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May, 2016

ANALYSIS OF MORTUARY PATTERNS AND BURIAL PRACTICES IN THE
CLASSIC PERIOD BURIALS FROM THE MAYA SITE OF K'AXOB IN BELIZE

A Thesis

Presented to

The Faculty of the Department

of Anthropology

University of Houston

In Partial Fulfillment

Of the Requirements for the Degree of

Master of Arts

By

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Christina Gwyn

APPROVED:

Rebecca Storey, Ph.D.
Committee Chair

Randolph Widmer, Ph.D.

Dirk Van Tuerenhout, Ph.D.
Curator of Anthropology
Houston Museum of Natural Science

Steven G. Craig, Ph.D.
Interim Dean, College of Liberal Arts and Social Sciences
Department of Economics

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ABSTRACT

Mortuary patterns among the Maya are quite diverse, and have been studied for many years. The scope of what is understood about Maya burial treatment has widened with the discovery of more skeletal remains at Maya sites. Field reports as well as skeletal remains were analyzed to determine the mortuary patterns and burial practices from the Classic period burials at the Maya site of K'axob. Age was determined mostly from dental wear and tooth eruption patterns, and sex was determined based on measurements from the femurs and tibiae when intact bones were found. The aspects of burial practices that were observed included age, sex, number of interments, type of interment, burial position, ceramic complex, offerings, location, and orientation. From the analysis of the Classic period burials and the comparison to those from the Preclassic at K'axob and the Classic at a nearby site, Nohmul, the mortuary patterns and burial practices were determined to be generally consistent with those of the lowland Maya area. In the Classic period burials at K'axob, the most common interments were single, primary interments, and of these the most common burial position was extended/supine. Private interments dominated public interments and of the individuals for whom age and sex could be determined, adult males were the most common group. Evidence for ancestor veneration was also found in forms of burial placement, instances of multiple, secondary interments, as well as grave goods.

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Chapter 1: Introduction and Expectations

Introduction

Until recently, the Ancient Maya had been regarded as elusive and mysterious. Not much was known about their culture, which led many people to speculate unfounded scenarios that depicted them in a variety of different ways, from a peaceful people who represented a perfect, violence-free society, to savages who killed for sport and took part in cannibalistic rituals. However, now that more and more scholars and scientists are taking an interest in the Maya area, the truth of this mysterious and cryptic culture is slowly beginning to reveal itself. The “Myth of the Maya” no longer evades us as there is now a relatively clear picture of what life was like at the major Maya centers. However, many smaller communities and villages remain unstudied and for many sites complete chronologies have not been established. K’axob is one of these sites. It was a village during the Preclassic period but became a minor center during the Classic period (McAnany 2004a:12). The Preclassic has been studied and its information published, but very little information on the Classic period at this site has been published. One of the archaeological resources that is important for the Maya area in general as well as for K’axob is mortuary analysis. Mortuary analysis is a means of identifying social or ethnic memories, identities and boundaries, and symbolism and cosmology through studying observable aspects of burials and skeletal remains (Shimada et al. 2004:370). Mortuary and skeletal analysis can give insight into the lives of the individuals who lived thousands of years ago and the culture at large. Though the skeletal remains at K’axob and throughout the Maya area in general are not always well preserved, we can still gain valuable information from a preliminary analysis of the mortuary treatment of these individuals. Through mortuary analysis, differences in burial treatment can be

determined which enhances our perspective on a population. Through these differences we can see social status, gender inequalities, vocational stratification, and many more categorical differences.

Problem and Hypotheses

In this research, I will analyze and compare the skeletal remains and mortuary patterns including the possibility of ancestor veneration at the Classic Maya site of K'axob in Belize. Mortuary practices in the Maya area are quite diverse depending on location and time period, yet general patterns can be seen between and throughout individual sites.

Bioarchaeology can uncover many aspects of a culture that no other field can ascertain.

Analysis of skeletal remains and mortuary practices can give many insights into a population including everything from status differentiation to belief systems to population history (Chase and Chase 1996:61). Through skeletal and mortuary analysis important information about cultures can be uncovered, such as activity patterns, health and wellness, trade networks, and much more. For this project, the cultural components that will be focused on are mortuary and burial rituals and practices as well as societal differentiation based on these burial patterns which includes burial position, type of interment, number of interments per burial, and the presence or absence and type of burial accoutrements.

The Maya had very strong beliefs about death and life and their mortuary practices and the patterns found in archaeological contexts are able to show these beliefs. "Death was greatly dreaded by all, the more so since the deceased did not automatically go to any paradise" (Coe 2011:216). Beliefs about the afterlife included the assumption that people would go to different places after death (Coggins 1988:80). The philosophy of death focused on a complete cycle that culminated just before rebirth, rather than on death (Coggins

1988:81). The cycles for men were based on those of the mythical ancestors who were submerged for half of the cycle awaiting new creation in the sea before being reborn like the sun (Coggins 1988:81). Focus on both cyclic completion and beginning the next cycle was integral to Maya religion (Coggins 1988:81). When many individuals died, they were placed in burials that allowed the family to keep them close and remember them. Families venerated their loved ones by placing them in residential structures after death (McAnany 2013:53). Mortuary patterns also linked rulers and the populace through kinship and burial shrines (Demarest 2004:117). Through a public burial in a space with monumental architecture, rulers provided a place for the general population to remember and “worship” them, while also providing a visual manifestation of the royal lineage. This connection of royal kinship likely mirrored the familial inclusiveness that was present in the mortuary practices of the populace. Meaning, that the Maya occasionally buried family members together, adding individuals to one grave as they died.

The mortuary practices and skeletal analysis of the Maya can provide information about how communities and families valued individuals and the patterns in how mortuary practices were carried out. This research will require an analysis of the skeletal material from K’axob that has been previously determined to be from the Classic Maya period, as well as an analysis of the field notes, forms, and maps associated with the excavations from which the skeletal remains were recovered. In regards to the skeletal remains, an inventory will be taken, and age and sex will be determined when possible and appropriate. Specifically, the mortuary patterns that will be considered and analyzed are burial position, single versus multiple interments, the incidence of primary and secondary interments, location, orientation, and the types of associated burial accoutrements (McAnany, Storey, and Lockard 1999:129).

These patterns are relevant to this research because they have been observed and analyzed in burials at other Maya sites, including those from the Preclassic Maya period at K'axob. It will also be worthy to note any instances of secondary interment that appear to be examples of ancestor veneration, which is the inclusion of multi-generational individuals who were likely from the same familial line in a single burial. Due to the ritual and spiritual nature of the Maya, this is a distinct possibility for reasons I will discuss in a subsequent section. The conclusions that this research yields will then be compared to and contrasted with those from the Preclassic period at K'axob, as well as those from another Maya site near K'axob, Nohmul (Figure 1.1).

This research will focus specifically on the Maya site of K'axob during the Classic period. I will argue that the mortuary practices used at the Maya site of K'axob during the Classic period are a shift from those at K'axob during the Preclassic and are similar to the Classic period burials of other sites, such as Nohmul, near K'axob. It has been stated that mortuary interments from the Preclassic and Early Classic deposits of K'axob show significant change (McAnany, Storey, and Lockard 1999:129). These comparisons will provide reference points for creating patterns of mortuary practices in the Maya area across the Preclassic and Classic time periods. I hypothesize that in the Classic period burials of K'axob the sex ratio will be skewed towards males. This sort of skewed sex ratio is common in the Maya area for reasons that are not fully understood, but will be discussed in Chapter 2. I also hypothesize that single burials will be more common than multiple burials, and primary interments more common than secondary interments. During the Preclassic, the most common interment went from being single, primary burials to multiple, secondary burials. Once into the Classic period, many Maya sites returned to primary, single interments, and I

expect to see the same shift in the Classic period burials at K'axob. I also believe that among the primary burials, the extended or supine position will predominate the burial positions.

