



Maya Archaeology

ASOCIACION
FLAAR
MESOAMERICA

June 2009

Caves and Mesoamerican Cultures



Entrance to the Candelaria Cave. Photo by Jaime Leonardo

Author: Antonieta Cajas / Editor: Cristina Guirola
FLAAR Mesoamerica, copyright 2009



The caves in Mesoamerican cultures

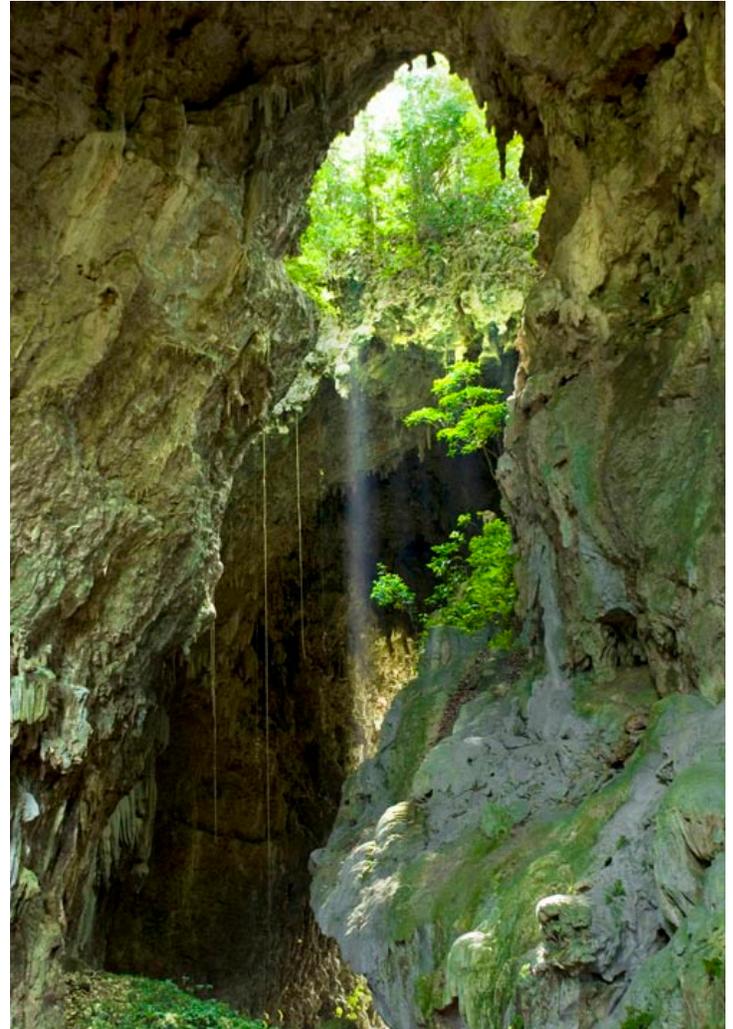
Keywords: Caves, underworld, Xibalba, Popol Vuh, Mesoamerica, codices, sacred spaces, q'eqchi', k'iche', Naj Tunich, Candelaria, ritual, ceremonies, ball game, deities, iconography.

Here are the front covers of the other FLAAR Reports that resulted from a one week field trip to the caves of the Mucbilha area, in Alta Verapaz. These other FLAAR Reports show the digital photography equipment that was used for the photography in the caves.

Initially, caves operated as temporary shelter and as sites of room, especially during the Paleoindian (15,000 – 9,000 B.C.), when human groups lived as nomads. Over time, caves acquired other meanings, became sacred places, burials enclosures, spaces for the celebration of rituals of passage, astronomical observatories, as input to the Underworld and for the extraction of mineral resources (Manzanilla; 1994).

In the introduction of Henry Marces, "The hill-caves of Yucatan", Thompson (1975) elaborates eight named and numbered functions of caves (Brady & Prufer: 2005: 2):

1. Sources of drinking water;
2. Sources of "virgin" water for religious rites;
3. Religious rites;
4. Burials, ossuaries, and cremations;
5. Art galleries, perhaps in connection with religious rites;
6. Depositories of ceremonially discarded utensils;
7. Places of refuge (a minor use); and
8. Other uses.



Entrance to the Candelaria Cave. Photo by J. Leonardo, FLAAR Mesoamerica. Copyright 2009.

It is possible that Thompson saw each cave as having a single, narrowly defined function. Still, he was one of the first to give this kind of uses to caves.

