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## **Analysis and Conservation of a Wooden Figurine Recovered from Xmuqlebal Xheton Cave in Southern Belize, C.A.**



**Research Year:** 1999

**Culture:** Maya

**Chronology:** Late Classic

**Location:** Mountains of Southern Belize

**Site:** Xmuqlebal Xheton Cave

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## Introduction

In 1999 a small wooden figurine was recovered from a cave located near the Late Classic center of Muklebal Tzul in the Maya Mountains of southern Belize. The form of the artifact indicates that it may be a 'manikin scepter,' an image depicted in Late Classic art that has been described an emblem of divine kingship. The context of its recovery combined with current knowledge of the function of other wooden ceremonial figurines during the Postclassic and historic periods may broaden our understanding of how staffs, scepters, and figurines were used in Maya prehistory.

The figurine is quite small, measuring 23 cm in length. It depicts a male individual, clothed in a loincloth or skirt. He is holding a fan in the left hand and was holding an object in the right hand, which has broken away, likely in antiquity, and was not found. The back of the artifact is deeply fluted, and it was at one time likely intended to have been affixed to a ceremonial staff or stave. The artifact was carved from a single piece of wood that has been tentatively identified as from the tropical cedar family (*Cedrela* sp.).

With the assistance of the Foundation for the Advancement of Mesoamerican Studies, Inc. (FAMSI), the object was removed from Belize for analysis and conservation at the Smithsonian Center for Materials Research and Education (SCMRE). This report briefly discusses the archaeology of the cave from which it was recovered, preliminary observations on the iconography of the object, and the results of laboratory analysis.

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## The Setting

The Maya Mountains of southern Belize constitute one of the last regions in the entire Maya area to be explored ([Figure 1](#)). The only prominent range in the lowlands, it has the highest rainfall and coolest temperatures. Largely a carbonate massif overlaying older igneous formations, the region is home to a variety of biological and mineral resources unavailable elsewhere in the lowlands. Though the interior of the mountains was largely unoccupied at the time of Spanish contact, it has been long known that the foothills were home to several important ruins, including Lubaantun, Nimli Punit, and Pusilhá (Gann 1925; Hammond 1970; Leventhal 1990; Wanyerka 1996). Nevertheless, despite the impressive history of these nearby sites and the likelihood that additional sites were located in the interior, the Maya Mountains have until recently received relatively little attention from prehistorians (Dunham and Prufer 1998; Prufer and Wanyerka 2001).

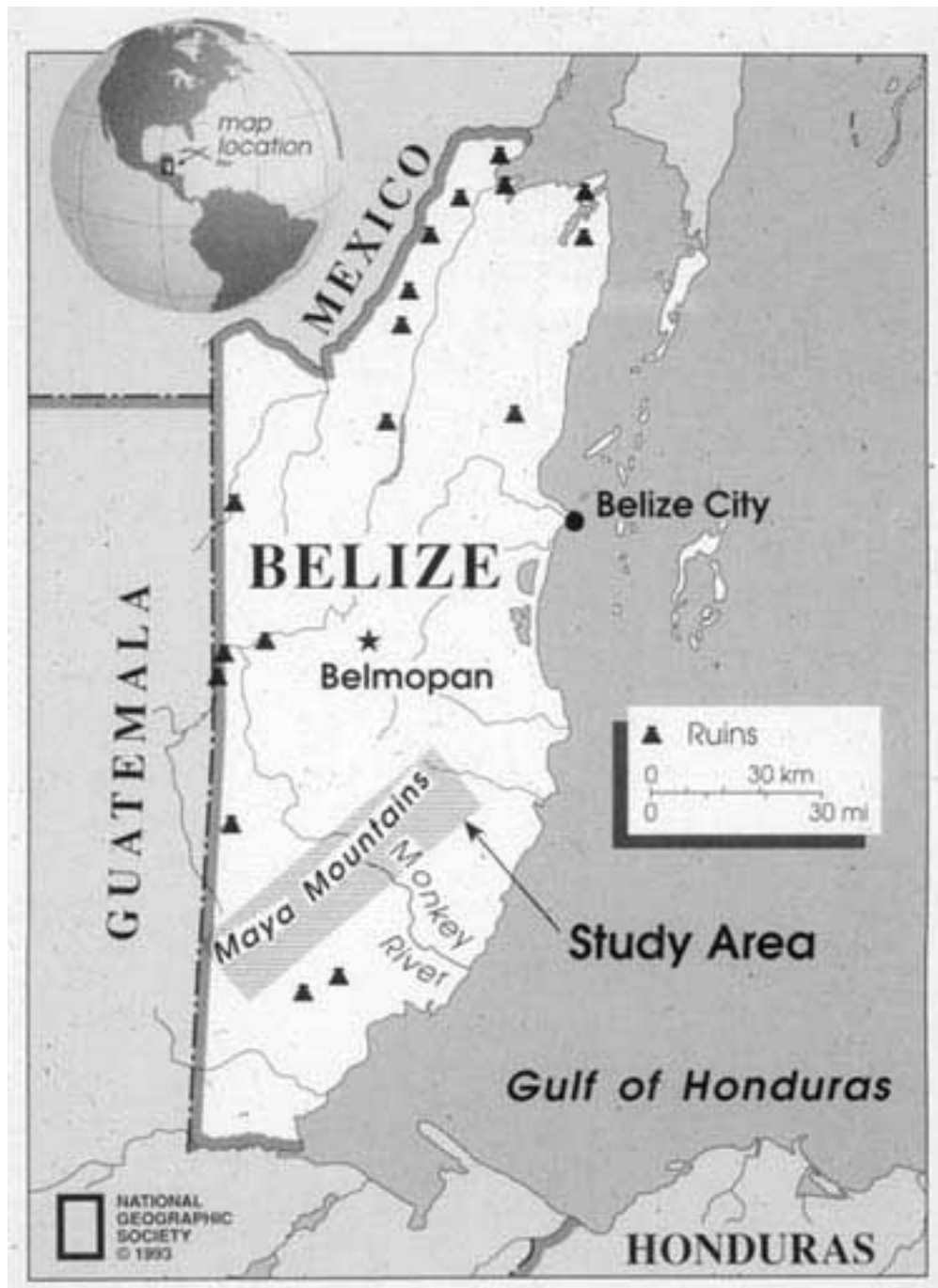


Figure 1. Location of the Maya Mountains and the MMAP study area.

Today, the interior region is a vast uninhabited wilderness. Its extremely rugged terrain makes access difficult. As recently as the 1980's the region was thought to have been sparsely populated and of little importance in the dynamic Classic Period growth of polities in the Maya area. Since 1992 a total of 16 previously undocumented pre-

Columbian communities and over 100 cave sites have been investigated by the Maya Mountains Archaeological Project (MMAP) under the direction of Peter Dunham and the Maya Mountains Ritual Caves Project (MMRCP), directed by Keith M. Prufer.