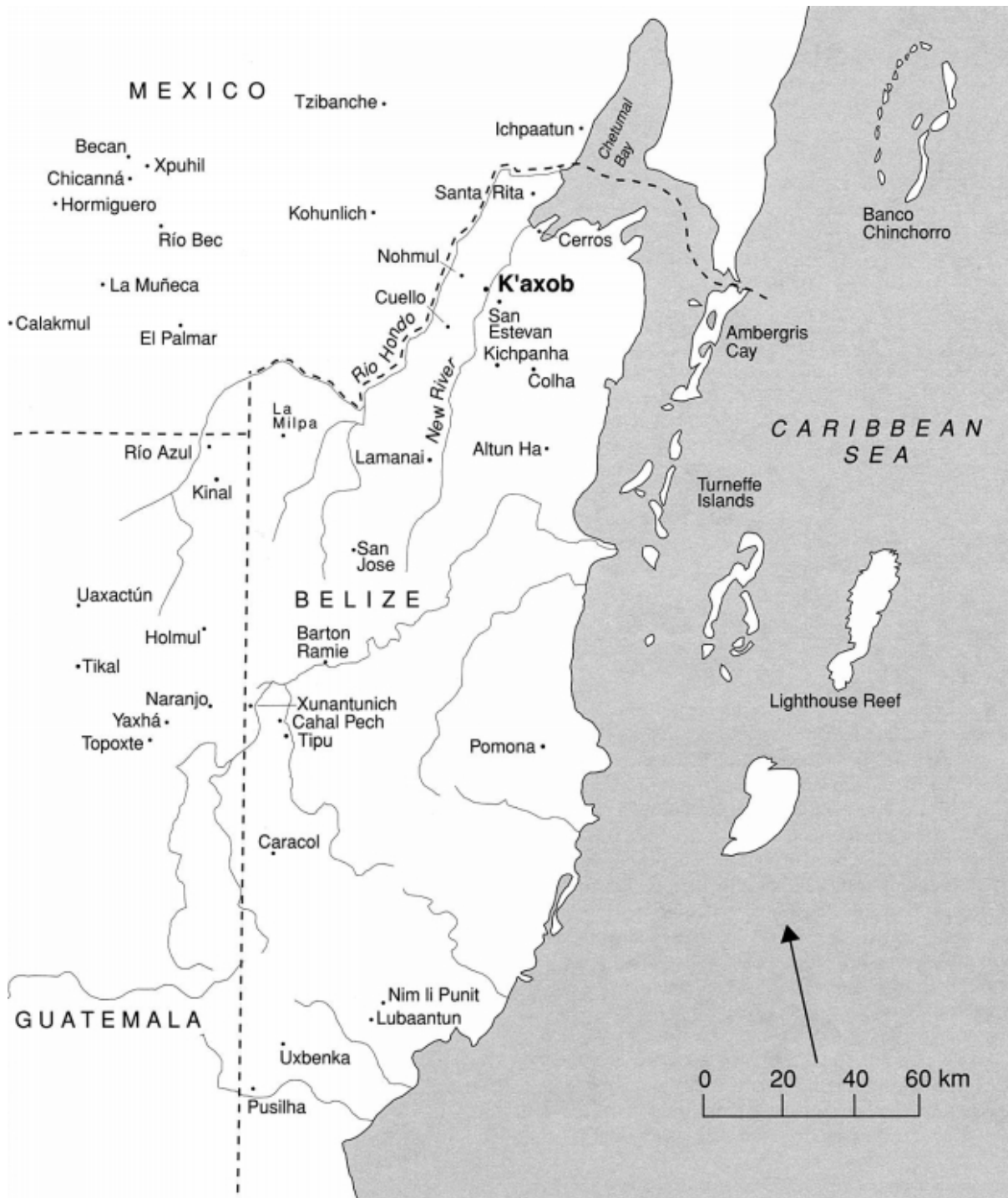


Figure 1.1: Map Showing K'axob and Nohmul (adapted from Varela et al. 2001:178)

This is linked to the patterns from the early Preclassic, when the supine position was associated most commonly with primary burials. I hypothesize that because of importance of the East-West direction in Maya culture, which will be discussed in Chapter 2, there will be a predominance of burials associated with that direction. Both East and West were associated symbolically with death and rebirth and with the importance of ritual to the Maya, it is likely they took these directions into consideration regarding burials. I hypothesize that the burial accoutrements in the Classic period will be similar to those of the Preclassic, with few burials including items such as jadeite and most containing everyday items such as pottery and shell. Overall, I expect to find that the mortuary patterns present at the Maya site of K'axob during the Classic period are a shift from those at K'axob during the Late Preclassic since the rest of the culture seems to have experienced a change in pace at that time, which can be seen through the addition of monumental architecture at the site beginning in the Classic period. To fully understand the scope of this thesis, background information on the Maya, Classic Maya mortuary practices, the site of K'axob during the Preclassic period, and the excavations done on Classic period K'axob burials is needed, and will be discussed in Chapters 2 and 3.

Expectations and Relevance

I expect to show that the burials at the Classic site of K'axob were both similar to and distinct from the mortuary patterns of other sites in the area. I expect to find that the mortuary practices used at the Maya site of K'axob during the Classic period are not the same as those used during the Preclassic, but instead show a shift mirroring the growth of the community at that time. Because the site was growing and changing in other ways, such as the inclusion of forms of monumental architecture in the Classic period, it is not unreasonable to expect the mortuary patterns and burial practices to also have changed. I expect to see differential

treatment of individuals based on age, sex, and social class. I expect, through analyzing mortuary patterns, to discover evidence of ancestor veneration. I expect to find that burials will have a directionality focused on East and West. Finally, I expect that there will be more males found than females or children.

This problem is significant because no formal mortuary analysis has been performed using these remains, and there has been no analysis of the skeletal remains for mortuary patterns and signs of differential burial treatment at K'axob during the Classic period. The Preclassic period burials have been analyzed and this information will be used to compare with and contrast against the burials of the Classic period. This research will provide information about the lives and deaths of the individuals who inhabited K'axob during the Classic period, adding to the overall knowledge of the location and the Maya culture in general. This research will show mortuary patterns that indicate status differentiation, the importance of objects in burial contexts, and ritual processes that accompanied mortuary interments.

Chapter 2: The Classic Lowland Maya

The Classic period of the Maya civilization began around A.D. 250. The transition to this period is generally marked as the point at which the traits of civilization that had begun in the Preclassic blossomed into the thriving culture that is usually associated with the term “Ancient Maya” (Nations 2006:22). The Classic period has traditionally been seen as the “golden age” of the Maya (Demarest 2004:89). These characteristics, some of which are listed below, are most often associated with Classic Maya culture. It was during this peak period of Maya civilization that the lowlands hosted an interconnected web of cities and ceremonial centers (Nations 2006:23). It is suggested that during the Classic period, as many as 4 to 5 million people lived in 60 regional capitals (Webster 2002:174). This period of thriving cities lasted many centuries. Between A.D. 700 and 900, lowland Maya civilization began to disintegrate and as much as 90% of the population either died or abandoned the area, though the causes for this collapse are still widely debated (Nations 2006:24).

As the Late Preclassic ended, what we know to be the Classic Maya civilization was beginning to take shape. This period is characterized by temples arranged around plazas, construction with limestone and plaster, apron molding and frontal stairways on pyramids, tomb building, corbeled vaults, stela-altar monument complexes, and frescoes with naturalistic subjects (Coe and Houston 2015:90; Demarest 2004:15). This era saw the intrusion of new ceramic traits, including Maya polychrome distinguished by a brilliant range of colors applied over a glossy, translucent orange underslip (Coe and Houston 2015:90). Though hieroglyphic writing is sporadic throughout the Late Preclassic, long count dates are not found, but inscribed texts definitely celebrate the accomplishments of great personages (Coe and Houston 2015:90). The use of distinctive forms of writing and calendric systems in

carved stone texts would define the Classic period in the lowlands (Demarest 2004:15).

These characteristics and traits that were beginning to take shape would lead to thriving Maya culture that came from the Classic period.

Geographic Setting

Mesoamerica is a vibrant geographical area, which has hosted many indigenous groups over thousands of years. The Maya were relatively confined to a single, unbroken area of Mesoamerica that includes all of the Yucatan Peninsula, Guatemala, Belize, parts of Tabasco and Chiapas, and the western portions of Honduras and El Salvador (Coe and Houston 2015:11) (Figure 2.1). The Maya area is generally split into two distinct sections, the highlands and the lowlands. This research is focused on the lowlands because that is where the site of K'axob is situated, in Pulltrouser Swamp along the New River in Belize. The lowland zone lies below 800 m in elevation but provides an array of resources within a varied environment (Sharer and Traxler 2006:42).

The Peten-Yucatan Peninsula is a single limestone shelf that juts up into the waters of the Gulf of Mexico on the west and north borders, its eastern shores facing the Caribbean (Coe and Houston 2015:16). The southern topography is rugged with karst hills rising above the plain, though as one moves north the country becomes flatter with chains of low hills in the Puuc area (Coe and Houston 2015:16). In the lowlands, there are few permanently flowing rivers, except in the west and southeast where extensive alluvial bottomlands can be found (Coe and Houston 2015:16). The major rivers flowing through the lowlands are the Motagua, the Belize River, the New River, and the Río Hondo, all which flow into the Caribbean (Coe and Houston 2015:17). The lowland climate is hot and the rainy season lasts from May to December though these rains are not especially abundant or reliable with much



Figure 2.1: Map of the Maya Area (adapted from Demarest 2004:3)

