

# PLANTING THE BONES: HUNTING CEREMONIALISM AT CONTEMPORARY AND NINETEENTH-CENTURY SHRINES IN THE GUATEMALAN HIGHLANDS

Linda A. Brown

---

*From the Classic period to the present, scholars have documented the widespread Maya belief in a supernatural guardian of the animals who must be appeased in hunting rituals. Despite this resilience, features and deposits entering the archaeological record as a result of hunting ceremonies remain largely unknown. I describe several contemporary and nineteenth-century shrines used for hunting rites in the Maya highlands of Guatemala. These sites contain a unique feature, a ritual fauna cache, which consists of animal remains secondarily deposited during hunting ceremonies. The formation of these caches is informed by two beliefs with historical time depth: (1) the belief in a guardian of animals and (2) the symbolic conflation of bone and regeneration. The unique life history of remains in hunting-related ritual fauna caches suggests a hypothesis for puzzling deposits of mammal remains recovered archaeologically in lowland Maya caves. These may have functioned in hunting rites designed to placate the animal guardian and ensure the regeneration of the species via ceremonies that incorporated the secondary discard of skeletal remains. A review of the ethnographic literature from the Lenca, Huichol, Nahua, Tlapanec, and Mixe areas reveals similar hunting rites indicating a broader Mesoamerican ritual practice.*

*Desde la época prehispánica hasta el presente, los estudiosos han notado la amplia creencia Maya en un guardián supernatural de los animales que debe ser apaciguado con rituales antes y después de la cacería. Mientras que esta documentación, los tipos de rasgos o artefactos que se han encontrado en los contextos arqueológicos durante las ceremonias siguen siendo desconocidos. Describo varios santuarios del siglo diecinueve y contemporáneos que documentan la ritual cacería Maya del altiplano de Guatemala. Ellos contienen rasgos especiales, unos de escondites de fauna ritual, los cuales indican el uso en el ceremonialismo de la cacería. La formación de estos escondites es indicada por la refundición simbólica de hueso, semilla, y regeneración. Esta creencia es evidente en los textos coloniales que sugieren una historia profunda en la zona Maya. La vida historia de los huesos en escondites rituales sugiere una hipótesis por huesos de mamíferos excavados en cuevas en las tierras bajas. Es posible que estos fueron depositados en ritos de la cacería para apaciguar al guardián de los animales y promover la regeneración de las especies. La literatura etnográfica nota patrones similares de cacería que incluyen el desecho ritual, lo cual sugiere una práctica mesoamericana más amplia.*

From the Classic period to the present, iconography, epigraphy, and ethnographic sources document the Maya belief in a supernatural guardian of animals who must be appeased with sacrifices before and after a hunt (e.g., Cabarrús 1998:47; Cortes y Larraz 1958:119–120; Hofling 1991:136–153; Redfield and Villa Rojas 1934:117–118; Sapper 1897:268; Taube 2003:472–475; Thompson 1930:124–135; Tozzer 1907:162, 1941:144, 162; Wagley 1949:57; Wisdom 1940:71–73). Written accounts indicate that this appeasement was done in the form of hunting rituals, although the existence of features and

deposits associated with these rites has remained largely unknown. The resilience of belief in a supernatural guardian of animals who must be placated with material offerings before and after hunting suggests that the places used for hunting rites and associated ritual deposits should be archaeologically visible.

In this article, I present information documenting several contemporary and nineteenth-century Maya hunting shrines located near Lake Atitlán in the Guatemalan highlands (Brown 2002; Brown and Romero 2002). From a material perspective, these sites are notable as they contain a unique fea-

---

Linda A. Brown ■ Department of Anthropology, George Washington University, Washington, DC 20052 (labrown@gwu.edu)

Latin American Antiquity, 16(2), 2005, pp. 131–146  
Copyright© 2005 by the Society for American Archaeology

ture type indicative of their use in hunting-related rites—a ritual fauna cache—that could indicate site function after abandonment.

Ritual fauna caches consist of animal remains, either skeletal elements or the hard outer carapace, that were secondarily deposited at sacred sites during a hunting rite. For any hunt, at least two rituals were performed at shrines associated with the guardian of animals. The first occurred before the hunt, when the hunter offered sacrifices to the animal guardian while asking permission to take one of his creatures. If the hunt was successful, then the hunter carefully curated some of the skeletal remains until a later time when he would return to the same shrine. In the post-hunting ritual, he thanked the guardian of animals for sending him one to catch. Again, he made offerings, and during the ceremony he deposited the curated animal remains in a ritual fauna cache.

In the pages that follow, I first describe hunting-related ritual fauna caches in contemporary and abandoned shrines near Lake Atitlán. Next, I review the beliefs informing the specialized ritual discard of animal remains at shrines, presenting evidence that these beliefs extend back to the Classic period. I show that contemporary myths, colonial-period indigenous texts and performances, and iconography from the Classic period suggest the types of topographic settings likely used for hunting ceremonialism. Then, using ethnoarchaeological data, I propose material expectations for remains deposited in hunting rites and ways to recognize these when they are recovered from an archaeological context. Finally, I argue that some deposits excavated from Maya caves have a material signature commensurate with a function in ancient hunting rites.

### The Material Signature of Hunting Shrines

In a survey of contemporary sacred sites in the landscape, I identified six shrines used for hunting ceremonialism (Figure 1). All shrines were associated with rock formations; three were located at the base of a vertical rock outcrop, whereas the others were associated with a standing stone, a pile of tumbled boulders, and a rock shelter, respectively.

The ritual fauna caches associated with hunting ceremonialism were identified as a subset of features documented in an ethnoarchaeological project investigating sacred sites around Lake Atitlán

and the K'iche' area (Brown 2002). Data-collection techniques incorporated ethnographic and archaeological methods including informal interviews, the mapping of surface features, and the identification of materials present on the site surface.<sup>1</sup> For the faunal deposits, the total count and identification of specimens present (number of identified specimens [NISPI] as well as the minimum number of individuals [MNI] were calculated, with MNI calculations based on the sample as a whole (minimal calculation).<sup>2</sup>

As the ritual fauna caches were identified during an ethnoarchaeological project, and some of these sites are still used for ceremonies today, we did not excavate these deposits. Thus, taxonomic identifications and counts are based on surface assemblages. The identification of abandoned sites suitable for future excavation will add important information to the initial data from surface deposits presented here.

### Description of Active Hunting Shrines

Three active shrines contained ritual fauna caches. Two sites (Xe Abáj and Iglesia Abáj) are located outside of Tz'utujil Maya towns, and one is on a coffee *finca* in the Kaqchikel region (Maname'l). In addition to housing hunting rites, these shrines serve other ceremonial functions. Maname'l is used for ceremonies to increase coffee production, whereas Xe Abáj and Iglesia Abáj are used for a wide variety of ritual requests.

Xe Abáj ("Under Rock") is a small rock shelter located on a hillside just outside of San Pablo la Laguna (see Figure 1). One of the ritual requests solicited at this site concerns success in hunting the nine-banded armadillo (*Dasypus novemcinctus*). A ritual fauna cache consisting of approximately 50 armadillo carapaces is stacked on a natural boulder outcrop inside the rock shelter (Figure 2). Virtually all remains are encased in thick black sooty residue from years of exposure to smoke from sacrificial offerings burned inside the shelter immediately adjacent to the cache.

A second shrine used for hunting ceremonies is Maname'l (see Figure 1). Maname'l is located at the base of a south-facing vertical rock outcrop on a privately owned coffee *finca* south of San Lucas Tolimán (Figure 3). The site contains an impressive faunal deposit, which is located west of the altar area (Figure 4). The deposit contains eight differ-

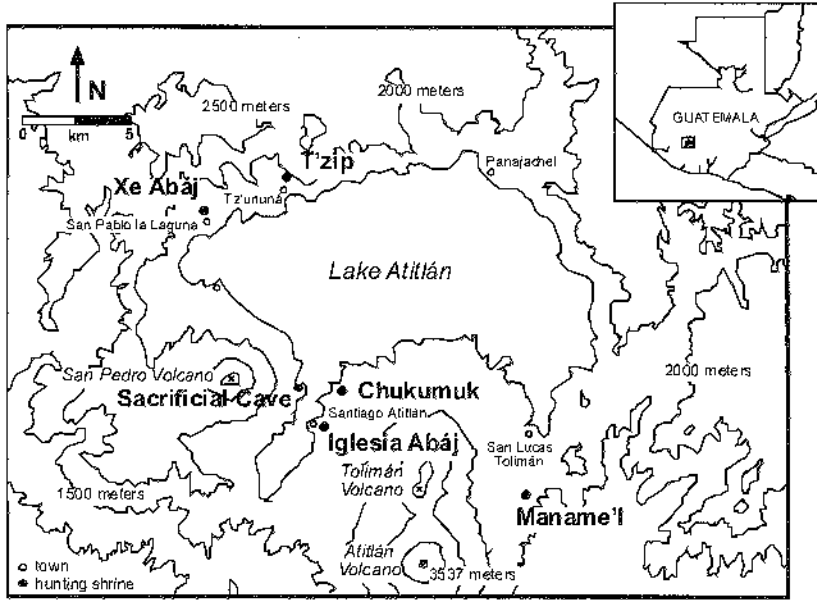


Figure 1. Topographic map showing the locations of known shrines with ritual fauna caches.