The caves have been mainly related to ceremonial activities, and are even mentioned in literary and iconographic



representations embodied in pre-Hispanic motifs on stone sculptures and ceramics.

The caves, a natural resource

The history of cave investigation can be traced back to more than 150 years, beginning with memorable descriptions by Stephens and Catherwood of such caves as Bolonchen and the Gruta de Chac. After their records, continued on cave investigations Thompson, Gordon, Seler, Brady, Stone, among others (Brady & Prufer; 2005: 1-3).

As mentioned before, some caves were used as residences, especially when human groups live in a nomadic form, but in Mexico, the Valley of Teotihuacan, Texcoco and other regions, even during the Postclassic period, some nomadic caves continued to be used as residential premises, and were known as Óztotl, which in Nahuatl means “Cave” (Manzanilla; 1994).

Also caves, as natural resources, have a variety of minerals that men can use. For instance, in the caves of the Valley of Teotihuacán there can be found a resource of volcanic materials and clay for extraction, used to build the foundations and walls of structures that formed the city of Teotihuacán.

The Maya caves were also a source of minerals, which were used in the production of ceramic and abrasive polishing stone



MucbilHa Cave in Alta Verapaz, photo by J. Leonardo. FLAAR Mesoamerica. Copyright 2009.



artifacts. Such is the case of Loltún caves in southern Yucatan, which so far is one of the caves that has presented evidence with the largest occupation there is, and where it was found several artifacts and skeletal remains that correspond to the Pleistocene (Manzanilla; 1994).

The caves in mythology

The caves were attributed as the center of origin of mankind, the sun, water, darkness, corn and other elements of nature. In stories about the origin of the Aztec people, Toltec Chichimecas from the Valley of Mexico, speak about the existence of a mythological place called Chicomoztoc, which translates as “place of seven caves”. This mythical place, which is still in discussion about its authenticity, was considered the center origin in the world, which from there left the seven tribes that populated the earth.

Places of mythical origins, like Chicomoztoc, are mentioned in several pre-Columbian and colonial chronicles, such as “Tira de la peregrinación”, Azcatitlán codex, Annals of the Kaqchikel, the Popol Vuh, among others. The Popol Vuh mentions the existence of the Underworld, called Xibalba. The underworld is closely associated with the caves, which are considered an entrance to the underground world governed by spirits and deities of death, disease, water and fertility. Xibalba by the Maya is conceived as a duality, which is part of the world, the realm of night and darkness, inhabited by the gods who give life and death to all beings of the water and earth.



MucbilHa Cave in Alta Verapaz, Photo by Jaime Leonardo. FLAAR Mesoamerica. Copyright 2009.



Hun-Hunahpu and Vucub-Hunahpu go to the Underworld to face the lords of Xibalba, but they can't beat them, and are defeated. Years later, Hunahpu and Ixbalanque, sons of Hun-Hunahpu and Vucub-Hunahpu, are playing ball in the earth's surface, and the sound turns mad the lords of Xibalba, so they dived to called the twins so they can play ball with them, but what they really want is to defeat them and killed them, just like they did with their fathers.

In order to get to Xibalbá, the twins had to descend into a gully, pass a river of blood, and pass it without drinking its water; passing through prickly valleys and slope paths; going through four roads, one that is black, the entrance of the Underworld. When Hunahpu and Ixbalanque arrived to Xibalbá, they are challenged to make several tasks during seven days and seven nights inside the different houses that Xibalbá has, like the house of Gloom, the house Xuxulim Ha (where everybody shivered), the house of bats, among others. The Part II in chapter I text will in Popol Vuh says:



Road to the entrance of Xibalba. Photo by Jaime Leonardo. FLAAR Mesoamerica, copyright 2009

"What are they doing on earth? Who are they, who are making the earth shake, and making so much noise? Go and call them! Let them come here to play ball. Here we will overpower them! We are no longer respected by them. They no longer have consideration, of fear of our rank, and they even fight above our heads"...

..."Hun Hunahpú and Vucub Hunahpú went immediately and the messengers took the on the road. Thus they were descending the road to Xibalbá, by some very steep stairs. They went down until they came to the bank of a river which flowed rapidly between the ravines called Nuziván cul and Cuziván, and crossed it. Then they crossed the river which flows among thorny calabash trees. There where very many calabach trees, but they passed through them without hurting themselves".