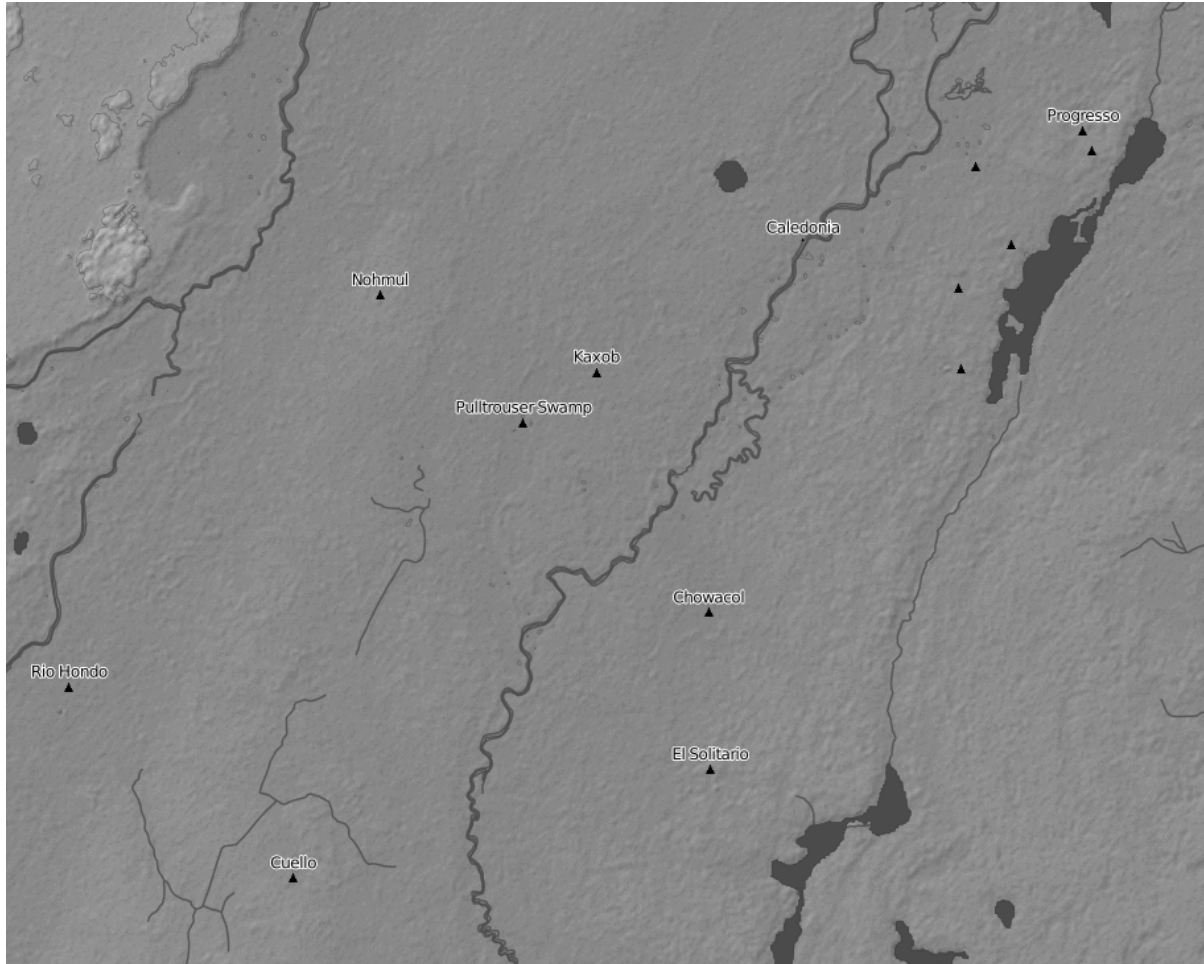


Figure 2.2: Topographic Map Showing Location of K'axob (adapted from www.mayamap.org)

of the Peten region only receiving about 70 to 90 inches a year with a steady decrease of these numbers as one moves north to Yucatan (Coe and Houston 2015:17). In bad years there may be severe droughts, though in the far south of the Peten and Belize heavy precipitation is found (Coe and Houston 2015:17). Lakes are rare in the lowlands, and in some places in the Yucatan where ground water is scarce, cenotes supply the only source of water (Coe and Houston 2015:17). The geography of Belize, specifically, is characterized by a series of

limestone ridges divided by fault troughs containing rivers, swamps, and lagoons, and decreasing in elevation and definition from west to east (Hammond 1977:49) (Figure 2.2).

Forests are comprised of multi-story canopies including hundreds of tree species (Sharer and Traxler 2006:42). The uppermost canopy is dominated by the giant ceiba, mahogany, sapodilla, Spanish cedar, American fig and many others, while the secondary and lower canopy consists mostly of the breadnut tree, rubber, allspice, and avocado trees as well as palms (Sharer and Traxler 2006:42). There is a rich fauna in the Maya lowlands, including deer and peccary, especially in the Yucatan (Coe and Houston 2015:18). Spider monkeys and howler monkeys as well as large birds such as turkeys and curassow provided sources of food for the Maya (Coe and Houston 2015:18-19). Jaguars and tapir were hunted for their pelts and hides as well as the meat the animals could provide (Coe and Houston 2015:19).

The soils of the Peten and Puuc ranges can be deep and fertile, but these are restricted to a mosaic-pattern of various sized areas (Coe and Houston 2015:19). Because of the random distribution of fertile soil, the main farming practice is a shifting slash-and-burn system that allows the forest and agricultural fields to regenerate between uses (Coe and Houston 2015:19). Other intensive agricultural methods used included terracing, raised fields, and irrigation (Sharer and Traxler 2006:81). In Pulltrouser Swamp, raised fields were a popular agricultural system that utilized the rich soil and constant water source (Sharer and Traxler 2006:81).

Because limestone was so abundant in the lowlands, it had many uses for the Maya. Construction materials made of limestone occurred almost everywhere because it was easily quarried and worked with (Coe and Houston 2015:22). In these limestone beds, chert and

flint deposits were sometimes found and were used to make tools such as axes which were essential to slash-and-burn agriculture (Coe and Houston 2015:22).

Settlement

There was much variety in the types of buildings that occurred during the Classic Maya period. Some Maya centers were massive architectural feats, such as Tikal with its many pyramids and large structures, while others, like K'axob, were minor centers with modest buildings and few pyramid structures. The large epicenters possessed impressive stone architecture and monuments that fascinated the early explorers (Demarest 2004:92). The structures were plastered with thick stucco, which formed gleaming white courtyards and towering temples with ornate sculptures (Demarest 2004:93). Homes for the elite took the form of “palace” structures and were originally placed in simple rectangular groupings around courtyards or plazas, but as the elite grew the stone dwellings agglomerated into “acropolis” or irregular multilevel complexes (Demarest 2004:93). Typical, non-elite Maya families lived in humble wattle and daub structures usually set upon low platforms (Demarest 2004:113). It was not uncommon for several houses of closely related families to be situated together around an open courtyard forming a “plaza group” (Demarest 2004:114). By the Late Classic most of the Maya area had been settled, including thousands of rural communities in addition to the larger towns and major centers, like Tikal (Sharer and Traxler 2006:684).

Social, Economic, and Political Structures

Maya Social Systems

In the Classic Maya lowlands, archaeologists are increasingly looking for material evidence, such as written accounts and other telling signs, of lineage systems like the

evidence found in the highlands (McAnany 2013:26). Architectural groups with freestanding architecture, multiple courtyards, and bench features have been interpreted as the compounds of elite lineages, and are referred to as “patriclan buildings” (McAnany 2013:26; Haviland 1968:109). Ancestors also played important roles in the formation of lineal descent groups (McAnany 2013:113). The ancestors were invoked for many reasons, including to legitimize, sanctify, and bring order to everyday life as well as maintain the social cohesion within descent groups (McAnany 2013:113). The Classic Maya had complex social structures that were more of a continuum of wealth and power differences than sharp divisions (Demarest 2004:116; Sharer and Traxler 2006:86). However, most Maya fell into either elite or nonelite, with stratification based upon differential access to basic resources, often determined by inheritance, marriage, and rank (Sharer and Traxler 2006:690). Skeletal analysis has demonstrated that in some prehistoric Maya populations, individuals experienced relatively high levels of several health problems that could indicate differential access to resources between elites and nonelites (Danforth 1994:209). Studies of juvenile growth at Tikal support this by demonstrating that non-elite males experienced a statistically significant reduction in stature as opposed to elite males between the Early and Late Classic (Danforth 1994:209).

Maya Economic Systems

The ancient Maya economy consisted of the prestige or ritual economy and the subsistence economy (McKillop 2004:114). The prestige economy included the production, distribution, and use of goods and resources for the royal Maya and other elites, while the subsistence economy refers to goods and resources for basic daily use by all classes of Maya society (McKillop 2004:114). Prestige goods are generally found in burial contexts as

offerings or in caches, and subsistence items are often found in garbage deposits where they were discarded from household use (McKillop 2004:114).

As time went on, systems of Maya production and distribution, including trade, became more complex (McKillop 2004:117). Long distance trade would have stimulated Maya economies if they could provide a valuable good to others who could otherwise not get it. The lowland Maya needed to establish trade routes with other communities in the highlands and elsewhere in order to obtain many necessary materials for survival, but some sites would have also been able to provide goods that others wanted. Salt and cacao would have boosted the economies of the lowland sites that could produce these items. In Belize and other coastal sites, economies were boosted by the ability to trade sea salt, as well as other maritime resources (Demarest 2004:152). Cacao trees also grew in areas of the Maya lowlands and would have been extensively traded to the Aztecs and other groups who prized chocolate (Demarest 2004:153). Though limestone was abundant in the lowlands, other types of harder stones such as obsidian were needed to make manos and metates for grinding dough and knives and dart points for hunting (Coe and Houston 2015:22-23). Trade routes would have facilitated other needs for Maya elites as well. Green jade, quetzal feathers, and marine shells were traded for using the river systems to distribute goods (Coe and Houston 2015:23). Trade of exotic, status-reinforcing goods was one aspect of the Maya economic sphere that was almost certainly controlled by rulers and elites (Demarest 2004:160).

Maya Political Systems

The general consensus is that complex society existed by the Late Preclassic in the southern and at least part of the northern lowlands (Hammond 1977:63). The evidence comes from many of the larger Maya sites such as Tikal and Uaxactún where monumental

architecture implies the existence of large labor forces that had allegiance to the ceremonial centers, special artisans to create these structures, and some sort of administrative organization to carry out the planning and building of community structures (Hammond 1977:63). In the northern lowlands, extremely variable patterns of political structure existed reflecting local ecosystems and specialized resources (Demarest 2004:235). Many studies of Belize have revealed the presence of community specialization as well as small-scale religious and political patterns that existed below the level of the great centers and their rulers (Demarest 2004:235).

Early social and political distinctions were subtle, but as time progressed, these distinctions grew dividing the Maya into a small ruling elite who monopolized wealth and power (Sharer and Traxler 2006:86). Classic period lowlands were comprised of a system of independent states, ruled by kings and queens (Sharer and Traxler 2006:295). At the major centers, kings and queens of royal dynasties ruled, supported by smaller regional center and subsistence farmers who provided labor and food (McKillop 2004:8). Rulers combined supreme political authority with quasi-divine status and through hereditary kingship, effectively cut ties with the rest of the population (McKillop 2004:178). The power of the rulers came from their ability to manage critical resources such as important obsidian and salt, or even water in areas removed from dependable water sources (Sharer and Traxler 2006:89).