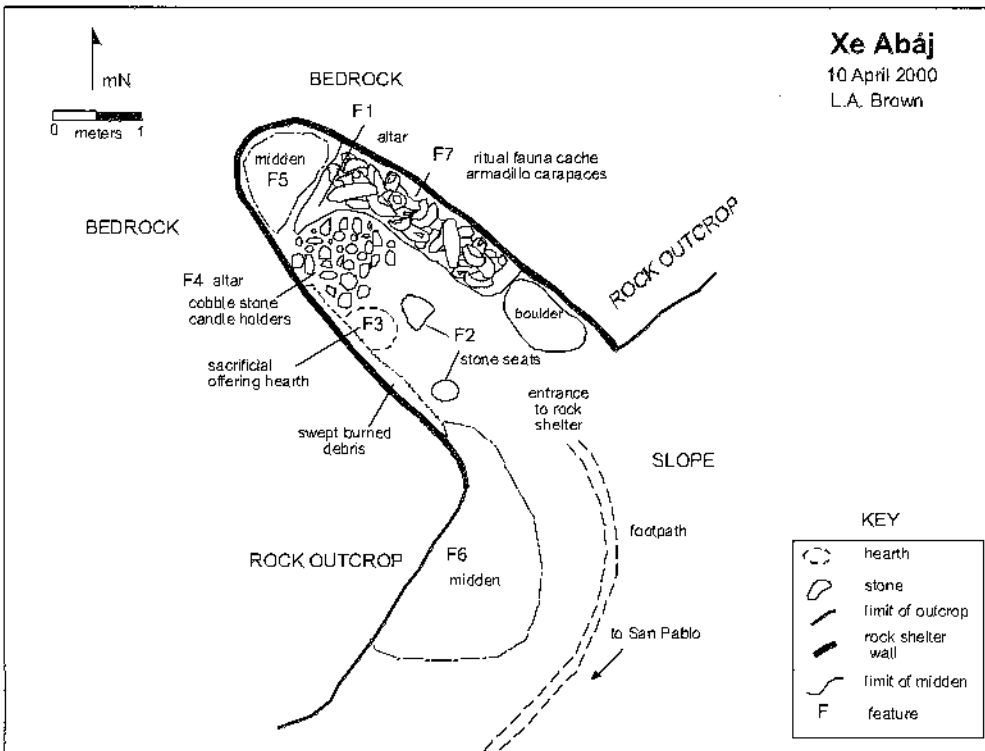


Figure 2. Plan view map Xe Abáj showing features including the ritual fauna cache.

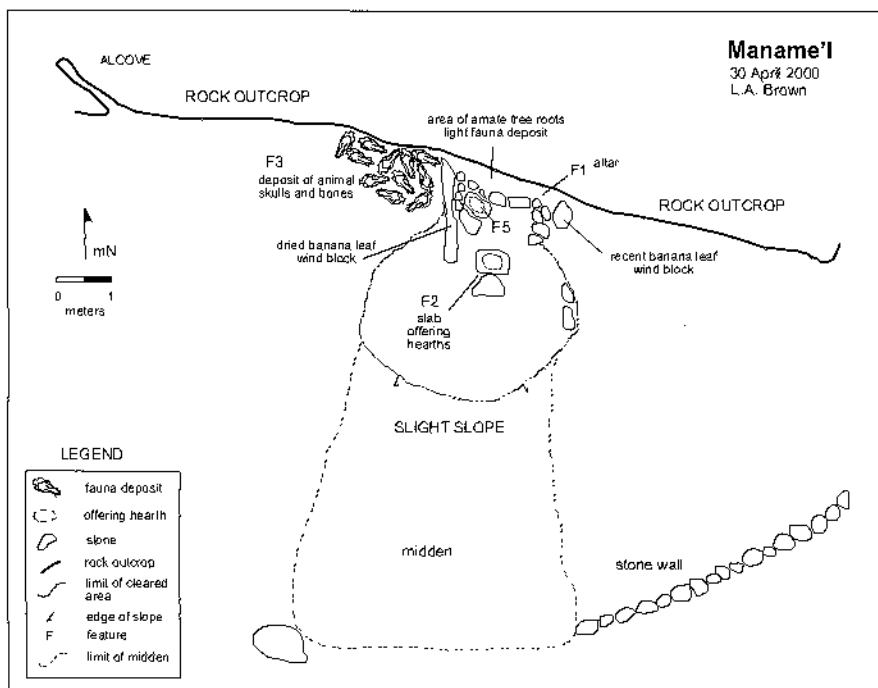


Figure 3. Plan view map of Maname'l.

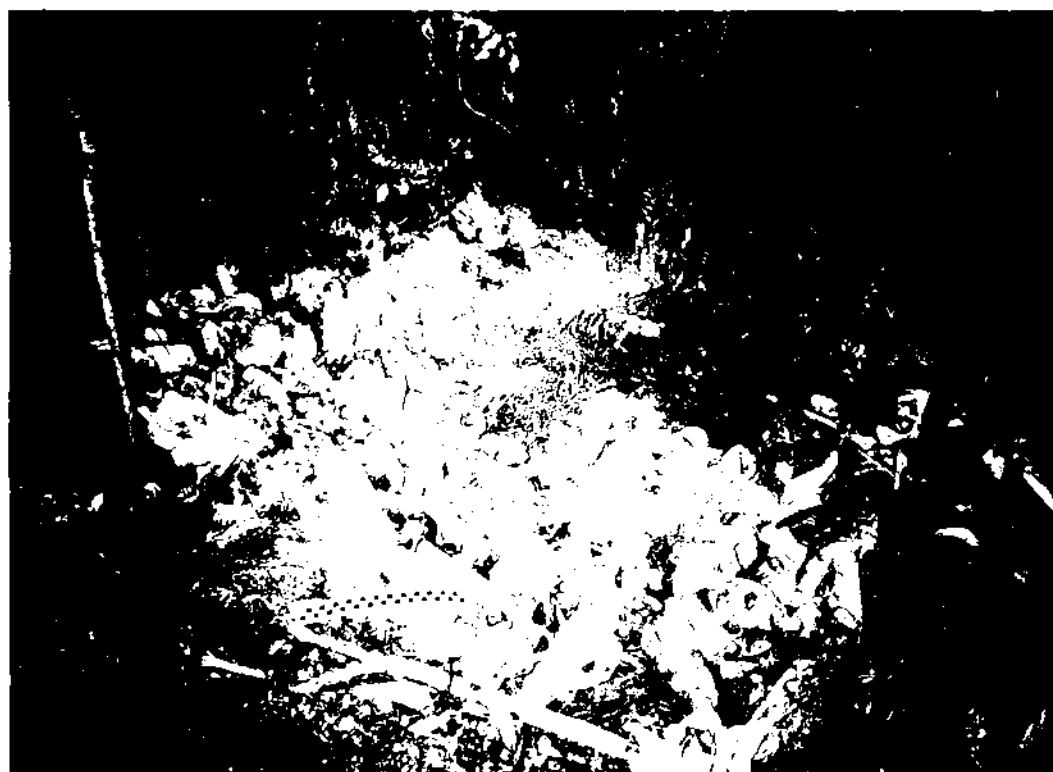


Figure 4. Photograph of the in situ ritual fauna cache at Maname'l.