"Then they come to the bank of a river of blood and crossed it without drinking its waters; they only went to the river bank and so they were not over come. They went on until they came to were four roads joined, and there at the crossroads they were overcome".

"One of the four roads was red, another black, another white, and another yellow. An the black road say to them: I am the one you must take because I am the way of the Lord. So said the road... They were brought by road to Xibalba".



...”There were many punishments in *Xibalbá*; the punishments were of many kinds”.

“The first was the house of Gloom, *Quequmaq ha*, in which there was only darkness”.

“The second was *Xuxulim ha*, the house where everybody shivered, in which there were nothing but jaguars which stalked about, jumped around, roared, and made fun. The jaguars were shut up in the house”.

“*Zotzhi ha*, the House of Bats, the fourth place of punishments was called. Within this house there nothing but bats which squeaked and cried and flew around and around. The bats were shut in and could not get out”.

The fifth was called *Chayim ha*, the House of Knives, in which there were only sharp, pointed knives, silent or granting against each other in the house (Recinos, Goetz and Morley; 1978, pp 117)”.



*The water was considered an important elemento to the Maya Underworld
Photo by Eduardo Sacayon. FLAAR Mesoamerica, copyright 2009*



According to the stories of the Popol Vuh, it is clear that to reach the underworld, it was necessary to descend into the earth. According to the notes of Recinos, the Popol Vuh authors find some of the facts and mythology of Xibalba's location in regions of Alta Verapaz. For instance, Nim Xob Carchá, the place where Hun Hunahpu and Vucub Hunahpu are playing ball, is probably the town Carchá, which still retains its old name and is located in Alta Verapaz. And according to Recinos, A cut Zivan, one of the places they had to cross to reach Xibalbá, is translated as "my ravine" or simply "ravine". And in the regions of Peten and Alta Verapaz, Zivan is called the underground caves (Goetz & Morley; 1978).

So Recinos believes that the K'iche's wrote the Popol Vuh and were aware of the location of Xibalba, a place very deep underground. To get there, was necessary to descend from the mountains and through canyons of narrow paths, which also had to go through several fast-flowing rivers. And as it's mentioned above, many of the places mentioned on the Popol Vuh are referring to regions of Alta Verapaz. These regions are a karst area, with cloaks of groundwater, which is also important in the cosmology of the Maya.



The Mayas used the dotted undulating lines to represent the surface of the netherworld watery area (Hellmuth 1987). MucbilHa Cave Photo by Jaime Leonardo. FLAAR Mesoamerica, copyright 2009