The ruins are distributed across a wide variety of landforms and forest types, and seem to be evenly spaced to take maximum advantage of local resources. With minor variations, two generalized types of settlement patterns have been identified in the distribution of these sites: nucleated settlements located in alluvial valleys near year round streams, and ridge top settlements where architectural groups are spread across the spines of low ridges, with the site cores generally located atop the most prominent ridge.

Since 1996 attention has been focused on intensive investigations at two minor centers near the headwaters of the Monkey River in the Bladen Forest reserve. These sites, Muklebal Tzul and Ek Xux, are both literally surrounded by caves. A total of 56 caves have been investigated in the hills surrounding the settlement of these two sites (Prufer 2001). It is at a cave near the northwestern edge of the Muklebal Tzul Valley that the figurine was found.

The recovery of wooden artifacts is rare in the Maya Lowlands. However, other materials fashioned from wood have been recovered from the region. In 1995 a small wooden stool was found in a mortuary cave 25 km north of the site Pusilhá in southwestern Belize (Prufer and Dunham n.d.). The artifact dates to the Early Classic, approximately A.D. 250. It greatly resembles late Postclassic stools dredged from the Cenote of Sacrifice at Chichén Itzá (Coggins and Ladd 1992:302-303). Also in 1995 a six-foot wooden bench was found in a cave near Muklebal Tzul. While radiocarbon analysis of it is pending, associated ceramics indicate a date in the Late Classic period. Other notable organic cave finds from the region include preserved cacao beans, intact wooden torches, a bird egg, and hundreds of wood fragments, most likely the remains of incense burning. The caves of the Maya Mountains offer an unprecedented opportunity to examine the role of botanical materials in ancient Maya cave rituals.

### **The Archaeology of Xmuqlebal Xheton Cave**

Xmuqlebal Xheton is a 250 m long passage located on a crest between two hills overlooking the site Muklebal Tzul. It is situated approximately 1100 meters from the site core ([Figure 2](#)) and is the northwestern most cave in the Muklebal Tzul valley, with no settlement identified beyond it. The nearest settlement to the cave is a 2 km long ridgetop group approximately 500 meters to the east of the cave. This settlement group contains a small stela plaza, though none of the monuments were carved (Mustain 2001).

The cave was first discovered in March 1999, during a regional cave survey of the area surrounding Muklebal Tzul. Access to the cave is difficult. It requires a steep climb over

boulders followed by a 15 m near-vertical drop into a series of chambers, all of which were heavily utilized by the ancient Maya.

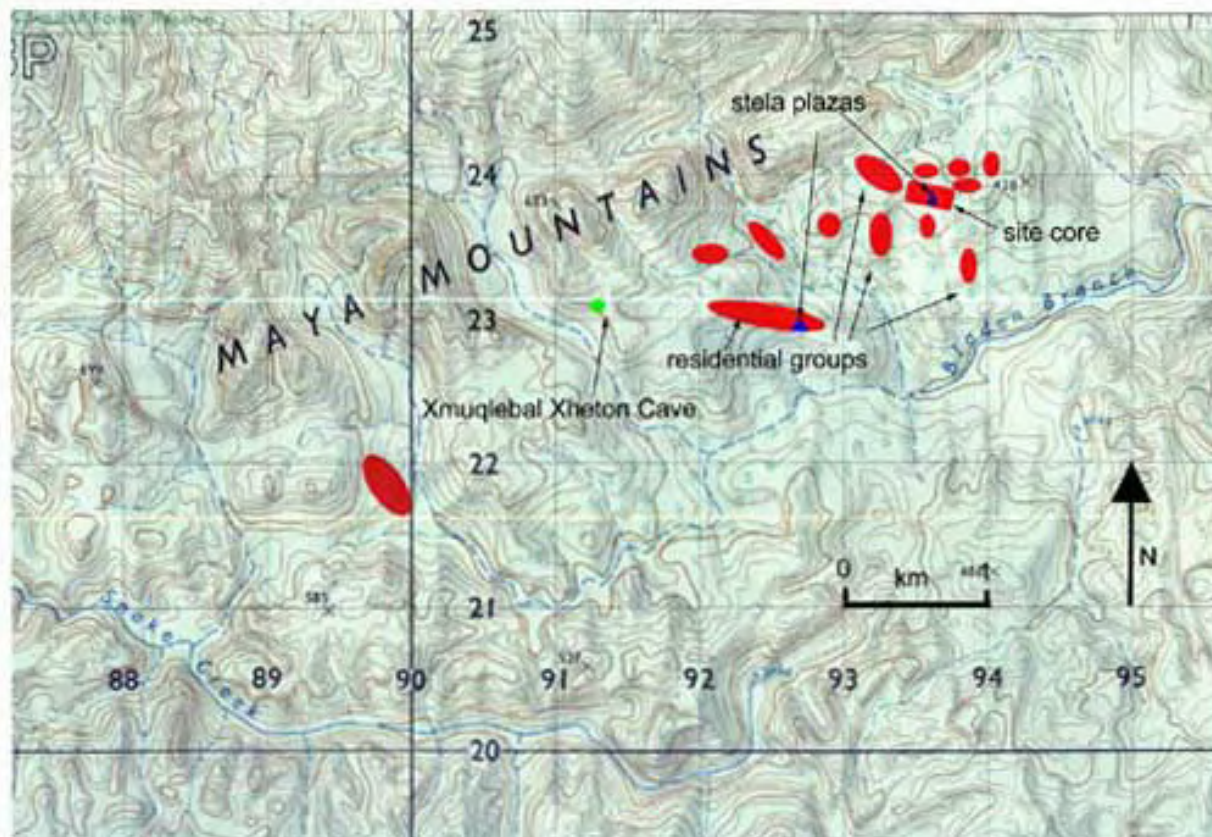


Figure 2. Map showing settlement groups at Muklebal Tzul in relation to Xmuqlebal Xheton Cave.

During the investigation, Xmuqlebal Xheton was divided into eight discrete activity areas (suboperations), all of which were clearly bounded physical spaces. These can be seen in [Figure 3](#) and [Figure 4](#). The entrance area to the cave had no evidence of cultural activity, which is surprising given that most caves within the Maya Mountains have evidence of offerings left within semi-lit areas near their entrances. The first cultural materials were not encountered until one had descended an initial 15-meter drop into the lower level of the cave. From that point onward, every chamber in the cave was utilized. Below, I briefly summarize the eight suboperations.