Figure 5. Overview of Iglesia Abáj, with Miguel Coché Par.

ent species including the nine-banded armadillo, collared peccary (*Tayassu pecari*), white-tailed deer (*Odocoileus virginianus*), brocket deer (*Mazama americana*), gray fox (*Urocyon cinereoargenteus*), paca (*Agouti paca*), coati (*Nasua narica*), and greater grison or weasel (*Galictis vittata*; Table 1). A minimum of 197 individuals is present in this assemblage.

The third active site is Iglesia Abáj ("Church Rock"). Iglesia Abáj is a mountain shrine located on the hillside above Santiago Atitlán (see Figure 1). The main ceremonial focal point is a zoomorphic standing stone that contains a small number of

bones (NISP = 10) deposited flush against the rock or in shallow alcoves (Figure 5). Three species are represented: collared peccary, white-tailed deer, and paca. The MNI is five individuals (see Table 1).

#### Description of Abandoned Hunting Shrines

Three abandoned shrines containing material evidence suggestive of hunting ceremonialism have been located to date, and all are in the Tz'utujil area around Lake Atitlán (see Figure 1). The site we called T'zip is situated at the base of a south-facing rock outcrop on a hillside outside the town of Tz'u-nuná (Figure 6). The site has been abandoned for

Table 1. Comparison of the Minimum Number of Individuals (MNI) in Surface Assemblages.

Species	Iglesia Abáj		Maname'l		T'zip		Xe Abáj	
	Count	%	Count	%	Count	%	Count	%
Armadillo ( <i>Dasypus novemcinctus</i> )	-	-	15	7.6	-	-	50	100
Brocket deer ( <i>Mazama americana</i> )	-	-	3	1.5	-	-	-	-
Coati ( <i>Nasua narica</i> )	-	-	21	10.7	-	-	-	-
Collared peccary ( <i>Tayassu tajacu</i> )	3	60	71	36	-	-	-	-
Gray fox ( <i>Urocyon cinereoargenteus</i> )	-	-	2	1	-	-	-	-
Greater grison ( <i>Galictis vittata</i> )	-	-	5	2.5	-	-	-	-
Paca ( <i>Agouti paca</i> )	1	20	67	34	-	-	-	-
White-tailed deer ( <i>Odocoileus virginianus</i> )	1	20	13	6.6	11	100	-	-
TOTAL MNI	5		197		11		50	

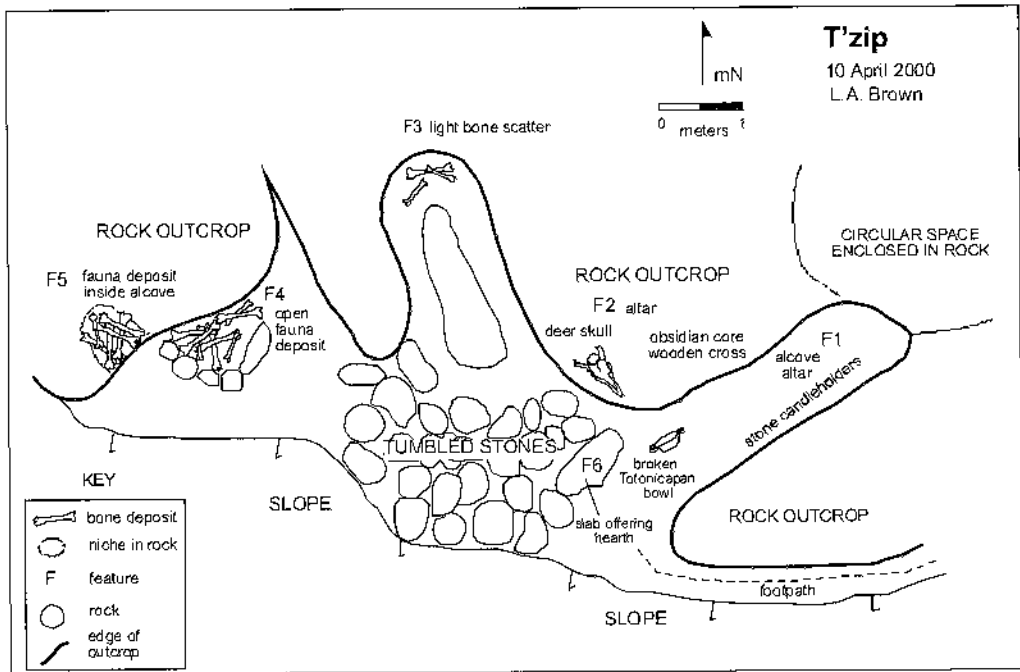


Figure 6. Plan view map of abandoned hunting shrine T'zip, showing features on site surface.

an unknown length of time, although the presence of a broken Totonicapán bowl from the early to mid-twentieth century suggests use during that time period. All faunal remains at T'zip are from white-tailed deer. Based on this, I interpret the site as functioning in deer-hunting ceremonies.

Features on the surface suggest that the eastern part of the site was used for ritual offerings as indicated by a slab offering hearth, boulder altar, and stone and fired-clay candleholders (see Figure 6). The western part of the site was used for caching faunal remains. Features 3 and 5 are rock alcoves that served as receptacles for bones, and Feature 4 consists of a bone deposit placed in an open area at the base of the outcrop. A minimum of 11 deer is represented in the cache, and the NISP is 144 (see Table 1).

Two additional abandoned sites were identified during summer 2003, although mapping and the identification of surface assemblages await future research. Chukumuk is located just outside of Santiago Atitlán (see Figure 1). The site consists of a ritual fauna deposit cached in two shallow alcoves in a vertical rock outcrop. Preliminary examination revealed white-tailed deer scapulae as well as other postcranial remains yet to be identified.

The final abandoned site was recorded by Samuel Lothrop (1933:81–83) when he was working at Chuitnamit in the 1920s (see Figure 1). When Lothrop visited the site in the early twentieth century, it already was abandoned, suggesting that its use dates to the nineteenth century. The shrine, which he called a “sacrificial cave,” consists of a small rock enclosure formed by a mass of tumbled boulders. Inside the enclosure, Lothrop (1933:83) noted a fauna cache comprised of armadillo carapaces as well as the skulls and scapulae of about a dozen “sheep or goat.” However, a published photograph of this deposit (Lothrop 1933: Figure 50a) shows a skull with cranial morphology and dentition suggesting that it belongs to a peccary, rather than sheep or goat, raising questions about this identification.

Although the faunal deposit Lothrop (1933) photographed was not visible when I visited the site, bones were present in a smaller alcove along the eastern side of the main enclosure. Skeletal remains included crania from collared peccary, paca, and coati, as well as other unidentified postcranial elements. Additional bones were visible eroding out of sediments beneath a fig tree root inside the alcove, indicating buried deposits. Future

Table 2. Comparison of Skeletal Elements in Surface Deposits at Shrine Sites (Fragmentary Unidentified Remains Excluded).

Element	Iglesia Abáj		Maname'l		T'zip		Xe Abáj	
	Count	%	Count	%	Count	%	Count	%
Carapace	-	-	15	5	-	-	50	100
Cranium	3	30	182	61.3	3	2.4	-	-
Mandible	3	30	67	22.6	9	7.2	-	-
Scapula	1	10	6	2	2	1.6	-	-
Femur	-	-	7	2.3	10	8.1	-	-
Tibia	-	-	6	2	15	12.1	-	-
Humerus	-	-	3	1	10	8.1	-	-
Radius	-	-	3	1	13	10.5	-	-
Ulna	-	-	4	1.3	3	2.4	-	-
Metatarsal	-	-	-	-	11	8.9	-	-

excavation of the site should reveal whether the main alcove contains the remains of sheep and goat, as Lothrop suggested, or instead was used for depositing the remains of wild animals as a component of hunting ceremonialism, as I suspect.

### Discussion

Although the present sample size is limited, a comparison of the types of remains chosen for curation and secondary deposition reveals similarities as well as differences. Starting with the former, all remains noted in ritual fauna caches to date were from medium or large-sized mammals, and only wild species were represented. When armadillo remains were present, it was the carapace that was deposited. With other species, there was variation in the types of elements chosen for specialized discard at these sites. Some deposits were dominated by crania and mandibles. Notably, the large faunal assemblage at Maname'l overwhelmingly consisted of crania and mandibles, with these elements representing 84 percent of all remains present (Table 2). The much smaller faunal deposit at Iglesia Abáj also primarily consisted of crania and mandibles, although these constitute a lower percentage (60 percent) of the deposit than that seen at Maname'l.