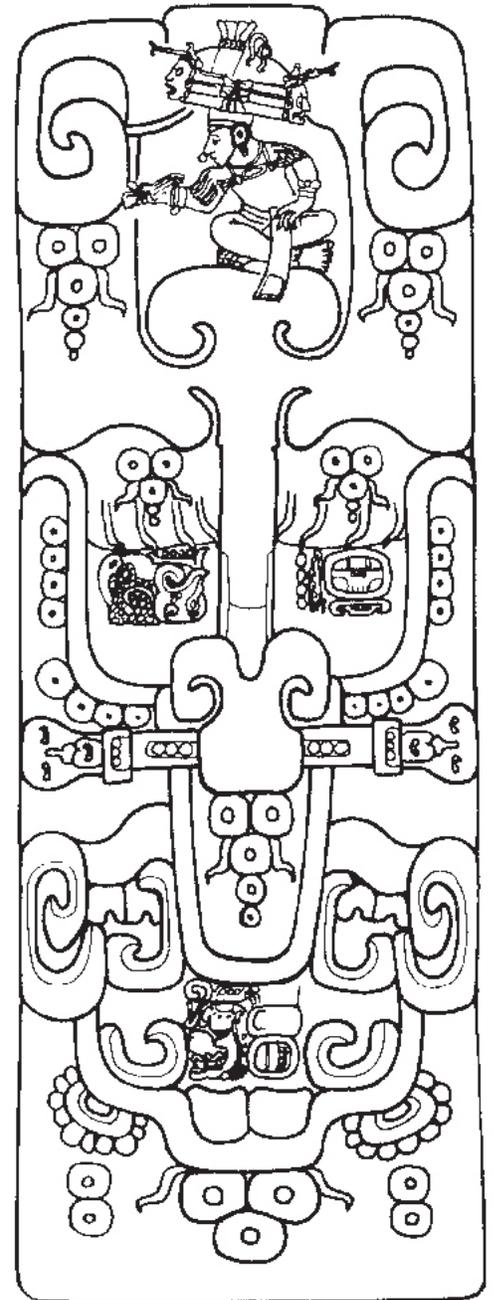


There are many caves in the regions of Alta Verapaz, like the Candelaria caves in Chisec, “here the river has formed an amazingly complex system of impressive caverns and passages, occasionally lighted by skylights and caves that penetrate from the surface” (Stocks; 2002). The Candelaria River emerges from a karst mountainous area with elevations of up to 800 meters. This goes a few miles down the valley as a normal flow, then re-enters the earth, to the mountains of San Simon, in the community of Candelaria. Again emerges from the darkness, and returns inside the caves of Candelaria seven times by a 13km underground route before returning them to the surface in the community of San Antonio Flores. From there it joins the San Simon River to become a tributary of the Pasion River (Stocks; 2002).

The similarities found by Recinos among the names of some of the places mentioned in the Popol Vuh, with regions of Alta Verapaz which still retain their name, are quite fascinating to consider that the K’iche’, the Popol Vuh authors had a geographical location of the mythological narratives. These similarities between physical and territorial and mythological could sustain with ethnographic and archaeological evidence found in the caves of Candelaria, which historically is still considered a sacred place in the ritual activities that are held by groups of Mayan descent (Stocks; 2002)

As we seen before, the caves are associated with the underworld or Xibalba (in the Maya ideology). And within this relation we can find several symbols associated with the underworld, like animals and plants. Among the animals we can find the Jaguar, which is considered as God of the Underworld, and is represented as a kind of feline with a rosette between the eyes and a beard or whiskers that has in the cheeks; and we can also find the crocodile, the snakes and toads (Hellmuth, 1987).

We can also find plants that are associated with the Underworld, like the Water lily (*Nymphaea ampla*), which is associated with the entrance to the Underworld, and it can be also interpreted as the connection between our world and the Underworld. And the cacao (*Theobroma cacao* L.), which is associated also with water, fertility, and with the jaguar (also the water lily is associated with the jaguar and the snake) (Barrios & Tokovinine; 2005).



The Cauac Monster with quatrefoil underworld entrance as mouth. If Cauac includes the meaning of tun “stone”, the animated stone is an appropriate the surrounding for a cave entrance, Copan Stela B. In Monster und Menschen, Hellmuth 1987



This scene shows that the Naj Tunich in the caves were associated with fertility rituals, Photo by Cristina Guirola.

The cacao can be mentioned in the myths of creation of the popolucas¹. In the entrance of the Underworld they describe a tree of cacao, which the dead must go inside of it, but in order to do that, they must drink chocolate when they were alive (Manzanilla; 1994).

Sacred spaces

For a long time, caves were considered sacred, and during pre-Hispanic times play a very important role in the astronomical and religious ceremonies of both public and private. From this you can find some quotes in the Popol Vuh, as well as the existence of artifacts, ceremonial utensils and wall paintings found in archaeological contexts, evidence by this ceremonial role, and its relationship with the underworld.

The caves or grottos were also associated with funerary activities. In Oaxaca there are several regions of caves from the Postclassic period, which served as burial enclosures. Inside you will find skeletons surrounded by sumptuous offerings that apparently belonged to members of the elite (Barbas, et al.).

There is also the cave of *Naj Tunich*, which is located in Petén, Guatemala, and provides more information

on the iconography of the underworld, and the role it had for the sacred precincts in Maya elite. This cave has a record of 35 hieroglyphic texts, 44 figures and 80 drawings that were made by the Maya during the Late Classic, as well as pottery and other archaeological artifacts. Some of the images suggest scenes with sexual implication, which were possibly part of a fertility rite of passage or a representation of those who made sacrifices of blood (Stone; 1991).

In another scene a character is shown in front of a bowl emanating smoke, probably is burning copal, a very common activity in the observance of any ceremony or even today. There can be found four scenes that refer to the ball game and several glyphs that refer to a ceremonial game (Stone; 1991). This is very important because it reaffirms the relation of the ball game with the underworld, as shown in the Popol Vuh.



Glyphs of Naj Tunich Cave. Photo by Cristina Guirola

¹ Popolucas: nahuatl name that means foreign. They were probably olmec descendants, with the mixes.