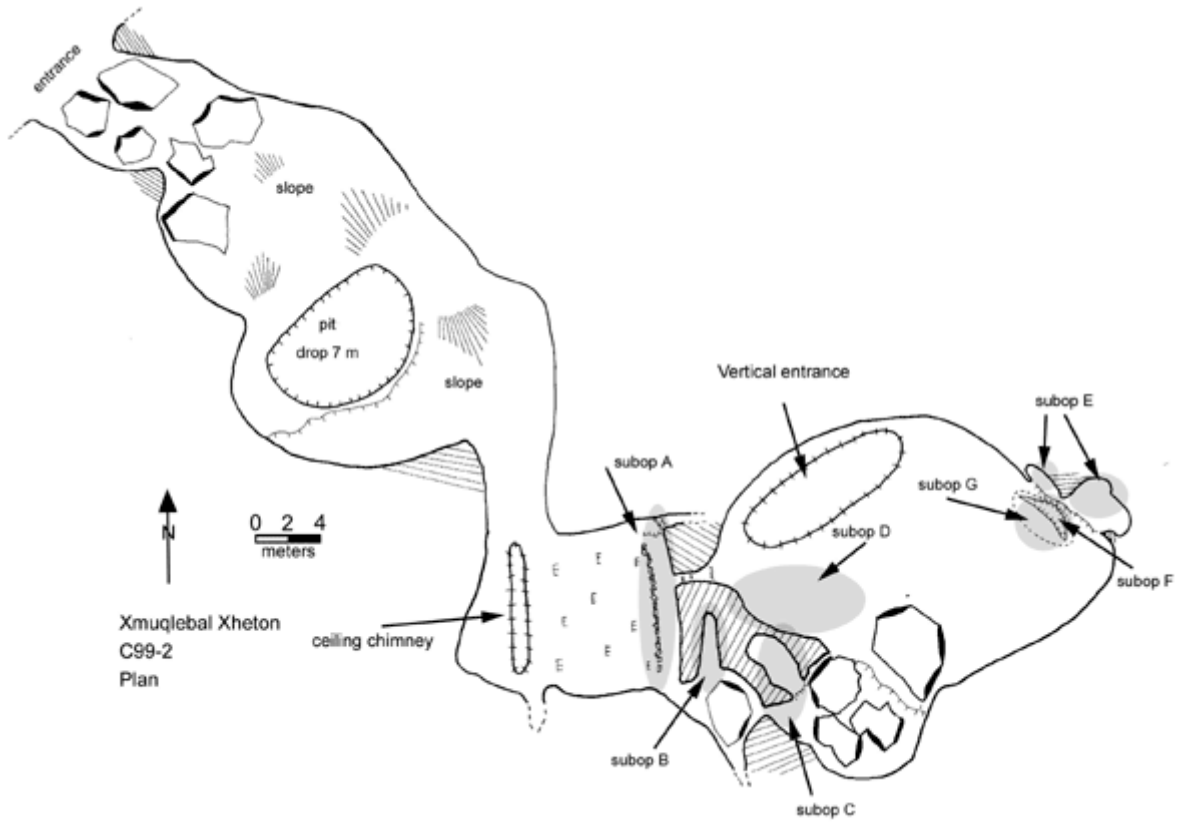


Figure 3. Plan view of Xmuqlebal Xheton Cave showing Suboperation A-G.

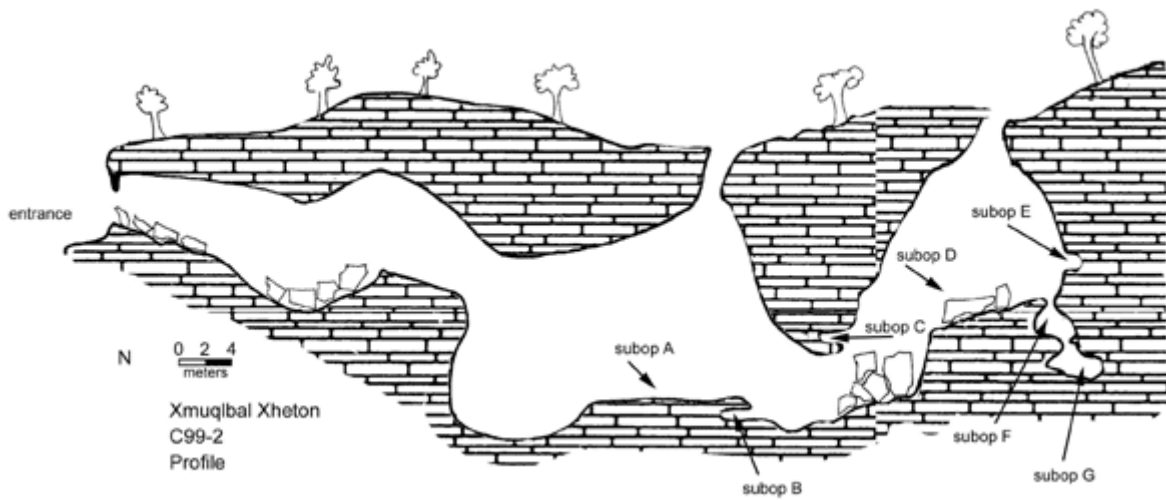


Figure 4. Profile map of Xmuqlebal Xheton Cave illustrating Suboperation A-G.



## ***Suboperation A***

At the base of the vertical descent the cave opens to a large bolder strewn room that is semi-lit from a small crevice in the cave roof. The area under the crevice is wet and contains small amounts of organic material. No artifacts were found in this area. The area along the north wall of this chamber was designated Sub-op. A (C99-2/A). This area consisted of a long terraced wall above a flattened and cleaned floor measuring 12 x 4 m, with the long axis running east/west. A total of four discrete clusters of artifacts were recovered from this Sub-op. These were designated as Lots 1-4. ([Figure 5](#))

Lot 1 (C99-2/A/1) consisted of one complete and two large partial jars, or ollas, atop the terrace and along the east wall of the chamber. Partly buried by detritus moving down the slope from the semi-lit portion of the chamber, these vessels have likely been slightly disturbed from their original placement. The complete vessel was found inverted. The other two vessels appear to have broken as a result of sliding down the slope or overturning.

Lot 2 (C99-2/A/2 SF A) is perhaps the most interesting artifact in the entire cave: the small wooden figurine of a human or supernatural individual. The artifact was found in a deep but narrow crevice in the north wall of the chamber, approximately 1.67 m above the cave floor. The artifact is the primary subject of this report and is discussed in more detail below. A radiocarbon date of the figurine provided a corrected date of 1250±35 BP (AA36481). Calibrated it likely dates from the early 9th century A.D.<sup>1</sup>

Lot 3 (C99-2/A/3) consisted of at least six vessels that were found at the base of a 6 m talus slope leading to a large upper chamber designated Chamber 3 (Sub-op D). This area is almost directly below Lot 2. These vessels may have been intact when they were deposited, though rocks tumbling down the talus slope or the activity of animals probably broke some of them. Reconstructed, they are largely complete, with small fragments that are missing probably having fallen through cracks in the cave floor. Three unbroken vessels were recovered from this lot ([Figure 6](#)): A restricted neck jar decorated with a modeled appliqué monkey-head spout and an undecorated and unslipped tecomate, a small monochrome bowl, undecorated save a small button appliqué design around the shoulder. The third was a pedestaled base inslope wall vase that is unlike anything yet recovered from the Maya Mountains sites, but that is very similar in form and surface decoration to Duck Run Incised from the Belize Valley (Gifford 1976:240). Unfortunately, this vessel was badly damaged sometime in the past by falling debris from the talus slope. The remains of at least two partial ollas were also recovered as well as a large amount of carbon and carbonized wood fragments. AMS Radiocarbon analysis of a sample from this lot dated to 1457±45 BP (AA40681). Calibrated, it likely dates to the late 8th or early 9<sup>th</sup> century A.D.