The species showing the most variation in the types of skeletal remains chosen for deposition is the white-tailed deer. White-tailed deer was present at both Maname'l and T'zip, yet different bones were returned to these two sites. At Maname'l, individuals commonly selected crania and mandibles for the ritual deposit, with these representing 67 percent ( $n = 26$ ) of all white-tailed deer elements present ( $n = 39$ ). In contrast, the assemblage at T'zip

is dominated by postcranial remains, with crania and mandibles ( $n = 12$ ) representing only slightly more than 8 percent of the total deer elements ( $n = 144$ ).

Presently, I do not know what this variation represents. Perhaps the presence of more postcranial elements at the abandoned site of T'zip reflects the practice of depositing all deer remains during the time this site was in use. Conversely, differences seen in these assemblages may reflect local understandings concerning the types of skeletal elements important to return to shrines. Choices as to which animal remains should be subjected to specialized discard at sacred sites reflect folk taxonomy and beliefs about the regenerative power associated with certain types of bones. Future ethnoarchaeological work elucidating these beliefs is important in developing models for the life history and eventual deposition of the specific types of taxa and skeletal elements associated with hunting ceremonialism.

### Beliefs Informing the Secondary Deposition of Animal Remains at Shrines

Two general beliefs inform the secondary deposition of animal remains at sacred sites in the Maya landscape: the belief in the guardian of animals and the belief that skeletal remains contain the potential for new life. Both of these beliefs have historical depth in the Maya area, as well as greater Mesoamerica, suggesting that hunting protocol, dictating that certain skeletal remains should undergo specialized life histories and discard practices, likely existed in the past.

#### *The Guardian of the Animals*

Ethnographic literature from the Maya area con-

tains numerous references to a supernatural animal guardian who must be appeased with specific rituals and offerings before and after hunting. Among the Yucatec Maya, the supernatural protector of deer is called T'zip. T'zip is a forest spirit who must be given maize offerings before hunting, or else the hunter will miss his mark (Redfield and Villa Rojas 1934:140; Thompson 1970:308–309; Villa Rojas 1945:103). In Belize, the morning star is the owner of animals, and the Mopán Maya burn copal offerings to this deity (Thompson 1930:142). The Huastec Maya of Veracruz make offerings of prayers, food, and alcohol before hunting deer. Pre-hunting rites include constructing a corral around a deer skull and ceremonially opening it, thereby signifying the release of a deer from the master of the animals (Alcorn 1984:88). The Chorti of Guatemala must first dream of a deer before planning a hunt (Wisdom 1940:72–73). In the dream, the guardian of deer visits the hunter, instructing him as to how much copal he must burn as payment for the life he wants to take. In the Guatemalan highlands, the K'iche' make offerings in a cave at the archaeological site of Kumorcaaj (Freidel et al. 1993:187), as well as to various shrines outside of Momostenango (Allen Christenson, personal communication, 2004), to ask the *Mundos* (Earth Guardians) for permission to hunt. Meanwhile, in Santiago Atitlán, the Tz'utujil Maya have transformed a colonial-period statue of Saint John the Baptist (holding a lamb) into the lord of wild animals by painting jaguar spots and whiskers on the lamb (Carlsen 1997:98).

In the late nineteenth century, Sapper (1897:268) observed a deer-hunting ritual performed by the Tzeltal Maya of Chiapas that involved the removal of the deceased animal's head, which subsequently was offered copal incense to appease the lord of the hunt. A Q'eqchi' man working with Sapper told him that they conducted similar rites because if they did not, then Tzultakah (lord of the forest and guardian of animals) would not send them any more game.

The Maya are not alone in their belief in a supernatural guardian of animals, as this deity is known in various parts of contemporary Mesoamerica. The Huichol of northern Mexico believe that the success or failure of a hunt is based on the divine owner of deer, who will send an animal to catch if all the proper rites and respectful attitudes are maintained (Myerhoff 1974:83, 201). The Mixtec of

western Oaxaca offer domesticated fowl and incense to Thunder, who is the owner of the animals (Lipp 1991:73, 95; Monaghan 1995:101–102). The Popoluca in the Veracruz Mountains (Foster 1945:181) believe that the master of game lives inside the mountain with his deer, which are kept underground at night and let out to graze in the morning. In Guerrero, the Tlapanec conduct an elaborate annual ritual to account for the number of individuals taken from the animal guardian the previous year (Neff Nuixa 2001:366–369). Meanwhile, the Chinantla of Oaxaca and Puebla make offerings to the lords of the hills and caves who are the masters of animals (Weitlaner 1981:107–131; Weitlaner and Castro G. 1954:113, 1973:210–211).

There are reports of the guardian of animals from Honduras as well. The Lenca (Chapman 1985:141) perform ceremonies at mountain shrines offering the animal guardian *chicha*, fireworks, candles, and copal as payment for the animal taken. The Tolupeño believe that every animal species has its own master from whom individuals must solicit permission to hunt (Chapman 1992:169).

#### *Colonial Maya Guardian of Animals*

Written sources from the colonial period also attest to the importance of the guardian of animals and hunting rituals. During this time, the Yucatec Maya had several gods of the hunt, although their exact identification still proves elusive (e.g., Bill 1997; Taube 1992:60–62). However, T'zip was the guardian and protector of deer (Thompson 1970:308). In the sixteenth century, Diego de Landa (Tozzer 1941:155) described a rite dedicated to the hunting gods in which incense was burned and autosacrifice was performed while individuals danced with a deer skull headdress and arrow in hand. The 1562 discovery of “idols” used for deer-hunting and rain ceremonies in a cave at Maní helped fuel Diego de Landa's brutal auto-da-fé (Clendinnen 1987:73). Yet, in spite of the aggressive attempts to stop indigenous rituals, the colonial Yucatec Maya did not relinquish performing hunting rites, as there are repeated reports of offering incense, deer meat, corn bread, chocolate, and other foods to hunting gods while imploring their permission to take an animal (see Scholes and Adams 1938:63; Tozzer 1941: nn. 780–781).

One of the earliest references to the guardian of animals in the Maya highlands occurred in the late



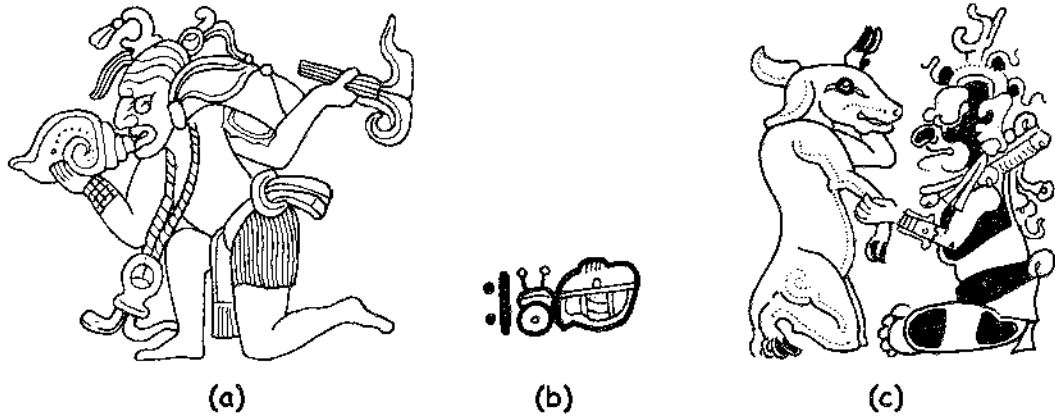


Figure 7. The Precolumbian deer guardian, T'zip. (a) T'zip, shown with deer ears, antlers, grass skirt, and conch shell trumpet; detail from ceramic vessel (see Kerr 1990:307; Modified from Taube 2003:475). (b) Wuk T'zip glyph, from the Dresden Codex, p.13c. (Modified from Taube 2003:475) (c) Deer held by god labeled Wuk T'zip, from Dresden Codex, p.13c (Modified from Taube 2003:475.) All drawings by Karl Taube.

eighteenth century when the first archbishop to Guatemala, Pedro Cortes y Larraz, conducted a moral and geographic survey of his dioceses. In the department of Huehuetenango he (1958:119–120) documented belief in a lord of the deer called Xaquí Coxel. In his report he described hunting rituals in which the deer carcass was laid upon a mat while copal incense and candles were burned as offerings. Intriguingly, he (1958:120) noted that people carefully guarded the bones of the deer so that the lord of deer would not be angry with them for taking one of his creatures, yet the final deposition of these remains was not provided.