In the lowlands, major centers were generally spread equidistantly throughout the region, suggesting that they were, initially, political equals, independent of one another (Sharer and Traxler 2006:319). Beginning in the early Classic, lowland centers like Tikal, Caracol, and Calakmul asserted their independence by erecting monuments (Sharer and

Traxler 2006:317). However it appears that at one point, one of the capitals, Tikal, succeeded in asserting its power over nearby settlements and centers (Sharer and Traxler 2006:319). Something changed politically and now instead of coexisting with nearby major centers Tikal and its king took over, ruling a much larger area. Somehow Tikal defeated its local competition, a fact that is supported by the nearby sites suddenly ceasing to erect monuments shortly after falling to Tikal (Sharer and Traxler 2006:319). Tikal would later suffer a similar fate at the hands of rival Calakmul with help from their allies at Caracol (Sharer and Traxler 2006:371). K'axob is not very close to any of these major centers and thus was likely only minimally affected by the rise and fall of sites like Tikal and Calakmul.

Burial Practices and Mortuary Patterns

Burial customs reflect the range of social differentiation and ritual elaboration and mortuary remains allow us to detect significant social transformations (McAnany, Storey, and Lockard 1999:129). In the Maya area burial practices can vary based on location. However there are general patterns to all Maya mortuary practices and in the lowlands many sites share similar burial patterns. The most common burial pattern appears to be single interments, although more and more multiple interments are being uncovered, suggesting that this practice was almost as common as single interments (Chase and Chase 1996:61). Multiple interments also correspond to secondary burials which are defined as both primary burials that were exhumed and then reinterred and defleshed skeletal elements that were selectively retained above ground, usually in a shrine or bundle, to be interred at a later date (McAnany, Storey, and Lockard 1999:131). Burials could also be re-entered multiple times to add more individuals. The earliest appearance of sequential multiple burials in the Maya area seem to occur during the Late Preclassic period, likely reflecting the increasing social

complexity of Maya society at this time (Healy et al. 1998:271). Individuals were sometimes removed from their tombs for various reasons that often included being reinterred somewhere else. Evidence of this removal appears at various sites, such as Caracol where an empty tomb was found with a cache of pottery vessels and the fragment of a human femur, indicating that a body had been there at one time but had likely been moved to another unknown location (Chase and Chase 1996:67).

There were also many ways of interring individuals. The deceased could be placed in a seated position, tightly flexed, a fetal position often associated with bundles, or a supine or extended position (Pereira 2013:454). There have been many images found associated with these different burial positions. Mesoamerican codices along with Classic and Postclassic Maya pottery feature extended, seated, flexed, and bundled corpses (McAnany, Storey, and Lockard 1999:132). The most complex form of mortuary ritual, involves the defleshing of the bones and/or the removal of organs and tissues (McAnany, Storey, and Lockard 1999:132). Though this has been documented in the Maya area through ethnographic sources, it is difficult to interpret archaeologically (McAnany, Storey, and Lockard 1999:132). The markings that one would associate with defleshing are very similar to those made naturally by animals interacting with the bones, and more often than not due to the humid environment, the bones recovered are in such poor condition that determining the presence or cause of markings on the bones is impossible.

Burials in the Maya area are found in a variety of interment types, including but not limited to tombs, simple graves, cists, crypts, and inclusion in refuse (Healy 1990:255; Chase and Chase 1996:62). Burial practices and the rituals that accompany them were of great importance in the Maya area. There were many places and ways in which to inter the

deceased and these varied between the classes. While elites were likely to be cremated, though this was uncommon in the Classic period, or buried in large ceremonial temples, middle and lower status families interred their ancestors beneath residential structures.

In the middle and lower classes, the family dead were usually buried under floors of the house platforms or in nearby shrines, while elite and royal families buried their loved ones in shrines in the form of enormous temple structures or pyramids (Demarest 2004:116). The function of Maya pyramids as a funerary monument harks back to Preclassic times, and continued on into the Classic and Late Classic periods (Coe 2011:75). In later periods, great nobles were often cremated with funerary temples placed above their remains rather than physically interred beneath the mausoleums as they had been in the Classic (Coe and Houston 2015:234). Temples housed the tombs and served as the foci of rituals and sacrifices to honor and propitiate the dead (Demarest 2004:96). Repeated and prolonged use of tombs by Maya elite, possibly as family crypts, was likely a common and widespread practice (Healy et al. 1998:261). These tombs would have provided a place for the general populace to gather and “worship” past rulers and to acknowledge the lineage of these rulers while also feeling a sense of kinship to them. Due to the size of K’axob and the findings from the Preclassic, it is unlikely that there will be any such elite burials found in the Classic period. The majority of the burials at K’axob are those of the general population and as such are not located in elaborate shrines or tombs.

When looking at accounts of burials in the Maya area there are interesting biases present in the data. Overwhelmingly in burials where sex is determinable, men far outnumber women and children. Also, elite burials are found more often than burials of non-elites. It is likely that fewer non-elite burials have been uncovered because they were buried off site or

not at all, and since most archaeological work in the Maya area in general has been on large, impressive, elite structures rather than the buildings and homes of the general population it is possible that more of the non-elite burials are still yet to be found. However, at K'axob the archaeological excavations have been on non-elite structures. It is also possible that not everyone was buried. Not all deceased individuals became ancestors, and the role of ancestor was reserved for leaders and prominent lineage members (McAnany 2013:60). This could also be a reason why more men have been recovered than women. Because the Maya were a patrilineal society, men would have likely been chosen as ancestors more often than women (Gillespie 2000:473). There is also a discrepancy because not all remains can be sexed or aged. Poor preservation as well as the inclusion of cremated remains means that not all individuals are able to be observed for age and sex. This could mean that equal numbers of men, women, and children were buried but since the remains were poorly preserved we are only able to see a fraction of the population demographics.

Cremations

Cremation, as mentioned briefly above, was another option available to individuals when their loved ones died. Cremation was reported by the early Spanish invaders and has been described as mortuary treatment for the elite (Weiss-Krejci 2006:76). In terms of the Maya, cremation is largely considered to be a Postclassic tradition though evidence for earlier occurrences does exist (Weiss-Krejci 2006:76). One example of a possible Terminal Classic cremation comes from Chichén Itzá, while others have been found at Dos Pilas and Dzibilchaltun (Weiss-Krejci 2006:76). Some cremations are found in situ, where the burning took place, while others are deposited in containers such as jars and vases (Weiss-Krejci 2006:76). This type of mortuary practice was not common at K'axob and has yet to be found

at this site. It is likely that since cremation was usually reserved for elites that it would not have occurred at K'axob since it was only a minor center at its peak. It is also possible that this practice simply did not exist yet.

Child Burials

Burials of children are not so different than those of adults. They may have been buried with different objects or interred with adults, but the burial process was similar. The mortuary treatment of children likely reflects the adult valuation of the child as well as communal ideas regarding the proper way to commemorate a child's death and to prepare him or her for the afterlife (Storey and McAnany 2006:53). This process is similar to adults in that the mortuary practices for deceased individuals were based upon their importance as ancestors to their families and the community. Though the sample of child interments is quite small when compared to adults, there are still a fair number of interments to gain information about how children were treated postmortem. For children, the most common burial pattern was a multiple interment. At K'axob, during the Preclassic, only 35 percent of child burials were in single interments, while 54 percent were part of multiple interments and were usually part of a secondary interment (Storey and McAnany 2006:60). Due to the strong belief in ancestors in the Maya area, the reason for the secondary, multiple interments was likely to reunite the family (Storey and McAnany 2006:61). It is also noted at Preclassic K'axob and other sites that child burials were often inside structures rather than in public places, likely corresponding to the focus of the death of a child being kept within the immediate family and close kin (Storey and McAnany 2006:61). Keeping the child close to the family after death through the burial process was likely a way to protect the child in the afterlife and make sure that the child would be with the other ancestors of the family. Parental sentiment for

deceased children can be revealed through the selection of durable items placed with the child in the burial (McAnany, Storey, and Lockard 1999:136). The objects interred with children were often more personal and related to the child than anything that would be found with an adult. Shell, a valuable item in the Maya area, was often found in the burials of children, signifying the parent's sentiment toward the loss of the child (Storey and McAnany 2006:63). It is also known in Belize, that marine shell objects were regularly interred in elite burials, which suggests that this material was indicative of elevated social status (Spenard, Wagner, and Powis 2013:151). This could indicate that children who died before their time were given ascribed status and buried with accoutrements to match. With an important influence on the Maya culture of ancestors and ancestor worship, it is not surprising that many children were buried in multiple interments beneath or near residential structures to keep them close to the family and provide ancestral protection for the deceased child in the afterlife. The artifacts interred with them were unlike those found with adults, because they likely symbolized the parent's love of the child and grief of their death rather than representing their status within the community, as is the case with adults.

Ritual and Cosmology

For the Ancient Maya, cosmology and ritual were deeply entrenched in all aspects of life, including political and territorial associations (Rice 2004:19). The Maya believed that there had been numerous episodes of cosmic creation and that the cosmos had three vertical domains, the heavens, the natural earthly world, and the underworld (Rice 2004:19). Each domain was made up of multiple levels, thirteen for the heavens and nine for the underworld, and each of these levels was divided horizontally into four parts (Rice 2004:19-20). This

quadripartite motif was roughly based on the four cardinal directions which were connected to the cosmic levels and was present throughout Mesoamerica (Rice 2004:20).