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<sup>1</sup> This and all other radiocarbon dates were conducted by the University of Arizona NSF AMS facility. The dates are discussed in detail in this report.

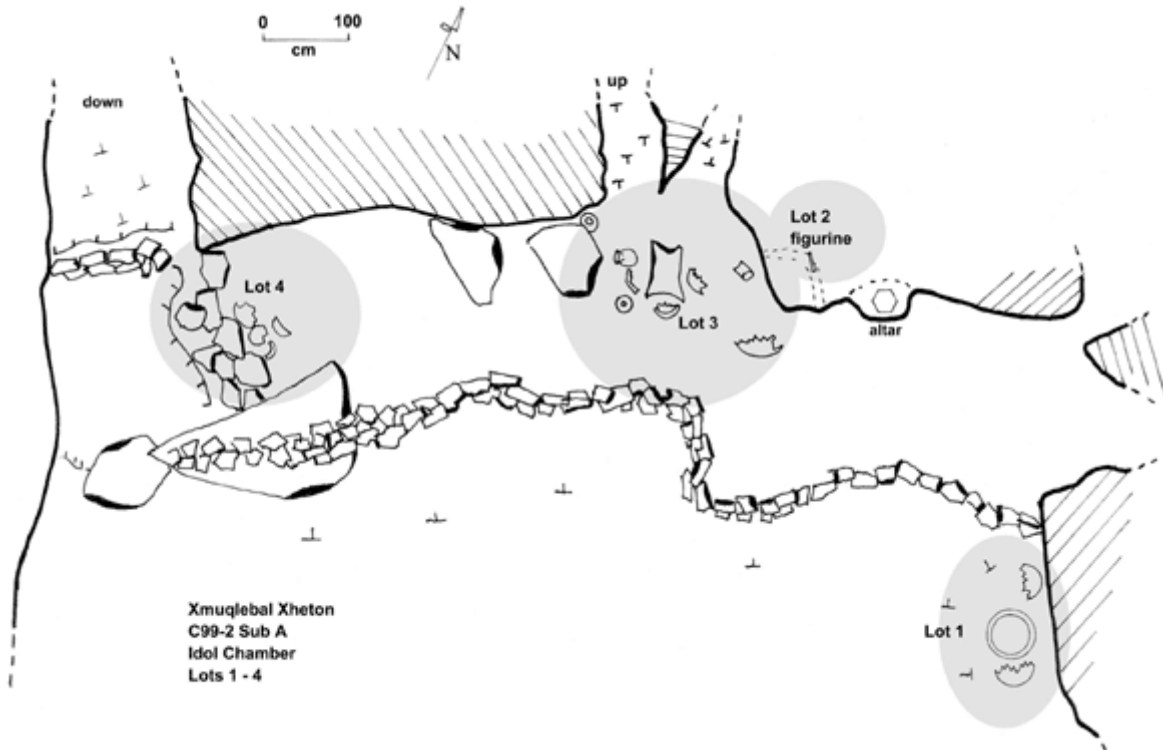


Figure 5. Detail Plan Map of Suboperation A.

Lot 4 (C99-2/A/4) overlooks a 2 m drop to the west of Lot 3. The edge of the drop had been leveled and terraced. Along the edge of the drop off the remains of three partial ollas were recovered, the insides of which were heavily carbonized, indicating they may have been used for burning of wood or incense. One of the sherds, the concave base of a large olla, was found inverted over a small quantity of carbonized wood fragments. These wood fragments are currently undergoing analysis to determine wood type and possible presence of copal incense. Also recovered were several large pieces of partially carbonized wood that may represent torch fragments. One of these torch fragments was submitted for AMS radiocarbon analysis. It provided a date of  $1859 \pm 73$  BP and calibrated is likely from the 3<sup>rd</sup> or 4<sup>th</sup> century A.D. (AA40680).



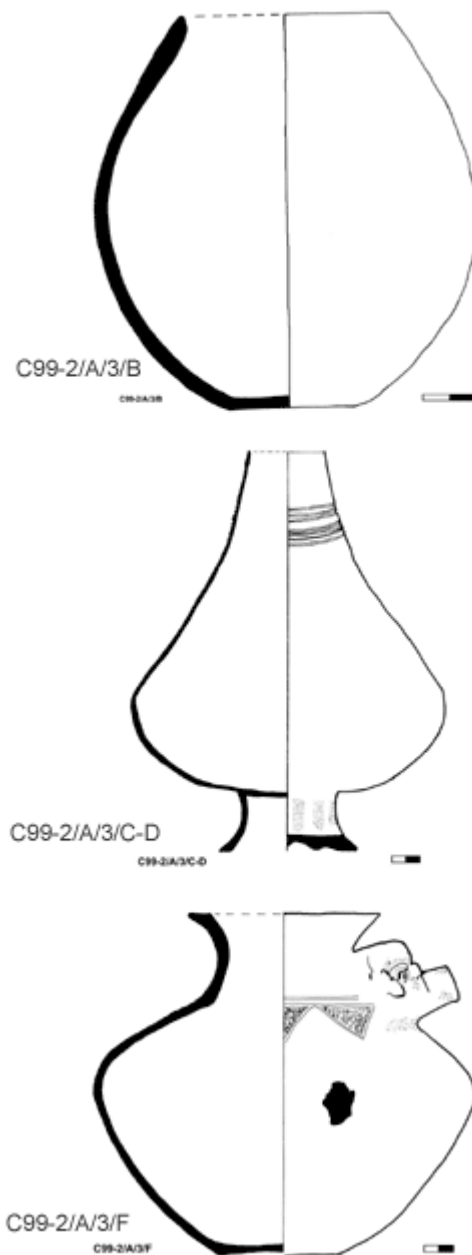


Figure 6. Ceramic vessels recovered from Suboperation A, Lot 3.

### ***Suboperations B through G***

Sub-operation B was a cache in a small chamber along a narrow passage 5 m to the east of C99-2/A. It consisted of three complete vessels, a small cache of sherds, and an intact basalt mano. One vessel is a complete open mouth (unrestricted) olla that was upright. It is undecorated and unslipped. Another is a red slipped undecorated oven-foot

tripod plate with Ik (wind) signs carved in the rattle feet. It was likely cached as a lid to vessel C, but had since shifted and was found on its side next to vessel C, a small olla. The mano was found propped upright (on end) between two rocks to the north of the ceramics. A large piece of partially charred wood, which may have been a torch, provided a radiocarbon date of  $2577 \pm 36$  BP (AA40682). Calibrated, it likely dates to the 6<sup>th</sup> to 8<sup>th</sup> century BP.