For the ancient and modern Maya, the caves have been considered to be sacred spaces. Photo by Jaime Leonardo. FLAAR Mesoamerica, copyright 2009

It can be also said, that several of the images represented in Naj Tunich show ritual activities that possibly occurred in the bedrooms of the cave. In other caves in the Maya area there have been also found archaeological evidence and pottery artifacts that are used in ceremonial activities.

In the Highlands of Guatemala, the K'iche' site of the Postclassic period, Q'um'arqaj, has four artificial caves. In these caves were found fragments of ceremonial pottery, obsidian and other elements associated with ritual activities, indicating that were built for this purpose. One of the caves passes under the main square and ends just below the main building, the Temple Tojil². There are also other K'ich'e caves, that probably were built to represent the three planes of the cosmogony, the celestial, the terrestrial and the underworld. These caves were found near cliffs, in areas near the rivers, and probably had a relation with water too (Macario; 2006).

There is another aspect of cave use that could clearly indicate the social importance of subterranean features is the relationship between caves and surface architecture. Like the cave that is beneath the Pyramid of the Sun at Teotihuacan (Brady & Prufer; 2005: 4). Doris Heyden studies this cave, and does a series of investigation about it; she explores the possibility that

caves were regularly used in rites of passage, and that they played a role in a number of rituals from birth to death. These ceremonies may have been some of the most important in the society. She is probably the first to suggest that at least a portion of the ascension ritual of ruler was held in caves (Brady & Prufer; 2005: 4).

The pattern of cave construction replicates the association of architecture noted with natural caves; it provides convincing evidence that the placement was intentional—examples can be found in Teotihuacan, Xochicalco, Zaculeu, Uxatlán (Q'um'arqaj), La Lagunita, and Mixco Viejo- (Prufer & Brady; 2005: 405).

² Tojil or Tohil: god of the K'iche' families. Tedlock relates him with the K'awil god.



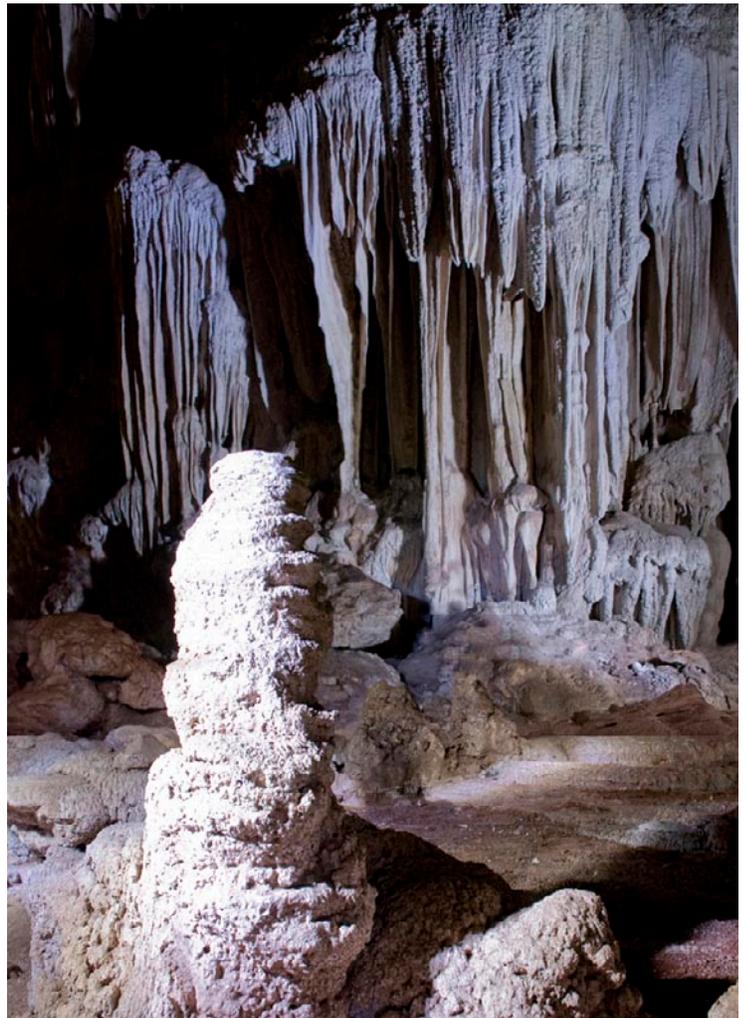
There is no aspect of Mesoamerican life that is not linked to the belief in a living world, the central features of which are the powerful symbols of mountains, water, and caves. Caves are points of access to the central focuses of these belief systems. The true sources of power exist inside the mountain, in a mythical time and place that has been vividly portrayed in all available mediums since the dawning of social history. Caves are portals –places where humans have attempted to intervene and mediate with the forces that make the universe animate (Brady & Prufer; 2005: 8-9).