Metaphors for death were abundant in Maya culture, with directionality playing a large role in the ritual of burial as it did with the cosmos. The direction of East corresponded with birth, and was associated with sunrise and the color red, while the direction of West corresponded with death, sunset, and the color black (Coggins 1988:71; Rice 2004:20). The South direction corresponded with the dead, and was associated with “down”, the Sun’s “left”, the underworld, the number 9, night or the “death of the sun”, and the color yellow, while North was associated with “up”, the Sun God’s “right” side, the heavens, the number 13, the place of ancestors, and the color white (Coggins 1988:71; Rice 2004:20). A fifth “direction” was center, an axis mundi which extended through all levels, seen as a “World Tree” growing from the center of the earth and reaching up into the heavens (Rice 2004:20). The earthly domain often mimicked the four-part structure and buildings may have been arranged in the four directions around plazas (Rice 2004:21). In the southern Maya lowlands, it is eastern buildings that have been identified as favored locations for burials (Chase and Chase 1996:62). This choice of East for burials can correspond to the life cycle that many Maya believed culminated just before rebirth. It would be understandable that individuals would bury their dead in a direction that symbolized their coming rebirth. At the Late Classic site of Caracol the association between death-related ritual and eastern consciousness is particularly well developed, where eastern buildings frequently contain more than one formal interment (Chase and Chase 1996:62). Directionality is an important aspect of how individuals are laid out and interred in graves. At the Classic site of Río Bec, 17 of the 18 burials were oriented in an east and west direction (Pereira 2013:451). The

placing of individuals in an east and west orientation directly corresponds to the cyclical view of death and rebirth that the Maya believed in.

Ancestor Veneration

The use of burial spaces to honor the dead is believed to be central to the Maya culture, as well as the belief that the dead still played a role in the lives of the living, therefore making sense to keep the deceased physically close. The placement of individuals in previously occupied tombs may have been to display their connections to particular lineages even after death (Healy et al. 1998:271). The Maya belief in the power of deceased ancestors and the theory of segmentary lineage systems in the Maya highlands are strong supporters of multiple burials as connected through lineage (McAnany 2013:24). The Maya practice of burying important family members within the residence has been interpreted as evidence that remembered ties to actual ancestors was a critical means for restricting descent group membership, correlated with the distribution of economic rights, and political organization, and hence the Maya must have been organized into patrilineal descent groups, though the evidence to support this is ambiguous (Gillespie 2000:473). Ancestor veneration played an important role in choosing who would be considered an ancestor and burial placement. Ancestors were used by the living to remain in contact with the supernatural and spiritual world. Much can be learned from burials about the beliefs of life and death in cultures and those of the Maya are no exception.

The prehistoric Maya were ritualistic and held many beliefs about their world and the cosmos. At the core of Maya religion was a general worldview that stressed ancestor worship (Demarest 2004:176). Ancestor veneration is even depicted in iconography and hieroglyphics from the Maya area. Texts and iconography of monuments from sites all over the Maya area,

like the ones found at Piedras Negras, often explicitly link a central protagonist with an apical and often deified ancestral figure, who may be linked to a founding lineage (McAnany 2013:39). An important ritual that occurred with Maya burials was ancestor veneration or ancestor worship. This practice was not limited to the Maya, but was a very important aspect of their culture. The principles of ancestor worship and their vision of sacred geography and cosmology permeated all levels of Maya society (Demarest 2004:96). Ancestors were seen as the mediators between the forces of the supernatural and their living descendants (Demarest 2004:176). “Ancestor veneration existed in a variety of social and physical settings: among both the non-elite and elite sectors of society and in both domestic ritual and public ritual contexts” (McAnany 2013:53). Ancestor veneration can be seen through multiple burials that include individuals of various ages and sexes. The most commonly seen examples are those of adults buried with children. This manifestation of ancestor veneration was most likely to keep the family together and to make sure that the deceased children would be reunited with family after death. For the non-elite, these burials would have occurred in the domestic space, usually under residential buildings or close nearby. The burial of great rulers in large temples was ancestor veneration on a larger scale (Demarest 2004:176). The dead kings were celebrated as not only ancestors of the ruling lineage, but as a collective ancestor of the entire community, a practice that united beliefs and rituals at all levels of Maya society (Demarest 2004:176-77). The most elaborate funerary rites performed for kings were intended to transform the ruler into supernatural beings (Sharer and Traxler 2006:733). Archaeological data has shown that both elite males and females were given equally elaborate funeral treatment (Gillespie 2000:473). These practices united the people and provided a sense of universal kinship within the culture. This practice of course was done on a much more public

scale than that of the non-elite burials in order to provide an ease of access to worship the dead elites.

Women played an important role in attending to the deceased ancestors in the domestic setting, offering the deceased gifts of food and drink and burning incense for them in the home (McAnany 2013:33). These rituals show the great reverence the Maya had for their ancestors and the care they took to honor them. Ancestor worship probably played a huge role in the placement of deceased ancestors in burials underneath the home. It is clear that mortuary ritual coexisted with the daily routine of the Maya, and the odor of decay did not deter continued habitation of homes (McAnany, Storey, and Lockard 1999:131).

However, data from Preclassic and Classic K'axob suggests that the individuals living in the home may not have inhabited the home at the time of the interment as burial often coincided with structural renovation (McAnany, Storey, and Lockard 1999:131). The addition of ancestor interments to the home may have been seen as a way to breathe life and soul into the house as well as safeguard it and its residents (Vogt 1993:58). It is certainly possible that the Maya wanted to keep their ancestors close by in order to ensure their connection to the otherworld and the supernatural. Their rituals and beliefs encouraged the placement of relatives in or near the home to keep the living safe and to spiritually protect the family.

Ethnographic sources from the Maya highlands and lowlands document the continued importance of rituals and places relating to ancestor veneration in Maya society (McAnany 2013:29). These contemporary rituals differ from those recorded archaeologically in two main ways, first, they seldom contain osteological or carbonized remains of ancestors, rather ancestors are buried in cemeteries at the edges of towns, and second, ancestors are more frequently invoked in a generalized fashion rather than by reference to specific individuals

(McAnany 2013:30). These differences are likely linked to the “Christianization” of the Maya when contact with the Spaniards occurred. The Classic Maya would have been able to use osteological remains in their rituals because they had not yet been forced to adapt certain Christian practices such as burying the dead in cemeteries rather than in domestic settings.

Burial Accoutrements

Another ritual that was important to Maya burial practices was the offering of items to the deceased. Offerings were an important aspect of the burial process often to pay tribute to the dead and to show their status. The objects found in burials can provide information on the importance of the individual or what the individual did in life based on the amount or quality of these items. They can also show which objects or materials a community or culture viewed as sacred or important. In the Maya area, burials are found with a wide variety of items that mean various things. The more important the individual the rarer the goods found are along with a general excess of objects in the burial. Shell and pottery were the two most common types of grave goods. During the Classic period, Maya pottery is polychrome and occasionally contains iconography such as scenes depicting its use in ritual or feasting (McKillop 2004:244-245). Shells were carved into objects such as beads, disks, and other ornaments (McKillop 2004:262). The most common shells found are *Spondylus americanus*, *Turbinella angulata*, *Strombus gigas*, *Melongena melongena*, and *Olivella sp.* shells (McKillop 2004:261-262).

The elite dead were often buried with beautiful polychrome ceramics, stone ornaments, carved bone and shell, and elaborate jade jewelry, along with many other accoutrements (Demarest 2004:96). On the other end, average Maya families interred even the most esteemed of their ancestors with only a pot or two and many were buried with no

grave goods at all (Demarest 2004:96). This may lend support to symbolize the extreme status differences within communities among the elite and non-elite. It is possible the non-elites simply could not spare any objects from their daily lives to bury with their loved ones, and it is quite possible that the deceased non-elite were buried with perishable items that we simply cannot see in the archaeological record today.

Burial accoutrements can provide a variety of information about individuals from the Maya area. Another example of high status burial objects is from the Late Classic Maya site of Xuenkal, where two males were found interred in a residential platform (Tiesler et al. 2010:376). These men were interred with fascinating items alluding to the positions they held while they were alive. Both of the individuals were buried with artifacts indicative of military activity, specifically chert lanceolate points consistent with depictions of Classic Maya spears (Tiesler et al. 2010:376). Additionally both men wore animal canines and one of the men was interred with a trophy skull of a non-local male (Tiesler et al. 2010:376). These items along with the additional trophy head point to the conclusion that these men were highly regarded ancestors of their family and were also likely involved in successful military endeavors during their lives.

These patterns of mortuary practices throughout the Maya area discussed above provide context for this study, and supply comparisons for the Classic period burials at K'axob. Because of the general trends observed in Maya mortuary practices, such as extended/supine burials, single primary interments in residential structures, instances of ancestor veneration, etc., hypotheses can be formed about the burial practices at newly excavated sites like K'axob and sites that have yet to be excavated. In Chapter 3, the

mortuary patterns of the burials of Preclassic K'axob will be discussed and they appear to include the same general patterns of the rest of the lowland Maya area.

Chapter 3: The Maya Site of K'axob

History and Chronology

Scholars have been studying the Maya for many years, but information about the area in which this research is focused on, K'axob, Belize, comes from excavations beginning in the 1990's (McAnany and Varela 1999:149). The settlement of K'axob was founded around 600 B.C. during the Middle Preclassic (McAnany 1997:1). Occupation continued at this lowland Maya site until about A.D. 900 (K'axob 2004). Between these two dates, K'axob went from being a thriving village to a bustling minor center in the lowland Maya landscape. Though the political geography of the lowland Belize area is unknown, it appears that during the latter half of the Late Preclassic, Lamanai, a relatively nearby Maya site, emerged at the top of the local hierarchy, while K'axob occupied a lower tier with several other villages (McAnany 2004a:12).

K'axob is located in Northern Belize in the wetland zone near the Belize River Valley (Figure 3.1). It is on a patch of high ground between the southern portion of Pulltrouser Swamp and the New River of Belize (McAnany and Varela 1999:147). The land around the site is rich in biotic resources but is poor in hard stone and mineralogical resources (McAnany 2004b:7). Expansion of the K'axob site took off during the Late Preclassic and occurred mostly during the Classic period (McAnany, Storey, and Lockard 1999:131).