Sub-operation C was collected as a single lot (C99-2/C/1). It is a cache of two complete vessels, two partial vessels, a small scatter of sherds, a small jadite (or greenstone) adze, and a large chunk of a soft red paste, possibly a processed pigment, maybe hematite. The cache was located on a high shelf that required technical climbing with ropes to reach. One of the vessels is a polychrome calabash shaped bowl decorated with seated stylized monkeys. About 75% of the vessel was recovered and reconstructed.

Sub-operation D (C99-2/D) was collected as three lots. It is located at the top of the talus slope overlooking C99-2/A in a room designated Chamber 3, and was composed entirely of ceramics, primarily intact and broken jars, as well as two very large (over 40 cm diameter) bowls that may have functioned as jar lids. One vessel is a partial undecorated nubbin-foot tripod bowl.

Sub-operation E (C99-2/E) consists of two small, high niches in the wall—overlooking Chamber 3. One of the niches contained two large ollas and a small amount of sherd material. The other contained a single olla. All the vessels in Sub-op E were found upright and undisturbed.

Sub-operation F (C99-2/F) is located at the bottom of a narrow vertical shaft, the opening of which is a hole in the floor below Sub-op E. The shaft opens to a small chamber (Chamber 4) 4 x 3 m in diameter and 2 m high. The floor of the chamber appears to have been partially leveled, and contained two complete ollas, both of which were inverted. One of the vessels is over 50 cm in height.

Sub-operation G (C99-2/G) consisted of a number of vessels cached in a small chamber (Chamber 5) located vertically below Sub-op F. Access to the chamber was difficult, and required squeezing through a narrow hole in the floor of Chamber 4 that had been partially blocked by rocks functioning as crude capstones. The sub-op was divided into three lots. Lot 1 consists of seven complete and partial vessels. The most interesting of these is a series of 3-stacked vessels. The bottom vessel is a large unrestricted jar. It is lidded with an upright basal fragment of another jar, the upper portion of which was not found. The top stacked vessel is a small-undecorated inverted bowl. The other vessels were inverted ollas and one a small, undecorated red slipped plate. Lot 2 consists of two ollas cached in the north end of the narrow chamber. Interestingly, one of the vessels has a unique slotted pouring spout. Lot 3 is in a small hole in the floor of Chamber 5. This lot consists of a single broken monochrome bowl and fragments of several other vessels, mostly jars.

## Discussion of the Radiocarbon Dates

A total of four AMS radiocarbon dates were obtained for Xmuqlebal Xheton ([Figure 7](#)). Calibration of corrected dates was by OxCal v.3.5, following atmospheric data from Stuiver *et al.* (1998). They provide information on the use of subops A and B. Two dates are especially significant for interpreting the deposition of the figurine, that of the figurine itself and a date from Subop B, Lot 3. Based on ceramic evidence it is thought that the nearby surface site, Muklebal Tzul, likely dates to the Late Classic (ca A.D. 600-900), and was largely abandoned before the middle of the 10<sup>th</sup> century A.D.

The dates from sealed tombs in the Muklebal Tzul settlement support this chronology with a 68.2% confidence of dating between A.D. 650 and 730 (AA40675) and A.D. 600 to 720 (AA40676). At Xmuqlebal Xheton, the AMS date of the figurine has 68.2% confidence range of A.D. 680 to 810 (AA36481). The context directly below the wall niche from which the figurine was recovered (suboperation A, Lot 3) dated, with 68.2% confidence, to A.D. 560 to 645 (AA40681). However, either or both of these dates may be slightly obscured by old wood effect.

Other dates from the cave indicate a long use history prior to the deposition of the figurine. A date from less than 5 meters away from the figurine (Lot 4), in an area with heavy burning of ceramic fragments (likely the result of burning incense) is considerably older. It provided a 68.2% confidence range from A.D. 70 to 250 (AA40680). This is earlier than the suspected occupation of Muklebal Tzul, though the nearby site Ek Xux may have been occupied towards the end of that range. Several AMS dates from that site are from the Early Classic period, including both cave and surface site contexts. A final date from the cave (Suboperation B, Lot 1) clearly predates any known settlement in the region south of the Stann Creek Valley (see Graham 1994), and is the earliest date for cultural material in southern Belize. The dated artifact is a large (.5 kg) wood fragment burned on one end, that was likely a part of a torch. It dates, with 68.2% confidence to 810 to 590 B.C. (AA40682). This is clearly either the result of early pilgrimage activity to the cave or an older piece of wood that was utilized by visitors to the cave. None of the ceramics recovered from the cave are diagnostic of the Preclassic. However, the majority of the ceramics recovered are from jars forms that are not yet temporally diagnostic.

Atmospheric data from Stuiver et al. (1998); OxCal v3.5 Bronk Ramsey (2000); cub r:4 sd:12 prob up(dtron)

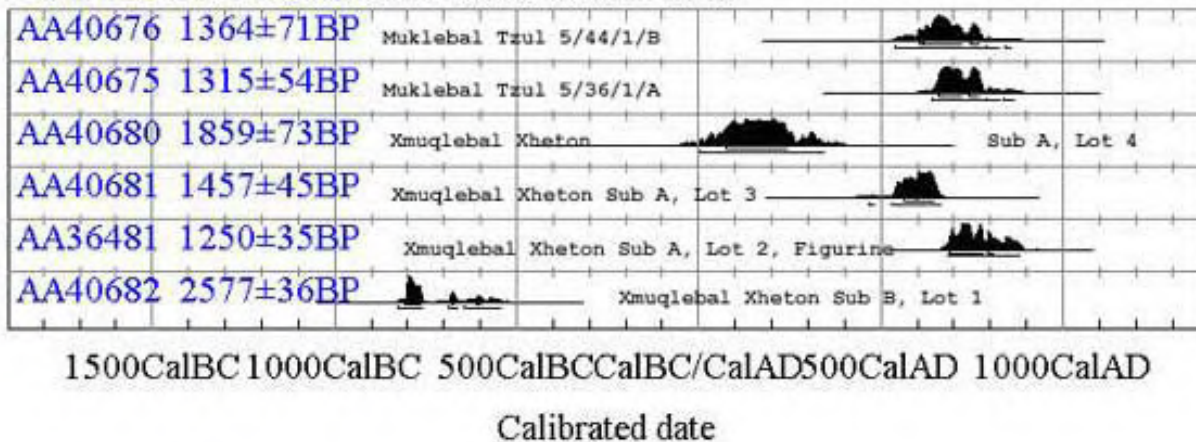


Figure 7. Diagram of the results of AMS Radiocarbon dates from Muklebal Tzul and Xmuqlebal Xheton Cave.