In addition to ethnohistoric literature, the belief in a guardian of animals is evident in an indigenous text from the colonial period. The sixteenth-century K'iche' Popol Vuh firmly anchors the existence of the guardians of animals at the beginning of creation. The myth opens with the gods creating the animals of the forest as well as guardians to watch after them (Tedlock 1985:76–77). Later, in the predawn moments before the present world, these animals were petrified in stone. One god escaped this fate to become the guardian of the ancestral animals transformed into stone beings (Tedlock 1985:51).

#### *Precolumbian Maya Guardian of Animals*

Iconography and epigraphy from the Classic period document the existence of the Maya guardian of animals during that time (e.g., Fox and Justeson 1984:39;

Taube 1992:60–63, 2003:473–474). Taube (1997, 2003) has identified representations of the deer guardian T'zip in Classic period iconography. T'zip is portrayed as an old man with a deeply wrinkled face and attributes that include deer ears, antlers, and often a protruding lower lip that may mimic the shape of the deer's mouth when it browses (Figure 7a). Additionally, Taube (2003:473) notes, T'zip is recognizable by his hunting clothing and accoutrement, which can include a grass skirt, a broad-brimmed hat, or a conch shell trumpet. Visual depictions of T'zip appear in scenes on Classic period ceramic vessels (Taube 2003: Figure 26.7e, g), and his image is rendered in the painted murals at Bonampak (Taube 1997).

In addition to iconographic representations, there are written references to T'zip (Taube 2003). The text on Stela B at Copán, Honduras, records Waxaklajuun Ub'aah K'awil impersonating the animal guardian T'zip (Taube 2003: figure 26.7c). Taube (2003:figure 26.7b) also notes that a reference to T'zip appears in the text of the Dos Pilas Hieroglyphic Stairway 4. Both visual and epigraphic references to this deity are found in the later Maya codices. The Paris and Dresden codices contain glyphs for a deity called Wuk T'zip or "Seven T'zip" (Fox and Justeson 1984:39; Taube 2003:473). In the Dresden Codex, the written reference to Wuk T'zip is accompanied by the depiction of a deer-eared, antlered, protruding-lipped god holding a deer who is making the gesture *lob'* or woe (Taube 2003:473, 475; see also Figures 7b–c).

## Planting the Bones

Another belief informing the secondary deposition of animal remains at sacred sites involves the symbolic conflation of bone, seed, and regeneration. In the Tz'utujil Maya area, Carlsen and Prechtel (1991) have identified a conceptual framework linking death and rebirth called *jaloj-k'exoj*. The authors argue that *jaloj-k'exoj*, with its cyclic concept of time and regeneration, was a core paradigm with historical depth in the Maya area. *Jaloj-k'exoj* refers to the ongoing cycle of two concurrent types of change: *jal* and *k'ex* (Carlsen and Prechtel 1991). *Jal* is the change an individual goes through in a life cycle, or change at the "husk," whereas *k'ex* refers to generational change, or change at the "seed," and is associated with the process of making new from old and, thus, the "flowering of the dead" (Carlsen 1997:50; Carlsen and Prechtel 1991).

*Jaloj-k'exoj*, with its simultaneous concern with individual life-cycle changes (*jal*) and the transfer and continuity of life (*k'ex*), is given a material expression in the ritual offerings and faunal caches deposited at Maya shrine sites. A syncretic myth recorded by La Farge (1947) in the Chuj Maya town of Santa Eulalia, Guatemala, offers insight into the linkage among the flowering of the dead, the curation of bones, and the "planting" of the skeletal remains of hunted animals. Here the innate power in bones and their conflation with regeneration is explicit:

They say it was made, then the brothers were by far the first, celebrating fiestas, and they could not stand Him. The brothers were eating, and, as He was the youngest, He was waiting in the door. So they threw the bones in His face, and He picked them up and put them in His pouch, and took them to His mother.

He showed them to her, and "Mama," he said, "here are the titbits [*sic*] that my brothers gave me for you."

But then, He was so great, He put the meat on again, and they ate. He told her not to throw the bones away. He put together the bones of the flesh that the mother had eaten. Then He went off and planted them as one plants cabbage. He waited three days and built a fence about them. In a few days He went to look, and ah! How many animals, wild pigs, horses, deer,

and whatever more, all mixed together! And as He was so great, He blessed it, and the corals became stones, they were covered over, like a big cave. And he closed the gate with rocks. [La Farge 1947:50]

Within the conceptual framework of *jaloj-k'exoj*, it follows that if a hunter takes an animal's life (*jal*), then he must at the same time assure the regeneration of the animal (*k'ex*) by making the necessary sacrificial offerings to propagate the species via "planting the bones" in places in the landscape sacred to the guardian of animals.

The conflation of bone, seed, and regeneration that informs the formation of ritual fauna caches has historical depth in the Maya area. The K'iche' Maya have long considered bones as seeds ripe with latent life (e.g., Carmack 1981:352). Overt linkages between bone and regeneration are clearly seen in the Popol Vuh, where the mother of the Hero Twins is impregnated by a skull (Tedlock 1985:114) and the Hero Twins are reborn in the Underworld from their ground bones (Tedlock 1985:148–149). Furthermore, scholars have noted that depictions of bones as a source of new life is a common theme in Classic period iconography, which depicts skulls flowering with vegetation and human corpses sprouting forth as fruit trees (e.g., Carlsen and Prechtel 1991:32–36; Schele and Mathews 1998:120–123).

## Calling the Animals from the Stone: Where Are the Other Hunting Shrines?

Precolumbian, colonial, and ethnographic sources clearly document the existence of a supernatural guardian of animals in the Maya area. But although researchers have recorded some of the ritual practices associated with hunting, archaeological deposits associated with hunting rites have not been recorded or recognized as such. Thus, the question arises as to whether the faunal deposits I have recorded at shrine sites close to Lake Atitlán (see Figure 1) represent a local ritual practice that does not extend beyond this area.

This question, of course, will not be resolved without further fieldwork. However, information gleaned from colonial texts and twentieth-century ethnographies indicates that ritual prescriptions concerning the handling, curation, and secondary

deposition of faunal remains at places sacred to the animal guardian extend well beyond the communities around Lake Atitlán.

One of the earliest written reports of curating skeletal remains to placate the lord of the deer is from the late 1700s in Huehuetanango, Guatemala (Cortes y Larraz 1958:119–120). Much later, Grolig (1959:162) reported that in the Kanjobal town of San Miguel Acatán deer bones were stored on household altars and prayers were made to the lord of deer to protect the family. Later these remains were taken to a nearby cave and deposited. In the early twentieth century, La Farge and Byers visited a cave in the Jacalteco Maya area that contained “vast quantities of animal bones” (1931:243). Unfortunately, no mention was made as to why remains were deposited in caves or whether they functioned in hunting-related rites. Bloom and La Farge (1926:352–353) reported that the Tzeltal Maya of Chiapas curated mandibles and other trophies from animals taken in hunts that used hunting dogs. These remains were kept to remind the dogs of their successes during times when no hunting occurred.

A review of recent ethnographic literature also indicates that the curation and special deposition of animal remains extend beyond Lake Atitlán. The Huastec Maya of Veracruz curate deer bones, making sure none is broken, as this would bring death to the hunting dogs. After they have accumulated the remains of eight, nine, or 12 individuals, the bones are taken to a *to'oom*, a shallow hole encircled with stones, where they are deposited (Alcorn 1984:88). In the highlands of Guatemala, the K'iche' Maya of Momostenango have a sacred rock outcrop used for “calling the animals from the stone” (Cook 2000:114–115). The site, known as C'oyabaj (“Spider Monkey Rock”), is visited by dancers who wish to solicit permission from the earth deities to perform the Monkey Dance. Cook (2000:115) reports that deer skulls were cached among the stone offering hearths. A second site, located near the river below C'oyabaj, contained the image of a jaguar carved in stone with “many deer bones among the rocks” (Cook 1981:143). Allen Christenson (personal communication, 2004) notes that hunters return deer skeletal remains to various shrines outside of Momostenango, as deer are thought to be emissaries of the Mundo or the Earth Lord. These sites are used for asking per-

mission to hunt, and remains are returned as petitions for success in future hunting expeditions.