In order to create a chronology for K'axob (Figure 3.2), pottery from the site was classified by type: variety analysis and grouped into ceramic complexes concordant with larger regional ceramic spheres (McAnany and Varela 1999:150). The complexes relevant to this discussion of K'axob are Chaakk'ax (early and late facet) of the Middle Preclassic (800-400 B.C.), K'atabche'kax (early, late, and terminal facet) of the Late Preclassic (400



Figure 3.1: Map Depicting the Maya Area, Featuring K'axob (adapted from McAnany 2004b:2)

TIME	MAJOR PERIODS	K'axob
1200	<div>LATE</div> <div>-----</div> <div>EARLY</div> <div>POSTCLASSIC</div>	Kimilk'ax
1100		
1000		
900		
800		
700	<div>TERMINAL</div> <div>-----</div>	A.D. 800-900
600	<div>LATE</div> <div>-----</div>	Witsk'ax
500		A.D. 600-800
400	<div>EARLY</div> <div>CLASSIC</div>	Nohalk'ax
300		
200		
100		
A.D. B.C. 100		
200	<div>LATE</div> <div>FORMATIVE</div>	<div>Late Facet</div> <div>-----</div>
300		<div>Early Facet</div>
400		
500		<div>Late Facet</div> <div>-----</div>
600		<div>-----</div> <div>Chaakk'ax</div> <div>Early Facet</div>
700	<div>MIDDLE</div> <div>FORMATIVE</div>	
800		
900		
1000		
1100		<div>EARLY</div> <div>FORMATIVE</div>
1200		

Figure 3.2: K'axob Chronology (adapted from McAnany 2004a:16 and Varela 1997:206)

B.C.-A.D. 150/250), Nohalk'ax (early and late facet) of the Early Classic (A.D. 250-600), and Witsk'ax (early, middle, and late facet) of the Late and Terminal Classic (A.D. 600-900) (McAnany and Varela 1999:150; Varela 1997:206). In order to pin down these dates, twenty-five accelerated mass-spectrometer dates were used to provide support for the Preclassic complexes (McAnany 2004a:15). Nohalk'ax is not well anchored chronometrically because too few pottery sherds have been scientifically analyzed to form an accurate depiction (McAnany 2004a:15). This is why the dates of the early and late facets are not well defined.

Environment, Resources, Lineages, and Architectural Growth

The site of K'axob is situated on an area of high ground between Pulltrouser Swamp and the New River in Belize (McAnany and Varela 1999:147). The New River has a gentle current with no rapids and maintains a high level through the dry season, which provides a natural corridor of transportation and allowed the residents of K'axob easy access to Caribbean shell and mineral resources available around the New River Lagoon (McAnany 2004a:12). There are also many additional Maya settlements on the New River, which would have provided trading partners for K'axob (McAnany 2004a:12). It is likely that early residents were attracted to the diversified resources of this location, which included protein and floral resources from the nearby wetlands and riparian ecosystems as well as the drought resistant soils found at K'axob, a tropical variant of the rich mollisols called Pembroke Suite (McAnany and Varela 1999:147). This can be seen through the abundance of aquatic faunal remains found in Middle Preclassic deposits (McAnany and Varela 1999:147). In these deposits, aquatic species such as fish, turtle, and mollusk are particularly well represented, and studies of macrobotanical remains have found orchard species of cacao and avocado, as well as maize in early Chaakk'ax levels (McAnany and Varela 1999:157).

At K'axob, maize appears to be a major crop staple, however data also shows that the inhabitants of K'axob also harvested the wetlands, gathering small fishes, turtles, and freshwater gastropods (McAnany 2004b:8). The inhabitants of K'axob utilized Pulltrouser Swamp and its rich soils to its full potential. This can be seen through the two hundred and twenty raised fields that fan off of the forty-nine residential mound settlements along the western shoreline of the swamp (Henderson 2003:471). At K'axob and other communities, farmers intensified agrarian production by intensively maintaining fields through weeding and hoeing, constructing raised and drained field plots, and by forming larger households capable of supplying a larger workforce (Henderson 2003:472).

Though the area provided rich food resources, the landscape was relatively limited in terms of other necessary resources. The local profile was extremely limited in geological resources (McAnany 2004a:11). The soft sascab or marl was suitable for earthen platforms and packed floor surfaces, but was a poor resource for building blocks for stone walls and vaulted roofs (McAnany 2004a:11). The lack of hard stone for construction was matched with equally inadequate resources for the creation of manos and metates, and durable stone to make chipped-stone tools (McAnany 2004a:11). Deciduous hard woods would have likely been the toughest material available locally to the inhabitants of K'axob (McAnany 2004a:11).

Due to the poor quantity of hard stone and mineralogical resources, trade networks were of vital importance and have been demonstrated for the Classic period (McAnany 2004b:8). The founders of K'axob would have been actively involved in trade networks through which hard stone and marine shells, among other products were acquired (McAnany 2004a:11-12). Through the archaeological record, it appears that eventually these trade

networks collapsed and the residents of K'axob were forced to learn to live and thrive upon the locally available resources (McAnany 2004a:12). The inhabitants of K'axob were also fine craftsmen and artisans who created shell beads and pottery among many other items. Abundant remains of cut and drilled shell indicate active production of both local and imported shell materials and the pottery found indicates that the craftsmen were technologically proficient and focused on rich details (McAnany and Varela 1999:157).

Social structures and lineage systems can be difficult to determine archaeologically but artwork, carvings, and burial patterns can give some direction as to the kinships systems that were in place at K'axob. Though there are no stelae or carved monuments at K'axob to signify lineage systems like those found at other Maya sites, there are archaeological contexts that give clues to potential kinship links. "Burial patterns, architectural changes, and intensification of land-use practices together suggest that by the end of the Late [Preclassic] lineage groups organized around ancestor veneration were well established" (McAnany 2013:115). An example of this is a Preclassic ancestor shrine found in Operation 1 (McAnany 2013:55). Here a burial trench was excavated and from the condition of the collar lining of the trench it was concluded that the location had been sealed and reopened several times and secondary burial interments placed inside (McAnany 2013:57). The ancestors interred within were buried with a formidable array of grave goods, including jewelry such as bivalve amulets, shell tinklers, carved bone, jade beads, and several ceramic vessels (McAnany 2013:57). Two of these vessels contained the quadripartite cross motif, a motif thought to hold ritual significance (McAnany 2013:57). At the end of the Preclassic, this shrine complex was buried and two dedicatory caches were deposited into the fill (McAnany 2013:57). By the latter part of the Late Preclassic, the creation of ancestors was an active

social practice at K'axob and upon death the remains of certain individuals were enshrined (McAnany 2013:114).

During the initial settlement of K'axob, domestic facilities such as sherded-lined pits and firepits were dug into the paleosol, and postholes dug into the paleosol suggest that initial structures had simple, earthen-floors (McAnany and Varela 1999:154). With movement into the K'atabche'kax complex, profound transformations began to occur (McAnany and Varela 1999:158). As the K'axob population expanded, many residential units began to take on multidwelling basal platform characteristics (McAnany and Varela 1999:162). It is at the end of the Preclassic (K'atabche'kax) and beginning of the Classic period (Nohalk'ax) when monumental pyramid construction at K'axob seems to have started, but it is likely that the inhabitants of K'axob during the Preclassic were assisting neighboring communities with their monumental building endeavors (McAnany 2004b:6). During the Preclassic at K'axob few elite residences or palaces have been recorded indicating a shift to stricter status distinctions occurring during the Classic period when more elite architecture is found (McAnany 2004b:6). The initiation of the building of elite architecture such as large platform constructions during the Classic period supports this (McAnany 2004b:6). The settlement of K'axob is composed of over 100 residential platforms and is structured around two focal pyramid complexes, the northern plaza (A) and the southern plaza (B) (McAnany and Varela 1999:147). Plaza A includes a 13-foot tall pyramid constructed during the Late Classic, while Plaza B is ringed by four pyramidal structures and a number of low platforms (McAnany and Varela 1999:147-148).

Preclassic Burial Practices

The analysis of mortuary practices and skeletal remains at K'axob is recent and relatively little work has been done on the Classic period burials at K'axob. However, there is quite a bit of information on the burials recovered from the Preclassic, and from these, hypotheses can be made about trends and patterns that may appear in the Classic prior to its analysis. Similar to the prevailing burial patterns of the Middle Preclassic, the majority of burials at K'axob during this time were single, primary interments of individuals placed in an extended position (McAnany and Varela 1999:154). However, three types of primary interments are seen, extended either supine or on the right or left side often with the lower legs crossed, flexed on either side, and seated with legs crossed and arms resting on the knees (McAnany, Storey, and Lockard 1999:133). These primary interments make up about 60 percent of the total burials while the rest are attributed as secondary and indeterminate cases (McAnany, Storey, and Lockard 1999:133). The majority of burials have been excavated from underneath the floors of domestic structures or from within construction fill, often as simple, unlined pits, which were backfilled after the interment (McAnany, Storey, and Lockard 1999:130). It is suspected that lower-status individuals were buried away from the residence yet no off-platform burials have been found, suggesting that many burials found outside of the residence lacked burial offerings and elaborate preparation (McAnany, Storey, and Lockard 1999:130). The individuals with suspected higher status were buried under subfloors, which increased their direct physical association with the on-going life and vitality of the house (McAnany, Storey, and Lockard 1999:130). This points to the possibility of ancestor veneration, where selected important family members were chosen to continue to

“watch over” the remaining living members of the household and provide cosmological links.

Because individuals were buried under domestic structures, it is clear that mortuary ritual coexisted with daily routines (McAnany, Storey, and Lockard 1999:131). Data has suggested that domestic interments often coincided with structural renovations and were possibly seen as a way to metaphorically breathe life into the house (McAnany, Storey, and Lockard 1999:131). Inhabiting a house during or directly after an interment would have likely been a difficult and quite unpleasant process, so renovations would have allowed the living to avoid the issues that come about with the inevitable decomposition process.