### Interpretation of the Figurine

The figurine recovered from subop-2 at Xmuqlebal Xheton is a unique artifact. Preservation of wooden artifacts, especially portable art, is rare in moist tropics. Many wooden figurines that survived the Spanish predilection for destroying idols may have been secreted away (Gann and Thompson 1937:136), possibly in caves, but likely did not survive except in the rarest of environmental conditions.

The Xmuqlebal Xheton figurine measures 23 cm in length, and depicts a male clad in a belted skirt or loincloth ([Figure 8](#)). He is carved in relief, and the back of the object is deeply fluted. This fluting likely facilitated affixing the figurine to a staff.

The artifact possesses a number of characteristics described for Manikin Scepters. The individual depicted on the figurine is holding what is likely a fan under his left arm, while grasping the handle ([Figure 9](#)), a feature not uncommon in Late Classic iconography (Schele and Miller 1986:143, 152). While there remains a possibility that the object may be a shield, its position tucked under the arm matches numerous objects depicted on ceramics and monuments that have been interpreted as fans. Coggins and Ladd (1992:270) note that one of the figurines recovered from the Cenote of Sacrifice at Chichén Itzá may be holding a handled fan in the right hand. In Late Classic iconography a clear image of such a fan tucked under the arm is shown on the Chama vase from the University Museum of Philadelphia (Kerr Archive, Vase K593) shown here in [Figure 10](#).

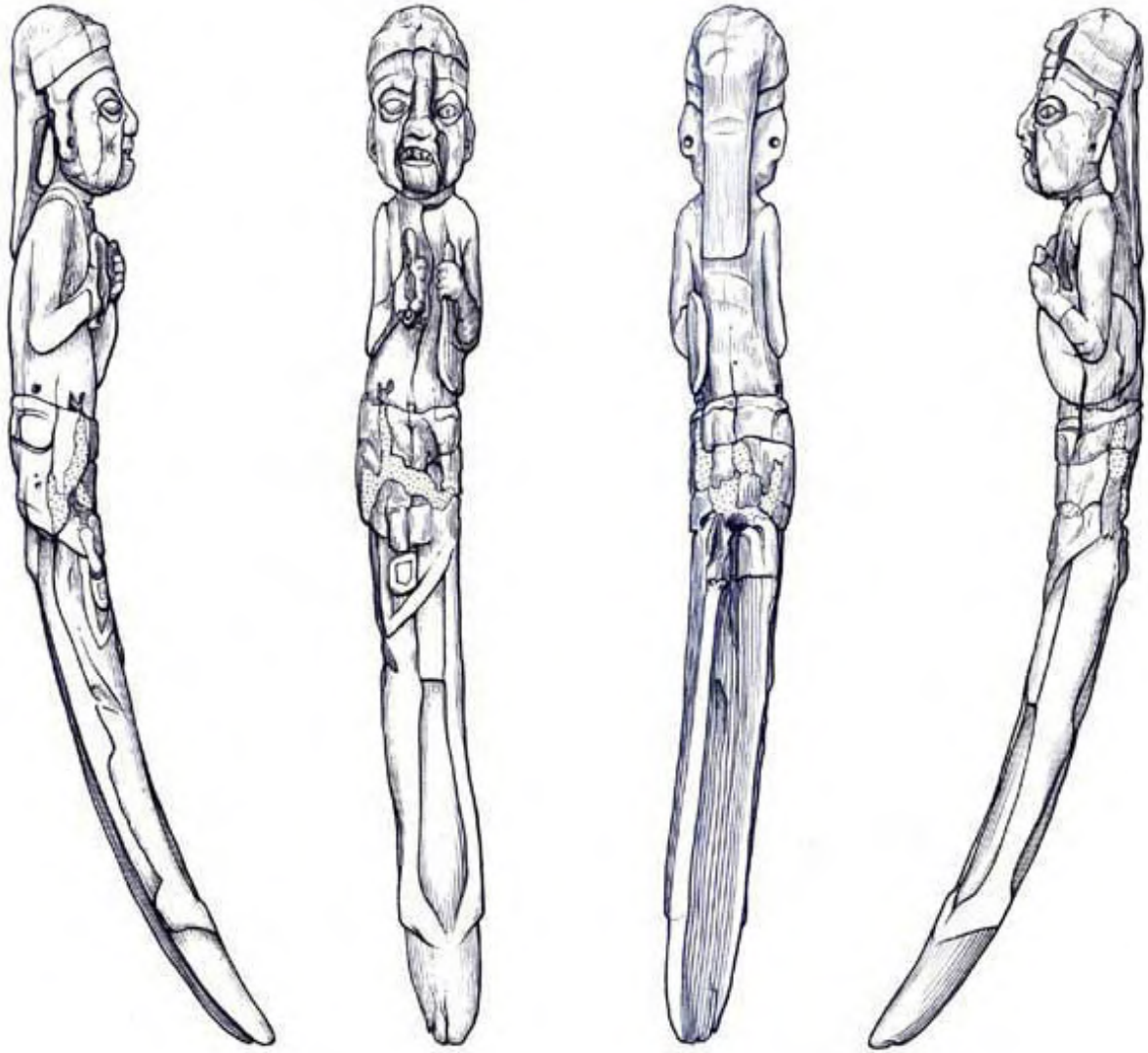


Figure 8. Scale drawing of the Xmuqlebal Xheton Figurine.



**Figure 9. PL view of the Figurine showing the fan-like object held in the left hand.**





Figure 10. Kerr Maya Vase Archive, K593, The Chama Vase, showing individual on right holding a fan under his left arm.

In the figurine's right hand it is clear that the individual was once holding an object that has since broken away ([Figure 11](#)). A manikin scepter from the Cenote of Sacrifice is grasping what may be a rattle in a vertical position (Coggins and Ladd 1992:270, 272 figure 8.45b). While there is no indication of what the object that the Xmuqlebal Xheton figure was holding was, the position of the hand and vertical direction of the cavity created when the object broke off might indicate that it was a staff, rattle, or other type of sticklike object. It is entirely possible that the object once held in the right hand was itself a figurine. The niche where the figurine was recovered was carefully searched for the missing object, but it was not found.

There are a series of design elements on the front of the figurine's garment, which may have been glyphic elements (personal communication, P. Wanyerka 2000), but they are too eroded to be read with any confidence ([Figure 12](#)). Stuart notes that a looted figurine reported to have come from the upper Bladen Branch also had a design element on a belt or garment. He interprets this element, which is on the individual's back in the lumbar region, as being a jaguar head (Stuart and Houseley 1999:2-4). On the Xmuqlebal Xheton figurine the design element is on the front of the individual, affixed to or part of the garment the individual is wearing.

The hair of the individual is pulled back and wrapped in a turban headdress or cloth headband ([Figure 13](#)). Similar headdresses have been depicted in iconography from Copán and shown on a polychrome vase that likely originated from Pusilhá, located less than 50 km to the southwest (see Kerr Maya Vase Collection, Vase 8089, [click here](#)). Both earlobes are drilled, likely to facilitate the attachment of some type of ornament, though none was recovered.