Caves have an importance and power shown in the core of the pan-Mesoamerican ideology. This can be seen, for example, in the ethnohistorical map of Cuauhtinchan, showing a cave complex found at Acatzingo Viejo, Puebla. The Coixtlahuaca codices extol place and place-making by referring to the earth's creation, especially to two unique landforms (a hill and the cave) found in the basin considered to be evidence for this event. Allusions to these two landforms occur over and over in the Coixtlahuaca sixteenth-century painted documents. Their eventual appropriation, in a reenactment of creation, appears to be of central importance to the foundation of the Chocho village in the Coixtlahuaca Basin (Prufer & Brady; 2005: 404).

The use of caves in the present

Caves are conceptually linked with mountains. A q'eqchi' maya states explicitly, "among four or five mountains there is always one that is most important, especially if it has caves. If it has caves it is most powerful because it has water". Together, mountains and caves are directly associated with ancestors, health, and personal and political success (Prufer & Brady; 2005: 405-406).

All the caves in the Mesoamerican region are accessible to groups of any ethnic group, and are used for activities that include rituals and animal sacrifices associated with demands of something good or bad for someone, for health, harvest, etc., or to acknowledge an event.



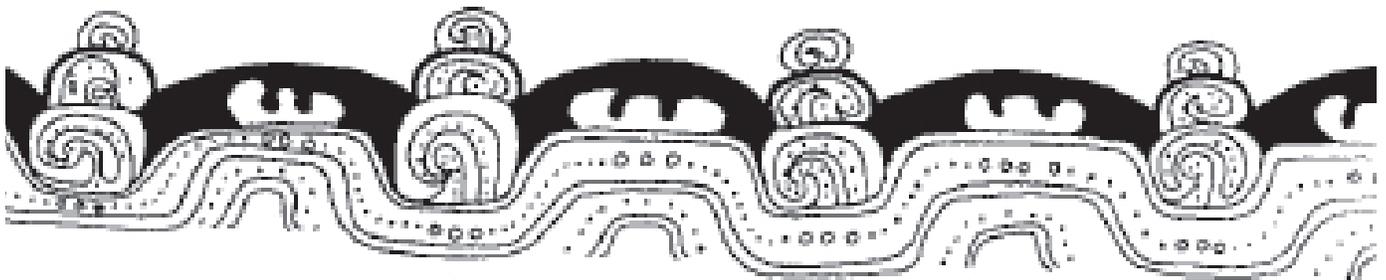
In all the Alta Verapaz's caves they have found archaeological evidences related to ritual activities realized by the ancient Maya. Photo by Jaime Leonardo, FLAAR Mesoamerica, copyright 2009



Today, caves are seen by most Mesoamerican people as points of emergence and refuge in creation myths, as avenues of communication with revered ancestors, and as feared places where human agency can produce uncertain consequences. This was also true in the historical past. The seventeenth-century kaqchikel manuscript *Annals of the Cakchiquels* refers to Xibalba as an underground kingdom of great riches and power. The Florentine Codex states that, among the Nahua, the dead –accompanied by offerings of pottery, paper, incense, and cloth –and a little yellow dog passed through a place “where the mountains come together” on the way to Mictlan (the underworld). Sahagún further lists eight types of caves that were socially significant to the Aztec. These are discerned both by physical characteristics (size, number of passages, presence of water, geological formation) and by function (spying place, terrifying place, place of the dead, place of darkness) (Prufer & Brady; 2005: 407).

For the Q’eqchi’ of Alta Verapaz, the mountain is inhabited by natural beings, and they are being sheltered by a lord or the holy mountain. This character is regarded as the owner of all those who have to ask permission to make use of some natural resource, which is near his *pech rochoch*³ (stone house or cave), where the sun, water, trees and animals are born. If you not asked permission, *Tzuultaq’a* sends strong winds, hail, bats, crop failure, and other things that affect the work or health.