There are signs of possible gender-based status differentiation exhibited through grave goods beginning in the Preclassic, which can be seen through two burials in particular (McAnany and Varela 1999:154-155). Burial 1-45 is an adult female who was buried with a single, small shell bead, while Burial 1-43 is an adult male who was interred with more than 2,000 small, marine-shell beads, and two ceramic bowls (McAnany and Varela 1999:155). This striking difference in burial accoutrements could be attributed to gender, though it is believed that Burial 1-43 represents a possible founder of K'axob. Throughout the Middle Preclassic and into the Late Preclassic, mortuary practices began to change. During the early facet of the K'atabche'kax complex, multiple burial interments, most commonly doubles, became established practice, though most individuals continued to be buried in a primary, extended position (McAnany and Varela 1999:158). Also during this time pottery begins to show up in burials near the heads of individuals, suggesting they were placed over the decedents head at the time of burial.

In the late facet of the K'atabche'kax complex the interment of multiple individuals within a single grave context became extremely common and a flexed or seated position was the preferred interment style (McAnany and Varela 1999:160). Extended burials shrank to comprise only 10 percent of interments while 50 percent of individuals were interred in flexed positions (McAnany, Storey, and Lockard 1999:133). These flexed and secondary burials may indicate an increase in ritual as they required more elaborate treatment of a corpse but increased the time between the death of an individual and the ritual interment of their remains (McAnany and Varela 1999:160). Some scholars believe that during this time the remains of the deceased began to take on added cosmological significance as tangible remains or icons of the past, and that their continued proximity to the living may have taken on a new significance and authority (McAnany and Varela 1999:160). Ancestor veneration has been suggested to explain this new significance and the importance placed on multiple burials that were re-entered to allow the continued placement of remains. At the end of the Preclassic, during the terminal K'atabche'kax facet, the mode of interment for focal burials changed from primary, tightly wrapped burials to secondary burial of multiple individuals in a single context (McAnany and Varela 1999:162). It is during this time that we see what is called a burial crypt at K'axob, in which ultimately nine individuals were placed into a lined trench that was opened several times to accommodate the placement of more and more individuals (McAnany and Varela 1999:162). This burial context could also represent an instance of ancestor veneration since it appear the remains of the individuals were purposely placed together following each of their deaths. The burial implies familial relations among the decedents, especially when various age combinations are involved (McAnany, Storey, and Lockard 1999:135).

Burials of Children

In some cultures, such as the Aztec Empire, children were (and sometimes still are) not seen as full members of the community until they reached a certain age because infant mortality was quite high among prehistoric populations (Ardren 2006:8). Aztec materials suggest that a child was perceived without an individual social identity at birth, but was given one at key moments in the early lifecycle (Ardren 2006:8). However, in the Maya area this did not seem to be the case. Infants and children have been recovered in mortuary contexts, indicating that they received the same treatment as that of adults after death (McAnany, Storey, and Lockard 1999:136). Some were even afforded special treatment, which can be seen through distinctive burial accoutrements that are considered to be high status items such as worked shell, pottery, and semiprecious stones (McAnany, Storey, and Lockard 1999:136). At Preclassic K'axob, 54 percent of child burials occurred as secondary interments, while only 35 percent were single interments (Storey and McAnany 2006:60). Of these secondary interments all but two occurred with other individuals (Storey and McAnany 2006:60). In some of these secondary interments, it is possible to consider that the children were seen as part of an offering to the other individual, who was likely a family member (Storey and McAnany 2006:61). When a child died, they may have been interred with their family members as a symbolic reunion of the family, likely an important mortuary ritual (Storey and McAnany 2006:61). There are four main patterns of mortuary treatment among the children of Preclassic K'axob, first, infants are rarely found with offerings (only one in eight included pottery sherds), second, neonates are the only children likely to be buried with their mothers, third, toddlers were buried in simultaneous interments with adults, and fourth, all older children and adolescents were distinguished with both offerings and termination

rituals indicating mortuary involvement became more elaborate with age at death (Storey and McAnany 2006:68-69).

Classic Period Burials

This research attempts to provide a more thorough mortuary analysis of the Classic period burials at K'axob, but some preliminary determinations have been made based on the Classic excavations themselves. The mortuary interments from the Classic period appear to show considerable changes from the Preclassic in four aspects: burial position, number of interments, incidence of secondary interments, and types of associated burial goods (McAnany, Storey, and Lockard 1999:129). These changes are thought to be accommodated by a reference to ancestors and lineage depth and are marked materially by increasingly elaborate mortuary ritual (McAnany, Storey, and Lockard 1999:129). The new practices actively constructed kinship links between the newly deceased and their descendants (McAnany, Storey, and Lockard 1999:129-130). The burial pits themselves are profoundly different from the Preclassic in that they are larger and generally stone-lined or at least stone capped and often contain just one individual (McAnany and Varela 1999:164).

Grave Goods: Shells, Pottery, and Other Items

At K'axob the two main types of burial accoutrements recovered are pottery and shell. These are what have generally been found in burials with grave goods. There are many different types of pottery and shell artifacts represented at K'axob, some indicating an individual as a member of the general population, while other types indicate high status or importance within the community. A few other types of grave goods have been found, but they are in such small quantities that they are believed to represent high status items. These include greenstone, jadeite, and carved bone to name a few that will be discussed in a

subsequent section. At the site of K'axob during the Preclassic, individuals were found with bivalve amulets, shell "tinklers", carved bone, jade beads, and several ceramic vessels (McAnany 2013:57). Some of these items allude to high status burials, as large amounts of jewelry and accoutrements would have only been afforded by elites.

Shell Working and Social Identity

Among the ancient Maya, shell was characterized as a semiprecious resource, with links cosmologically to water, life, and even fertility (McAnany, Storey, and Lockard 1999:136). This cosmological association may stem from the fact that both salt and freshwater mollusks come from the fertile primordium or underworld (McAnany, Storey, and Lockard 1999:136). Because of these symbolic connections, shells could be used to portray images of deified persons or gods and were also associated with specific ceremonies and temples, and were often used as grave goods in burial contexts (Aizpurúa 2004:335). The presence of shell in burials confirms that it was viewed as a precious item, and massive quantities of it can suggest high status of the individual interred with the shell or the adoration of the individual by the community or family. Certain types of worked shell, though not abundant, can also indicate high status if the object is viewed in a rare or ritual context. Children are sometimes found with shell items in burials, which indicated the parents' great lament that their beloved child had died. The inclusion of shell in burials is a strong practice that can be found throughout the Maya area, and even stretched into the South American Andes as well as into North America (McAnany, Storey, and Lockard 1999:136). Due to the ease with which shell could be cut, shaped, drilled and incised, these mollusca were a common raw material used in the production of items for personal adornment (Aizpurúa 2004:335).

Shells and shell crafting were used to create personal identities, which is something that we can attempt to understand through the placement in burial contexts (Aizpurúa 2004:350). The marking of personal identities appears to have been linked to the number of adornments with which an individual was buried, as eighty-seven percent of the shell beads found at K'axob were from burial contexts (Aizpurúa 2004:351). Children buried with beads can be interpreted as evidence of ascribed status, but may actually be more evident of parental investment in the deceased child (Aizpurúa and McAnany 1999:124). We can infer through these investments that personal identities were formed at an early age and that the social identity only grew as one reached adulthood (Aizpurúa and McAnany 1999:124). These social identities were represented both qualitative and quantitatively through shell objects. Beads are indicative of status only when grouped in lavish quantities, but items like pendants and tinklers, discussed below, appear to be linked quantitatively to social identity (Aizpurúa and McAnany 1999:124).

The worked shell found at K'axob has been classified into six type and eighteen subtype categories that define the artifacts into groups (Aizpurúa and McAnany 1999:118). The type defines the worked shell by general shape and possible function, while the subtype classifies the artifact according to its specific cultural modifications and if necessary, their size (Aizpurúa and McAnany 1999:118). The six type categories of worked shell at K'axob include beads, disks, pendants, blanks and figurines, tinklers, and other. Beads were defined as small pellets pierced through the central section for stringing, and the majority of the beads, 81 percent, were crafted from marine shell, *Strombus* spp., but a significant portion, 18 percent, were made of local, freshwater *Unionidae* spp. shell (Aizpurúa and McAnany 1999:119). A disk is a circular ornament without drilled holes and for these artifacts, the shell

Strombus spp. was preferred due to their thicker, more durable quality (Aizpurúa and McAnany 1999:119). A pendant was defined as a relatively large, more than 20 mm long, ornament pierced for suspension near the artifact's edges (Aizpurúa and McAnany 1999:119). Pendants tend to be distinctive adornments made with either marine or freshwater shells, though at K'axob it seems that *Strombus* spp. was preferred (Aizpurúa and McAnany 1999:119). A figurine or blank is a nondrilled ornament or figurine and in this category many shells have been used, such as the local *Unionidae* spp., and marine *Spondylus* spp. and *Strombus* spp. (Aizpurúa and McAnany 1999:119). Figurines could depict anthropomorphic, zoomorphic, phytomorphic, or geometric shapes (Aizpurúa 2004:337). Tinklers are bell-shaped adornments, commonly made from marine shells such as *Oliva* or *Olivella* are sometimes pierced more than once and often cut at the base to create a flat bottom (Aizpurúa and McAnany 1999:119). These artifacts are thought to have a ritual use. In some stelae from

