only supervisor at the coastal sites.

- David F. Salisbury

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