In the Q’eqchi’ cosmovision, the *Tzuultaq’a* is comprised of thirteen people who live in thirteen major hills and caves. The translation is “hill-valley”, but in the Q’eqchi’, this word is closely related to the hills and caves as a sacred space. Usually the rituals that are performed during the agricultural cycle are composed of pilgrimages to visit the thirteen regional hills and caves. During the ceremonies, pilgrimages are made in the roads and in caves where they make offerings of *mayejac*⁴ for *Tzuultaq’a* (Adams & Brady; 1994).



Underwaterworld Representation in Maya pottery designs. Draw in Monster und Menschen, Hellmuth 1987.

³ This is in q’eqchi’ language; *pec* is stone, and *rochoch* is house.

⁴ *Mayejac*: offering (in q’eqchi’ language).



The ceremonies prior to the planting of corn consist of several processes involving men and women, but with certain restrictions of gender to participate:

- To carry out the rituals in the caves, they practice the sexual abstinence.
- Women are involved in collecting *mayejac* (offerings).
- The night before the pilgrimage, women participate in the cooking, while men are preparing the offerings of the altar.
- On the morning men do prayers and make a point of pilgrimage in regional caves, and even visit other holy sites in neighboring communities.
- Upon entering the cave, they make bows for the thirteen *Tzuultaq'a* and offer incense, candles, food, drinks and other offerings, and make their requests to pray for good harvests, health, and rainfall, among others (Adams & Brady; 1994).

Some of the elements of the offerings that use the *pom* (copal) are q'eqchi', candles, cocoa beans, broth, flowers, boxwood, corn, ceramic vases and incense burners, turkeys or chickens for the blood offerings (Adams & Brady; 1994).

Comments

Many of the caves located in sites are accessible and were used by the Maya and other pre-Columbian groups from the Mesoamerican region. These caves are still important and are still regarded as sacred. Year after year, is easy to observe pilgrims from different ethnic groups, including visitors from distant regions who come to make their requests to the “owners of the hills”.

Despite the clash of cultures totally opposite culturally (Spanish and Mesoamerican groups), and the religious syncretism that emerged from this clash, the complement of archaeological and ethnohistorical data has allowed the understanding of the beliefs of the cultural groups that inhabited Mesoamerica during the pre-Hispanic times and part of history of their contemporary descendants.

It is important to know that caves had and still have an important role in the cosmology and ideology of the Maya and other indigenous groups. Caves are related to the underworld, and with the myths of creation for several of the cultural groups in Mesoamerica. Caves are associated with many elements and symbols that can be found all over Mesoamerica –as iconography, for example-, like water, fertility, certain plants, animals, gods, etc.

It is yet much to learn about caves, which are the key to understand more about the ideological and religious point of view of the many pre-Hispanic groups that lived in Mesoamerica.



Underwaterworld Representation in Maya pottery designs. Draw in Monster und Menschen, Hellmuth 1987.



The following chart shows some of the most important caves that can be found in the Mesoamerican region:

Mesoamerican Sacred Caves				
Caves	Culture	Location	Period	Function
Mythological Cave	Quiché	Mythological Site	Pre-Hispanic	Entrance to Underworld
Chicomoztoc	Aztecs, Toltec's, Maya	Mythological Site	Pre-Hispanic	Origin of the seven tribes of the world site.
Loltún	Maya Puuc	Yucatán, Mexico	Pleistocene up to the Classic Period	Refuge, religious center and extraction of clays and minerals.
Texcoco	Chichimeca	México	Post-Classic	Housing
Cueva de los Andasolos	Still unknown	Chiapas, México	Late Classic	Worship to the god the Sun
Xochicalco	Xochicalcas	Morelos, México	Late Classic	Astronomical observatory
Cueva astronómica	Mexicas	México	Classic Period	Astronomical observatory
Naj Tunich	Mayas	Petén, Guatemala	Pre-Classic Period, Classic and contemporary	Funerary and ceremonial
Candelaria	Mayas	Alta Verapaz, Guatemala	Classic Period and contemporary	Funerary and ceremonial
Q'um'arkaj	Quichés	Quiché, Guatemala	Post-Classic and contemporary	Ceremonial (artificial cave)
B'omb'il Pek	Mayas	Alta Verapaz, Guatemala	Classic Period and contemporary	Ceremonial
Hun Nal Ye	Mayas	Alta Verapaz, Guatemala	Pre-Classic and Classic Priod	Ceremonial
Cuevas de Dos Pilas	Mayas	Petén, Guatemala	Pre-Classic Period, Classic and contemporary	Funerary and ceremonial
Juxtlahuaca	Probably Olmec	Guerrero, Mexico	Pre-Classic period	Probably ceremonial, with a restricted access
Oxtotitlán	Probably Olmec	Guerrero, Mexico	Pre-Classic period	Ceremonial, with a open access, and probably related with the residential zone