The belief that animal bones must be subjected to specialized deposition is found in Mesoamerican cultures outside of the Maya area. In Honduras, the Lenca store deer bones until they are deposited at mountain shrines during a ceremony (Chapman 1985:141). In Mexico, the Nahuatl of northern Hidalgo curate the bones of all animals taken in a hunt. During an annual ceremony for the animal owner, skeletal remains are brought to sacred places in the hills where they are deposited (Montoya Briones 1968:23). The Huichol believe that the deer does not die but, rather, is regenerated from its bones if they are carefully handled and stored (Myerhoff 1974:83, 201). The Mixe of Oaxaca curate the “skulls, mandibles, and other bones of animals they have killed,” noting that if they did not, then the guardian of animals would not send them any more to catch (Lipp 1991:95). On New Year's Day, these remains are returned to sacred sites on mountaintops or caves so that the guardian of animals can refresh them (Lipp 1991:95). Similarly, in the highlands of Guerrero, the Tlapanec curate the skulls and mandibles of hunted animals until they are ritually deposited at a sacred place in the mountains (Neff Nuixa 2001). During a ceremony the night before their deposition, the skeletal remains are presented with food offerings and wrapped in cotton, a symbolic act of regeneration in which the animals are provided with new “skin” or “clothes” (Neff Nuixa 2001:368–369). As in the Maya area, the notion that skeletal remains are a source of life has considerable time depth in central Mexico. Specifically, it is evident in a Mexica creation myth in which Quetzalcoatl created human beings by collecting the bones of ancestors and sprinkling them with his own blood (Caso 1958:12).

#### *Stone Corrals and Topographic Settings of Other Hunting Shrines*

Suggestions for locating other hunting shrine sites can be inferred from oral histories and myths about the guardian of animals. A common contemporary Maya belief is that the guardian of animals lives on a *finca* located inside a mountain, where he tends to his vast herds of wild animals kept in a corral (e.g., Cook 2000:114–115; Hofling 1991:136–153; La Farge 1947:50–51; Tedlock 1982:149; Wagley 1949:57). Entrance into this realm is through an

actual cave (e.g., Taube 2003:474; Tedlock 1982:149) or a rock outcrop (e.g., Cook: 2000:114–115; La Farge 1947:50) and can occur instantaneously when the hunter is transported inside the mountain for a meeting with the guardian of animals in response to breaking hunting protocol (e.g., Wagley 1949:57). Interestingly, the belief that the guardian of animals and his herds live inside a mountain extends beyond the Maya area, as it is reported from other regions of Mesoamerica (e.g., Foster 1945:181; Weitlaner 1981:107–131; Weitlaner and Castro G. 1954:113, 1973:210–211).

Colonial fiestas and indigenous creation myths provide further evidence of the linkage of supernatural wild animals and the animal guardian with stone and the interior of the mountain. In the 1680 celebration of the Fiesta del Volcán in Antigua, Guatemala, the Kaqchikel built a large effigy volcano within the main plaza of town (Hill 1992:1). Once the effigy was made, they captured and placed live deer, peccary, tapir, and coati into small cave-like openings built into the effigy, thereby replicating the worldview that animal spirit companions reside inside of a volcano (Hill 1992:1, 6). In the K'iche' Popol Vuh, jaguars, mountain lions, fer-de-lance, and rattlesnakes from the previous world were petrified in stone during the final moments prior to our present world (Edmonson 1971:180–181; Tedlock 1985:51).

Recently, Taube (2003) has suggested that the association of the animal guardian with entrance into the interior of a mountain extends into the Precolumbian past. Specifically, he (2003:474) notes that Stela B, at the site of Copán, Honduras, depicts the king Waxaklajuun Ub'aah K'awil impersonating a hunting god while positioned in the mouth of a hill cave. Indigenous beliefs that situate the guardian of animals within a topographic-mythological space inside a mountain suggest physical settings where we may find evidence of hunting ceremonialism. Topographic features such as prominent rock outcrops, rock shelters, and caves may be favored locations for these rites.

### Recognizing Archaeological Evidence of Hunting Ceremonialism

Material deposits associated with hunting rites at contemporary and nineteenth-century shrines, in combination with insights gleaned from indige-

nous texts, oral histories, and myths, suggest methods for identifying hunting ceremonialism from remains in the archaeological record. Animal remains deposited in ritual fauna caches have a unique life history and thus are recognizable according to a suite of criteria, including (1) taxonomic identification, (2) the types of skeletal elements present, (3) the condition of the remains, and (4) the spatial context of the deposit. Concerning the first, remains deposited in hunting caches are from wild species, as these animals are under the domain of the guardian of animals. Thus, basic taxonomic identification of the species present in a given assemblage is important in identifying its association with hunting ceremonialism. This may be especially useful for deposits in post-contact sites when more domesticated species were available for ritual offerings.

The types of skeletal elements constituting the assemblage should be a helpful criterion regardless of time period. As hunters butchered their prey elsewhere, remains curated for eventual deposition underwent a selection process. Deposits containing a high number of specific bones, unrelated skeletal elements, or the remains of a single species clearly indicate human agency and the conscious selection of remains for special treatment and discard.

Another important attribute of hunting caches is seen in the condition of the remains entering the archaeological record at shrines. The purpose of a hunting ritual is to show respect and deference to the guardian of animals, who is the rightful owner and master of all wild species. Thus, remains chosen for curation and eventual deposition at sacred sites were deposited intact and in an unburned state. Hunting protocol that involves restrictions against breaking animal bones as a means to placate the animal guardian extends back to the colonial period (Cortés y Larraz 1958:119–120). Such specialized treatment contrasts with the remains of sacrificial animals, which are commonly burned, and feasting refuse, which can be burned with the bones cut, smashed, and fragmented (Brown 2002).

Finally, the spatial context of a hunting fauna cache is important. As mentioned earlier, hunting deposits are left at topographic features associated with the guardian of animals. In addition to this macrospatial perspective, within-site spatial context is also important. Once hunters have deposited

skeletal remains in caches, typically they are not disturbed by people. As the bones do not contain meat when deposited, they are less attractive to scavengers. Though there may be some postdepositional disturbance from animals, the deposits I observed were largely piled on top of one another in discrete caches (see Figure 5) or tucked into rock alcoves, thereby protecting some of the bones from disturbance by scavengers.

*Precolumbian Hunting Rites in Caves during the Classic Period*

Applying the above criteria to archaeological deposits allows for new interpretations of problematic faunal deposits recovered in lowland Maya caves. A review of published archaeological reports with in-depth faunal analyses reveals evidence that some mammal remains were secondarily deposited in southern Maya lowlands caves during the Classic period (Brady 1989; Emery 2004; Pendergast 1969, 1971, 1974; Pohl 1983). In a Late Classic period assemblage from the Eduardo Quiroz Cave in Belize, Savage observed a "puzzling and uneven distribution" in the types of medium- and large-mammal bones present (Pendergast 1971:82). Specifically, he noted that opossum, coati, paca, forest rabbit, tapir, brocket deer, and white-tailed deer were represented by a small number of unrelated skeletal elements, whereas the skeletal remains from small mammals likely inhabiting the cave had many more elements present. The unusual skew in the bones of medium and large mammals suggested that "only portions of these animals were brought to the cave" to be deposited (Pendergast 1971:83).

The selection and secondary deposition of mammal remains also are reported in the Late Classic assemblage at Actun Polbilche Cave in Belize. Pendergast (1974) notes that this deposit contained an unmodified cranium and mandible from an opossum and two paca, suggesting the only heads were brought into the cave and left as offerings. In addition to unmodified remains, numerous incised teeth from domesticated dogs, a cougar or jaguar, and the brocket deer were deposited in this cave (Pendergast 1974). At Actun Balam Cave, Belize, a white-tailed deer skull and long bones as well as long bones and a cranium fragment from the jaguarundi were recovered (Pendergast 1969:58).

Similar evidence of the selection of certain mammal remains for deposition in a sacred con-

text has been noted in Late Classic deposits at Naj Tunich Cave in Guatemala (Brady 1989). Brady's (1989:370) excavations produced remains from various species including armadillo, jaguarundi, opossum, coati, white-tailed deer, brocket deer, and gopher. Of these, 62 percent of the skeletal elements present (NISP) were from three important subsistence species: white-tailed deer, brocket deer, and peccary (Brady 1989:376). Importantly, Brady (1989:377-378) notes that two attributes make the Naj Tunich faunal deposit unique: (1) an unusually high percentage (39 percent) of long bones that were complete or nearly so and (2) a very low percentage (18 percent) of burned bones present. Based on the types of species, as well as the condition of the remains, he (1989:377) suggests that most of the medium- and large-mammal remains were brought to the cave and left as an offering. Interestingly, a similar pattern of depositing intact and unburned bones was observed in the Eduardo Quiroz Cave assemblage (Pendergast 1971:79).