**Figure 11. PR view of the Xmuqlebal Xheton Figurine showing the location where an object was held in the right hand.**



**Figure 12. Central portion of the Xmuqlebal Xheton Figurine showing the garment and a design element on the garment.**



**Figure 13. PL view of the Xmuqlebal Xheton Figurine showing the headdress.**

A review of the literature reveals that there have been at least two other reports of Late Classic wooden figurines being recovered from the Maya Lowlands. In 1964 one was reported as part of a museum collection at the Museum of Primitive Art in New York. The figure is a seated male that may have originated in southern Tabasco near the Usumacinta River. It was radiocarbon dated to the middle of the 6<sup>th</sup> century A.D. (Ekholm 1964). Another figurine depicting a seated individual is reported to have been looted from a cave in the Bladen Branch of the Monkey River, likely near the sites of Ek Xux or Muklebal Tzul. It dates to between A.D. 230 and A.D. 560 (Stuart and Houseley

1999). This date that is congruent with several radiocarbon assays we have taken from Ek Xux and surrounding caves.

Postclassic examples of wooden figurines are also known from Mesoamerica. Several are reported in collections dredged from the Cenote of Sacrifice at Chichén Itzá (Coggins and Ladd 1992). Two figurines are reported from the basin of México, near modern Texcoco. They were found together and radiocarbon dated to approximately the 14<sup>th</sup> century A.D. (Nicholson and Berger 1968). Three other unprovenienced figurines originated in México. Two may date to the 19<sup>th</sup> century (Nowotny 1949), and the third may have originated from a cave in Puebla (Nicholson and Berger 1968:6; Nowotny 1961).

Thomas Gage reports a curious encounter with a wooden figurine during his 17<sup>th</sup> century travels in Alta Verapaz, Guatemala. He describes finding the idol in a cave:

"...standing upon a low stool covered with a linen cloth. The substance of it was wood, black shining like jet, as if it had been painted or smoked; the form was of a man's head unto the shoulders, without either beard or mustachios. His look was grim with a wrinkled forehead and broad startling eyes" (Thompson 1958:281).

In general it is thought that these types of wood artifacts only survive in dry caves or sealed structural chambers with ideal conditions for wood preservation, or in waterlogged contexts where anaerobic conditions favor preservation. Most prehispanic and early historic wood artifacts have long since deteriorated. If ethnohistoric accounts are any indicator, it is likely that wooden figurines were common paraphernalia in ancient Mesoamerican ceremonial or religious settings. During the early historic period they are well documented from central México (Motolinía 1903:32-34; 86-89) and were frequently recorded as central elements in household and public ritual activities in Yucatán (Farriss 1986:289-290). Landa's accounts indicate that there were thousands of idols and most of them were made of wood. These wooden figurines were considered heirlooms and "the most important part of inherited property" (Tozzer 1941:110-111).

There are also several accounts of the making of wooden figurines. Landa notes that contact period Maya "earned a great deal by making idols out of clay and wood" for ceremonial occasions (Tozzer 1941:94). Hayden (1987:164 Figure 5.1, 177) speculates that detailed carving of idols required specialized tools, such as rodent mandibles. The Madrid Codex illustrates at least four examples of wood being carved into idols (pages 95d, 96d, 97b, 98b) as well as the cutting of trees with axes (89c, 98a) (Roys 1965:xiv; Villacorta and Villacorta 1930:403, 415-421). In early contact Yucatán these idols were almost always made of Cedar, which may have been related to the Yucatec name for cedar, *ku che*, or "god tree" (Tozzer 1941:160; R. Roys cited in Tozzer 1941:160, n. 824). This is especially interesting in light of the identification of the Xmuqlebal Xheton figurine material as being *cedrella* sp. (cedar).

Attempts to identify the individual depicted on the Xmuqlebal Xheton figurine have been problematic. Similar objects, manikin scepters, depicted on Classic period monuments

and ceramics have been identified as the possessions of rulers and emblems of divine authority. Most are described as depicting God K, who is associated with dynastic descent and rulership and as the god of lightning (Taube 1992:79). However, our figurine lacks physical features associated with God K. The Classic Period God K generally has a mirror on his brow with a smoking axe or mirror emanating from it (Milbrath 1999:231; Schele and Miller 1986:49). In addition, when God K appears as the Ka'wiil scepter he is often shown as having a serpent-shaped foot (Read and Gonzalez 2000:250), a feature of scepters identified in Classic Period iconography. This feature is not present on the late Postclassic scepters recovered from the Cenote of Sacrifice at Chichén Itzá, and Coggins and Ladd (1992:270) feel that they are stylistically and functionally more akin to Middle Postclassic Chen Mul Modeled incense burners that have modeled figures on the fronts of the burning chambers.

The Xmuqlebal Xheton figurine cannot be clearly identified as any member of any known Maya pantheon. It may be that he represents a local deity or variant of a known God. It is also possible that he could be the portrayal of a historical figure. This does not, however, preclude the object from having functioned in a manner consistent with Manikin Scepters depicted in Late Classic iconography. Coggins (1988) notes that there are multiple manifestations of deities represented on Manikin Scepters, and that they all represent divine lineage and the continuity and legitimacy of rulership. In referring to these objects she notes that Manikin Scepters were "an essential component of a cluster of integrated signs and symbols" that constituted the authority legitimating symbolism of Maya rulers (Coggins 1988:143).

We must also entertain the possibility that this object artifact did not function in the same manner as those 'manikin scepters' depicted on Late Classic iconography. Other artifacts found in association with the figurine cannot be clearly classified as markers of elite status, and its context of recovery, cached in the dark zone of a difficult to access cave raises additional questions as to its function. Cave dark zones are thought to have been the location of restricted and private ritual activities under the auspices of religious specialists. Conversely, semi-light zones of caves, cenotes, and rockshelters were arenas for public displays of ritual (Brady 1989), many of which were likely associated with the legitimatising of political authority (Prufer 2001). In many, though not all, cases, the activities of dark zone religious specialists may have had little to do with larger issues of rulership (Prufer n.d.).

Clearly, in the Postclassic and early historic period figurines and idols were associated with non-political aspects of Maya religion, and often these objects were kept well hidden (Farriss 1986:292; Gann and Thompson 1937:136). Thompson reports that in Postclassic México ceremonial staves and fans were associated with merchants (1970:136-137). At Chan Kom some *santos*, or figurines, can be privately owned and are distinguished from the community patron. There, several *santos* are reported to have mysterious origins in caves, including the village patron San Diego. While some *santos* are community guardians, others are thought by religious specialists to have special functions related to the hierarchy of deities, and all play a role in the healing and illness complex (Redfield and Villa Rojas 1934:107-109). The association with shamanic individuals, figurines, and caves is important here. There is considerable historic



evidence that ritual specialists involved in cave-focused activities often operate outside of conventional community sanctioned religious institutions, even where these institutions are indigenous (Prufer n.d.; 2001).