Bibliography

ADAMS, Abigail and James E. BRADY

1994 "Etnografía Q'eqchi' de los ritos en cuevas: implicaciones para la interpretación arqueológica". VII Simposio de Investigaciones Arqueológicas en Guatemala. Juan Pedro Laporte and Héctor L. Escobedo A., editors. Ministerio de Cultura y Deportes, Instituto de Antropología e Historia, and Asociación Tikal. Guatemala. Pp: 205-211.

2006 "Going to ground Stone houses and earth lords: maya religion in cave context". Cambridge Archaeological Journal, no. 16. **Keith M. PRUFER & James E. BRADY**, editors (2005). Boulder (CO): University Press of Colorado. United States. Pp: 356-358.

BARBAS A., Winter MARCUS; et al.

No year publication "La cueva del diablo: creencias y rituales de ayer y de hoy entre los zapotecos de Mitla, Oaxaca". Cuadernillo del Instituto Nacional de Antropología e Historia, México.

BARROIS, Ramzy R. y Alexandre TOKOVININE

2005 "El inframundo y el mundo celestial en el juego de pelota maya". XVIII Simposio de Investigaciones Arqueológicas en Guatemala (2004). Juan Pedro Laporte, Bárbara Arroyo y Héctor Mejía, editors. Museo Nacional de Arqueología y Etnología. Guatemala. Pp: 27-38.

BRADY, James

1989 "An investigation of maya ritual cave use with special reference to Naj Tunich, Peten, Guatemala". Doctoral thesis. University of California, Los Angeles. United States.

BRADY, James E. & Keith M. PRUFER

2005 "Chapter 1. Introduction: a history of Mesoamerican cave interpretation". In the Maw of the earth monster, Mesoamerican ritual cave use. James E. Brady & Keith M. Prufer (editors). University of Texas Press. Austin, United States. Pp: 1-17.

CAROT, Patricia

1989 "Arqueología de las cuevas del norte de Alta Verapaz". Cuadernos de Estudios Guatemaltecos, No. 1. CEMCA. México.

GOETZ Delia and Sylvanus G. MORLEY [from the translations of Adrian Recinos]

1978 Popol Vuh: the sacred ancient book of the Quiche Maya. University of Oklahoma Press. United States.



MACARIO CÁLGUA, Raquel M.

2006 “La configuración sociopolítica en la ciudad de Q’um’arkaj: los palacios y los nimja o casas largas del Chinamit Nija’ib”. FAMSI. Guatemala.

MANZANILLA, Linda

1994 “Las cuevas en el mundo Mesoamericano”. Revista “Ciencias”, no. 36, Octubre-Diciembre. Facultad de Ciencias, UNAM. México. Pp: 59-66.

PRUFER, Keith M. & Brady, JAMES E.

2005 “Chapter 16. Concluding comments”. In the maw of the earth monster, Mesoamerican ritual cave use. James E. Brady & Keith M. Prufer (editors). University of Texas Press. Austin, United States. Pp: 403-408.

STOCKS, A.

2002 “The struggle for Q’eqchi community conservation and management of Mayan sacred (cave) sites: the case of Caves of Candelaria and Bombil pek in Alta Verapaz, Guatemala”. Protecting the Cultural and Natural Heritage in the Western Hemisphere: Lessons from the Past; Looking to the Future. Cambridge, MA, Harvard University. United States.

THOMPSON, J. Eric S., Sir

1975 “Introduction”. The hill-caves of Yucatan, a search for evidence of man’s antiquity in cavers of central America. Henry C. Mercer (author). University of Oklahoma Press. Norman. United States. Pp: vii-xliv.



Here are the front covers of the other FLAAR Reports that resulted from a one week field trip to the caves of the Mucbilha area, in Alta Verapaz. These other FLAAR Reports show the digital photography equipment that was used for the photography in the caves.

FLAAR is a research institute dedicated to assisting anthropologists, museum personnel, students, scholars, and the interested public to learn about pre-Columbian cultures of Mesoamerica through the usage of advanced digital imaging hardware and software.

You can learn more about the camera equipment by looking at www.digital-photography.org.



ASOCIACION
FLAAR
MESOAMERICA

The Caves in Mesoamerican Cultures