In these cave deposits, we see several material expectations for the life history of skeletal remains associated with hunting ceremonialism: (1) the bones present have undergone a selection process in which certain taxa and elements were deemed important for special deposition, (2) a high number of the remains are not broken or cut through, (3) most bones are not burned, and (4) the bones are deposited in a topographic setting associated with the animal guardian. This constellation of attributes raises the strong possibility that these remains were returned to caves in the context of hunting ceremonies designed to placate the animal guardian and ensure the procreation of the species.

## Conclusion

Ethnographic information from the Maya, Lenca, Mixe, Tlapanec, Nahua, and Huichol areas shows that certain skeletal remains are not disposed of in household middens. For archaeologists interested in making inferences concerning diet or status from fauna recovered in household excavations, these contemporary practices may give pause. But if, in the past, individuals engaged in conservatory and secondary discard practices with certain animal remains, we would expect to see evidence of this via biases in the types of fauna recovered from residential sites. In fact, we do see significant skews

in the remains recovered at some Maya sites. Pohl (1990:163), noting the surprising lack of skulls recovered from various Maya lowland sites, wonders whether this reflects the use of certain bones as special offerings linked with regeneration. Interestingly, many deer remains recovered from lowland caves consist of crania, teeth, and antlers, suggesting that deer skulls were left in these ceremonial contexts (Pohl 1983:89; Pohl and Pohl 1983). Were these skulls part of the ritual accoutrement for ceremonies performed in these sacred contexts? Perhaps deer skulls were selected for "planting" in caves during hunting rites associated with placating the guardian of animals and promoting the regeneration of the species, as is still done in some areas today.

Recent research clearly demonstrates that the Pre-Columbian Maya deposited *jute* shells in caves (Halperin et al. 2003). Did the ancient Maya return certain mammal remains to sacred places as a form of negotiation with the animal guardian in hopes of a successful hunt, or begging forgiveness for a life already taken, or actively attempting to propagate the species through "planting" the bones? Limited data suggest that the Maya deposited mammal remains in caves in the southern lowlands (Brady 1989; Emery 2004; Pendergast 1969, 1971, 1974; Pohl 1983; Pohl and Pohl 1983). However, the extent to which this ritual behavior was practiced will not be known without further research focusing on the types of topographic settings likely used for these rites. Myths and indigenous texts suggest specific topographic locations in which to look for archaeological deposits associated with hunting ceremonialism. The long-standing symbolic linkage of stone and a stone corral with wild animals throughout the Maya area (e.g., Cook 2000:114–115; Hofling 1991:136–153; La Farge 1947:50–51; Tedlock 1982:147–148; Wagley 1949:57; Vogt 1969: 371–374), as well as greater Mesoamerica (Foster 1945:181; Weitlaner 1981:107–131; Weitlaner and Castro G. 1954:113, 1973:210–211), suggests that prominent rock outcrops, standing stones, rock shelters, and caves are productive places to search for other hunting-related shrine sites.

*Acknowledgments.* I would like to thank the Instituto de Antropología e Historia in Guatemala, which granted permission for this work. Special thanks go to Mindy Zeder, at the Smithsonian National Museum of Natural History, who

assisted in the identification of animal remains from photographic documentation, and Allen Christenson, who told me about the site of Iglesia Abáj. I would like to extend sincere gratitude to Karl Taube, who generously shared his wonderful illustrations of the T'zip god. Thanks go to Sergio Garza, who translated the Spanish abstract, as well as Fernando Marte and Karla Muñoz, who edited an earlier version. This research was funded in part by a Dissertation Improvement grant from the National Science Foundation (#BCS-9912134), with additional writing support in the form of a Junior Fellowship in Pre-Columbian Studies at Dumbarton Oaks, Washington, D.C. Many people read earlier versions of this article including James Brady, Michael Deal, Kitty Emery, Suzanne Fish, Maria Dulce Gaspar, Brian McKee, Wendy Teeter, and Evon Vogt, as well as two anonymous reviewers, and I wish to thank all of them for their suggestions, which made this article stronger. As always, any mistakes are solely my responsibility.

## References Cited

- Alcorn, Janis B.  
1984 *Huastec Mayan Ethnobotany*. University of Texas Press, Austin.
- Bill, Cassandra R.  
1997 Roles and Relationships of God M and Other Black Gods in the Codices, with Specific References to Pages 50–56 of the Madrid Codex. In *Papers on the Madrid Codex*, edited by Victoria R. Bricker and Gabrielle Vail, pp. 111–145. Middle American Research Institute Publication No. 64. Tulane University, New Orleans.
- Bloom, Frans, and Oliver La Farge II  
1926 *Tribes and Temples: A Record of the Expedition to Middle America Conducted by the Tulane University of Louisiana in 1925*. Middle American Research Institute Publication No. 1. Tulane University, New Orleans.
- Brady, James E.  
1989 An Investigation of Maya Ritual Cave Use with Special Reference to Naj Tunich, Peten, Guatemala. Ph.D. dissertation, University of California, Los Angeles. University Microfilms, Ann Arbor.
- Brown, Linda A.  
2002 The Structure of Ritual Practice: An Ethnoarchaeological Exploration of Activity Areas at Rural Community Shrines in the Maya Highlands. Ph.D. dissertation, University of Colorado, Boulder. University Microfilms, Ann Arbor.
- Brown, Linda A., and Luis Alberto Romero  
2002 Lugares Sagrados para Ritos de la Cacería. In *XV Simposio de Investigaciones Arqueológicas en Guatemala, 2001*, edited by Juan Pedro Laporte, Héctor Escobedo, and Bárbara Arroyo, pp. 771–778. Museo Nacional de Arqueología y Etnología de Guatemala, Guatemala City.
- Cabarrús, Carlos Rafael  
1998 *La Cosmovisión Q'eqchi' en Proceso de Cambio*. Cholsamaj, Guatemala City.
- Carlsen, Robert  
1997 *The War for the Heart and Soul of a Highland Maya Town*. University of Texas Press, Austin.
- Carlsen, Robert, and Martin Prechtel  
1991 The Flowering of the Dead: An Interpretation of Highland Maya Culture. *Man* 26:23–42.
- Carmack, Robert M.  
1981 *The Quiche Mayas of Utiatlán: The Evolution of a*