In summary, while it is probable that the figurine recovered from Xmuqlebal Xheton cave functioned as an actual Manikin Scepter akin to those depicted in Classic Period iconography, it is also possible that it may have functioned as the possession of ritual specialist as part of the illness and healing complex. In any event, it likely represents the possession of a formidable individual from the nearby site Muklebal Tzul, which was occupied contemporaneously to the figurine. At some point the object was cached in the niche in the dark zone of the cave. Radiocarbon analysis from other nearby burnt contexts also date to the Late Classic and may be associated with the object. Its recovery near heavily burned areas is congruent with those ethnographic and ethnohistoric accounts of the use of idols in conjunction with the burning of incense (Tozzer 1941:160).

### **Conservation and Analysis of the Figurine**

The object was removed from the cave in late May 1999, and transported to the United States for analysis and conservation. Prior to this, while still in the cave, the artifact was photographed and carefully wrapped in layered Gortex®, Teflon®, and Reemay® fabrics. These no-stick materials allowed the object to be secured and prevented fragments from detaching while reducing any unnecessary abrading. A mold was constructed of acid free Ethafoam™ to support the object and it was placed into a sealed plastic container. With the aid of the 25 Flight of the British Army Air Corps the artifact was helicopter airlifted out of the Maya Mountains in preparation for its export to the United States. The box was opened once in the presence of staff of the Belize Department of Archaeology (DOA), resealed, and flown to Southern Illinois University. From there it was hand carried to the Smithsonian Center for Materials Research and Education (SCMRE) for analysis, arriving there in June 1999.

Immediately upon removal from its primary cave context and the environmental conditions that had facilitated its preservation the artifact began to rapidly degrade. When the box was opened in Belmopan for a DOA inspection it was observed that large cracks were appearing in the midsection of the object. By the time it arrived in Washington DC these cracks had expanded to become a fracture, leaving the artifact in two pieces. At SCMRE the object was allowed to slowly adjust to a stable environment before conservation and analysis began.

With coordination between the SCMRE staff, the MMAP, and the Belize Department of Archaeology a treatment plan was developed to restore and analyze the artifact and to prepare it for eventual return to Belize. Monica Shaw, a SCMRE intern and doctoral student at the University of Maryland, conducted treatments and analyses under the supervision of senior scientist Harriet Beaubien and other SCMRE staff members. Analysis was completed in the fall of 2000. In November, the artifact was removed from

the SCMRE and hand carried back to Belize for permanent curation and display as part of the national collection of Maya antiquities.

The results of the analyses conducted are summarized below and are presented in detail in Appendix I, the final report of the SCMRE analysis of the artifact. This information is also available directly from the author by request.

#### *Conservation of the Figurine (adapted from Shaw 2000)*

The figurine is cylindrical measuring 28.1 cm in length x 2.9 cm in width and 3.3 cm in depth. The head and torso are carved in low relief. When the object arrived at SCMRE its condition was described as friable with substantial damage due to insect and fungal attacks. The wood surface appears to have been weathered. Some of the wear appears to be old, possibly use wear from the Late Classic period.

The surface of the object was cleaned using a water-dampened scalpel blade prior to chemical treatment. The object was consolidated by impregnation with Butvar B-98® diluted with ethanol. The solution was applied dropwise using a syringe over a period of days and was also injected into cracks, insect exit holes, and break edges. When the impregnation was complete the object was slowly dried over a period of two weeks and the object's weight change monitored to insure complete evaporation of the solvent. The break in the figurine was mended using 30% (w/v) Acryloid B-72® in acetone.

#### *Analyses of the Figurine (adapted from Shaw 2000)*

Three types of analyses of the artifact were conducted: radiography to assess its internal structure and condition, wood identification, and pigment analysis of the artifact surface. The artifact was also carbon dated, as discussed in the preceding section of this report. Detailed results of the analyses are presented in Appendix I, and are summarized here.

Xeroradiography was conducted using a Philips MG X-radiography unit with a 300 kV double focus tube. Images were recorded for the front, PL, and PR sides of the figurine. They were used to assess internal structure of the artifact based on the extent of cracks and insect tunnels in the wood interior. It was determined that the artifact was badly damaged by both fungal and insect attacks. The results of this analysis guided the conservation efforts described above.

Monica Shaw performed wood identification under the supervision of SCMRE staff microscopist H. Alden. Wood thin sections were taken from one of the exposed breaks on the back of the figurine. Microscopic examination of these fragments resulted in a preliminary identification of the wood as belonging to the family *Cedrela* (Spanish Cedar) though there was not enough anatomical data to identify the species.

Visual examination of the object indicated that there were remnants of brown-black and red surface treatments on the artifact. These surface treatments likely contain both a pigment (colorant) and a medium. The analysis consisted on examination of the surface treatments using polarized light microscopy (PLM), microchemical tests, energy-dispersive spectroscopy (EDS), and Fourier-transformed infrared spectroscopy (FTIR).

Analysis of the red surface treatment indicated that the colorant is an earth pigment, suggesting either hematite or vermillion. Hematite is found in abundant quantities in the Maya Mountains. The medium in the red surface treatment contains a proteinaceous component, possibly suggesting an animal product.

The colorant in the black-brown surface treatment tested negative for iron. It is likely a composite mixture possibly containing charcoal black, earth pigments, and possibly bone black. The medium tested positive for both proteinaceous and carbohydrate components.

## **Conclusions**

Caves represent the most sacred features in the sacred landscape of the ancient and modern Maya. Xmuqlebal Xheton, with its long use and multiple deposits was clearly an important local, and possibly regional ceremonial cave and it is likely that the residents of the Muklebal Tzul utilized it repeatedly. The figurine recovered from the cave was probably deposited during the occupation of the site. Iconographic analysis of the figurine shows a strong morphological resemblance to Late Classic Manikin Scepters depicted on monuments and ceramics found across the Maya Lowlands. However, the primary figure depicted on Manikin Scepters, God Kawil, is clearly not the individual shown on the Xmuqlebal Xheton figurine. Pending further iconographic analysis, his identity remains a mystery.

The recovery of such a rare and unusual artifact offers insights into the use figurines by the ancient Maya. The prompt attention to the material needs of the object have resulted in its preservation as part of the patrimony of Belize and adds to a small but growing number of wooden artifacts that have survived the ravages of time in the moist tropics.

## **Acknowledgements**

The recovery of the artifact from its archaeological contexts was only a single step in the recovery of data outlined in this report. Without the help of the Foundation for the Advancement of Mesoamerican Studies, Inc. (FAMSI) we would have been unable to assure its preservation and complete documentation. I am grateful to FAMSI and to its director, Dr. Sandra Noble, for their encouragement and assistance. The assistance of the Smithsonian Center for Materials Research and Education made possible the analytical and conservation work on the figurine. Their efforts, specifically the help of

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