- Highland Maya Kingdom*. University of Oklahoma Press, Norman.
- Caso, Alfonso  
1958 *The Aztecs: People of the Sun*. Translated by Lowell Dunham. University of Oklahoma Press, Norman.
- Chapman, Ann  
1985 *Los Hijos del Copal y la Candela*. Universidad Nacional Autónoma de México Imprenta Universitaria, México, D.F.  
1992 *Masters of Animals: Oral Traditions of the Tolupan Indians, Honduras*. Gordon and Breach, Philadelphia.
- Clendinnen, Inga  
1987 *Ambivalent Conquests: Maya and Spaniard in Yucatan, 1517-1570*. Cambridge University Press, Cambridge.
- Cook, Garrett W.  
1981 *Supernaturalism, Cosmos and Cosmogony in Quichean Expressive Culture*. Ph.D. dissertation, State University of New York. University Microfilms, Ann Arbor.  
2000 *Renewing the Maya World: Expressive Culture in a Highlands Town*. University of Texas Press, Austin.
- Cortes y Larraz, Pedro  
1958 [1768-1770] *Descripción Geográfico-Moral de la Diócesis de Goathemala*, Tomo 2. Tipografía Nacional, Guatemala City.
- Edmonson, Munro S.  
1971 *The Book of Counsel: The Popol Vuh of the Quiche Maya of Guatemala*. Middle American Research Institute Publication No. 35. Tulane University, New Orleans.
- Emery, Kitty F.  
2004 *Animals from the Maya Underworld: Reconstructing Elite Maya Ritual at the Cueva de los Quetzales, Guatemala*. In *Behavior behind Bones: The Zooarchaeology of Ritual, Religion, Status and Identity*, edited by Sharyn Jones O'Day, Wim Van Neer, and Anton Ervynck, pp. 101-113. Oxbow Books, Oxford.
- Foster, George M.  
1945 *Sierra Popoluca Folklore and Beliefs*. University of California Press, Los Angeles.
- Fox, James A., and John S. Justeson  
1984 *Polyvalence in Mayan Hieroglyphic Writing*. In *Phoneticism in Maya Hieroglyphic Writing*, edited by John S. Justeson and Lyle Campbell, pp. 17-76. Institute for Mesoamerican Studies, State University of New York at Albany, Publication 9. Albany.
- Freidel, David, Linda Schele, and Joy Parker  
1993 *Maya Cosmos: Three Thousand Years on the Shaman's Path*. William Morrow and Co., Inc., New York.
- Gilbert, B. Miles  
1993 *Mammalian Osteology*. Missouri Archaeological Society Inc., Columbia.
- Grofflig, Francis Xavier  
1959 *San Miguel Acatan, Huehuetanango, Guatemala: A Modern Maya Village*. Ph.D. dissertation, University of Indiana. University Microfilms, Ann Arbor.
- Halperin, Christina T., Sergio Garza, Keith M. Prufer, and James E. Brady  
2003 *Caves and Ancient Maya Ritual Use of Jute*. *Latin American Antiquity* 14:207-219.
- Hill, Robert M., II  
1992 *Colonial Cakchiquels: Highlands Maya Adaptation to Spanish Rule 1600-1700*. Harcourt Brace Jovanovich, Fort Worth.
- Hofling, Charles A.  
1991 *Itz' Maya Texts with a Grammatical Overview*. University of Utah Press, Salt Lake City.
- Kerr, Justin  
1990 *The Maya Vase Book*, Vol. 2. Kerr Associates, New York.
- La Farge, Oliver, II  
1947 *Santa Eulalia: The Religion of a Cuchumatán Indian Town*. University of Chicago Press, Chicago.
- La Farge, Oliver, II, and Douglas Byers  
1931 *The Year Bearer's People*. Middle American Research Series, Publication No. 3. Tulane University, New Orleans.
- Lipp, Frank J.  
1991 *The Mixe of Oaxaca: Religion, Ritual and Healing*. University of Texas Press, Austin.
- Lothrop, Samuel  
1933 *Atitlán: An Archaeological Study of Ancient Remains on the Borders of Lake Atitlán, Guatemala*. Carnegie Institution of Washington, Publication No. 44. Washington, D.C.
- Monaghan, John  
1995 *Covenants with Earth and Rain: Exchange, Sacrifice and Revelation in Mixtec Society*. University of Oklahoma Press, Norman.
- Montoya Briones, José de Jesús  
1968 *Magia y cacería entre los nahuas de la Sierra de Hidalgo*. Boletín, Instituto Nacional de Antropología y Historia 34.
- Myerhoff, Barbara G.  
1974 *Peyote Hunt: The Sacred Journey of the Huichol Indians*. Cornell University Press, Ithaca.
- Neff Nuixa, Françoise  
2001 *La Lucera y El Volcán Negro*. In *La Montaña en el Paisaje Ritual*, edited by Johanna Broda, Stanislaw Iwaniszewski, and Arturo Montero, pp. 353-374. CONACULTA, Instituto Nacional de Antropología e Historia, México, D.F.
- Olsen, Stanley J.  
1982 *An Osteology of Some Maya Mammals*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, Vol. 73. Harvard University Press, Cambridge.
- Pendergast, David M.  
1969 *The Prehistory of Actun Balam, British Honduras*. Royal Ontario Museum, Toronto.  
1971 *Excavations at Eduardo Quiroz Cave, British Honduras (Belize)*. Royal Ontario Museum, Toronto.  
1974 *Excavations at Actun Polbilche, Belize*. Royal Ontario Museum, Toronto.
- Pohl, Mary D.  
1983 *Maya Ritual Faunas: Vertebrate Remains from Burials, Caches, Caves, and Cenotes in the Maya Lowlands*. In *Civilization in the Ancient Americas*, edited by Richard M. Leventhal and Allen Kolata, pp. 55-103. University of New Mexico Press and Peabody Museum of Archaeology and Ethnology, Cambridge, Massachusetts.  
1990 *The Ethnozoology of the Maya: Faunal Remains from Five Sites in the Petén, Guatemala*. In *Excavations at Seibal*, edited by Gordon Willey, pp. 143-174. Memoirs of the Peabody Museum of Archaeology and Ethnography, Harvard University, Nos. 1-4. Cambridge.
- Pohl, Mary D., and John M. Pohl  
1983 *Ancient Maya Cave Rituals*. *Archaeology* 36:28-32, 50-51.
- Redfield, Robert, and Alfonso Villa Rojas  
1934 *Chan Kom: A Maya Village*. Carnegie Institution of Washington, No. 448. Washington, D.C.
- Sapper, Karl  
1897 *Northern Central America with a Trip to the Highland of Anahuac: Travels and Studies of the Years 1888-1895*. F. Viewig, Brunswick, Germany.
- Schele, Linda, and Peter Mathews  
1998 *The Code of Kings: The Language of Seven Sacred*

- Maya Temples and Tombs*. Scribner, New York.
- Scholes, France V., and Eleanor B. Adams (editors)  
1938 *Diego Quijada, Alcalde Mayor de Yucatán, 1561–1565*. 2 vols. Editorial Porrúa, México, D.F.
- Taube, Karl  
1992 *The Major Gods of Ancient Yucatan*. Studies in Pre-Columbian Art and Archaeology, No. 32. Dumbarton Oaks Research Library and Collection, Washington, D.C.  
1997 A God Named Zip. *Archaeology* 50(3):39.  
2003 Ancient and Contemporary Maya Conceptions about Forest and Field. In *The Lowlands Maya Area: Three Millennia at the Human–Wildland Interface*, edited by Arturo Gómez-Pompa, Michael F. Allen, Scott L. Fedick, and Juan J. Jiménez-Osornio, pp. 461–492. Food Products Press, New York.
- Tedlock, Barbara  
1982 *Time and the Highland Maya*. University of New Mexico Press, Albuquerque.
- Tedlock, Dennis  
1985 *Popol Vuh: The Mayan Book of the Dawn of Life*. Simon and Schuster, New York.
- Thompson, J. E. S.  
1930 *Ethnology of the Mayas of Southern and Central British Honduras*. Anthropological Series 17(2). Field Museum of Natural History, Chicago.  
1970 *Maya History and Religion*. University of Oklahoma Press, Norman.
- Tozzer, Alfred  
1907 *A Comparative Study of the Mayas and the Lacandones*. Macmillan Co., New York.  
1941 *Landa's Relación de las Cosas de Yucatán*. Translated by Alfred Tozzer. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.
- Villa Rojas, Alfonso  
1945 *The Maya of East Central Quintana Roo*. Carnegie Institution of Washington, Publication No. 559. Washington, D.C.
- Vogt, Evon Z.  
1969 *Zinacantan: A Maya Community in the Highlands of Chiapas*. Harvard University Press, Cambridge.
- Wagley, Charles  
1949 The Social and Religious Life of a Guatemalan Village. *American Anthropologist* Memoir No. 71.
- Weitlaner, Robert J.  
1981 *Relatos, Mitos y Leyendas de la Chinantla*. Selection, introduction, and notes by María Sara Molinari, María Luisa Acevedo, and Marlene Aguayo Alfaro. Institución Nacional Indigenista, México, D.F.
- Weitlaner, Robert J., and Carlos Antonio Castro G.  
1954 *Mayultianguis y Tlacoatzintecpec: Papeles de la Chinantla I*. Serie Científica 3. Museo Nacional de Antropología, México, D.F.  
1973 *Usila, morada de colibríes: Papeles de la Chinantla VII*. Serie Científica 11. Museo Nacional de Antropología, México, D.F.
- Wisdom, Charles  
1940 *The Chorti Indians of Guatemala*. University of Chicago Press, Chicago.

### Notes

1. For more detailed discussion of the methods used to locate and record shrine sites, see Brown 2002.
2. Taxonomic identification primarily was done in the field using osteological reference books and keyed illustrations (e.g., Gilbert 1993; Olsen 1982). To supplement field identification, scaled photographs were taken of each type of cranium and mandible present, as well as long bones and scapulae. The photographic documentation allowed for verification of identification upon return to the United States. Many thanks go to Mindy Zeder at the Smithsonian's National Museum of Natural History for her help with the identification of species from photographic documentation.

---

Received June 17, 2004; Accepted January 15, 2005;  
Revised February 24, 2005.