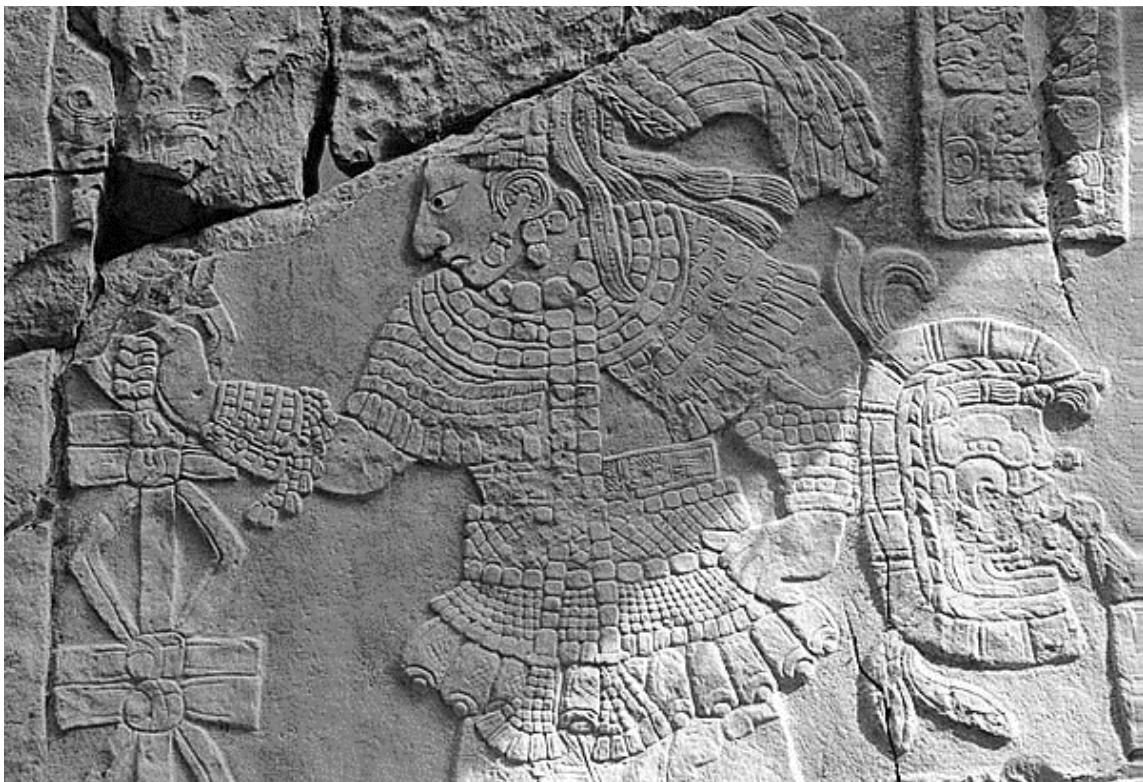


Figure 3.3: Bonampak Stela 1 Depicting Shell Tinklers (adapted from Mesoweb 2016).

Copan and Bonampak, tinklers are shown sewn on to the hems of garments of the elite and probably played an important role in producing an effective acoustical environment for ritual dance (Aizpurúa and McAnany 1999:119; Mesoweb 2016) (Figure 3.3). Finally, the worked shell classified as other includes worked marine shell of miscellaneous shapes, many of which are raised from the remnant columella (Aizpurúa and McAnany 1999:119).

There are quite a few species of shell that were utilized at K'axob, some could have been found locally, while others would have required trading connections with other communities to acquire them. In Early Chaakk'ax deposits, *Strombus* spp. marine-shell beads predominate with lesser numbers of disks and pendants, and the beads are commonly encountered in primary burials (Aizpurúa and McAnany 1999:120). The Chaakk'ax pattern of shell working continued into the Early K'atabche'kax with the continued presence of a majority of beads made from *Strombus* spp. marine shell and smaller amounts of freshwater *Unionidae* spp. shell but includes the addition of a few new species of shell being worked (Aizpurúa and McAnany 1999:121). Near the end of the Preclassic, *Strombus* and *Unionidae* bead production within burial contexts decreased and shell ornaments, commonly tinklers, crafted from a new marine shell, *Oliva*, began to rise in importance and are found in a limited number of K'axob burials (Aizpurúa and McAnany 1999:122). At K'axob, *Spondylus* shells appear to have a culturally restricted distribution and have only been found in one deposit from the Terminal K'atabche'kax, or Late Preclassic period (McAnany, Storey, and Lockard 1999:136). Freshwater shells like *Unionidae* and marine shells such as *Strombus* and *Oliva* were more generally available to the inhabitants of K'axob than *Spondylus* and are much more common in burials (McAnany, Storey, and Lockard 1999:136-137). A final type of shell that is found at K'axob is the *Pomacea* spp. shell, which during the Early and Late

facets of the K'atabche'kax complex were common in burials due to the practice of placing a "carpet" of shells around the feet and legs of an individual (McAnany, Storey, and Lockard 1999:137).

Pottery at K'axob

The other main burial accoutrement found at K'axob is pottery. Patterns of wear on vessels found in burial contexts indicate that certain types of pottery ended their use life as burial accoutrements but were not made specifically for this purpose (McAnany, Storey, and Lockard 1999:137). Their involvement in burials ranges from being placed over the head of an individual to being filled with food and drink for the afterlife to holding the remains of individuals who were placed as secondary interments (McAnany, Storey, and Lockard 1999:137). Rather than making pottery specifically for the purpose of including them in burials, the most common practice was to take pots that had already been used to their full potential and were no longer functional or those that had been broken and could not be repaired and place them with the dead.

At K'axob there are a few kiln features that have been found, namely Structure 89, a low platform built in three construction phases atop a bedrock rise (Varela et al. 2001:179). This construction indicates that at K'axob there were craftsmen making the majority of the pottery that the community was utilizing and that they were not trading items to acquire pottery. As mentioned at the beginning of this chapter, the pottery found at K'axob was analyzed and grouped into ceramic complexes concordant with larger regional spheres in order to pinpoint a chronology for the site (McAnany and Varela 1999:150). From these complexes, the pottery was sorted into more exclusive ceramic types and even smaller grouping of varieties within those types. From the Preclassic there are two complexes,

Chaakk'ax, with an early and late facet, and K'atabche'kax, with an early, late, and terminal facet (Varela 2004:171).

During the early facet of the Chaakk'ax complex the most common pottery type was the Chicago Orange vessels, which made up 71 percent of the total sherd count (McAnany and Varela 1999:157). The pottery forms from this period include bowls, dishes, and few tecomates however no jars are present in any of the deposits (McAnany and Varela 1999:157). There is by far a great deal of diversity of pottery types from the early facet and this pottery exhibits both technologically proficient and detail rich serving and presentation bowls as well as the simple Chicago Orange vessels, likely built for cooking and storage (McAnany and Varela 1999:157). Other important types during this period are Abelino Red, Pital Cream, Joventud Red, and Muxnal Red-on-cream, and incising with lines was the popular pattern of decoration (Varela 2004:171). In a specific burial from this period thought to contain a high status individual, Burial 1-43, two ceramic bowls were found, a Timex Incised, Timex variety, and a Toribio Red-on-cream: Toribio variety (McAnany and Varela 1999:155). Because of the inclusion of these types in this particular burial it can be inferred that they represented more highly regarded types of pottery and were likely not used in everyday life but were rather saved for special occasions or ceremonies such as burials. Moving into the late facet of the Chaakk'ax complex, there was a dramatic decrease in the diversity of ceramic types as the multitude of painted, resist and inscribed types shrinks to just three predominate types of bichrome and monochrome serving bowls (McAnany and Varela 1999:158). These bowl types are Joventud Red, Guitara Incised, and Muxanal Red-on-cream, though these are again dramatically outnumbered by the Chicago Orange sherds that make up 65 percent of the total sherd count for the late facet (McAnany and Varela

1999:158). The pottery decoration during this time was mainly circumferential incised lines (Varela 2004:171). Jars make their first appearance during this period but bowls outnumber jars 11 to 1 and overall vessel size is typically small (McAnany and Varela 1999:158,160).

The early facet of the K'atabche'kax complex shares many similarities with the preceding Chaakk'ax complex in terms of pottery types (McAnany and Varela 1999:158). Chicago Orange again dominates the sherds found, making up 75 percent, and was increasingly produced as jars and bowls (McAnany and Varela 1999:159). The Sierra Red group was used intermittently in ritual and domestic contexts and incised lines began to form geometric motifs (Varela 2004:171). It is during this period though that the earliest intact spouted vessel was found, used as a burial accoutrement, and that the quadripartite motif makes its appearance on pottery at K'axob (McAnany and Varela 1999:159). These spouted vessels would continue to be seen in the late and terminal facets of the K'atabche'kax complex displaying unique qualities and even including effigy forms (McAnany and Varela 1999:159). Some have suggested that the spouted vessels recovered may have been “signature” pieces because they contain special characteristics such as modeling, gadrooning, incising, and appliqué (Powis et al. 2002:101). In the late facet, Chicago Orange drops to comprise 56 percent of the sherds, and large striated jars used for cooking and storage, classified by the type: variety Monkey Falls and Sapote, classify 5 percent of the sherd total (McAnany and Varela 1999:160). The bowl to jar ratio reflects a huge jump in the production of large jars, as it drops to .7:1 (McAnany and Varela 1999:160). These jars featured short necks, with direct rims and occurred in three main types, Chicago Orange: Chucun Variety, Monkey Falls Striated: Monkey Falls Variety, and Sapote Striated: Unspecified Variety (Varela 2004:171). It is also during this period that a variation on the common Sierra Red

type appears, called Society Hall Red (McAnany and Varela 1999:160). With the change in burial treatment came a change in pottery. The size and shape of pottery vessels changed as more spouted vessels were placed in graves and in flexed interments, flat-bottomed bowls were inverted to protect the individual's upper body and head (McAnany and Varela 1999:160). These bowls did not serve as food-containing vessels, but instead formed a capstone for the buried and were often of the Society Hall Red type (McAnany and Varela 1999:160). Finally during the terminal K'atabche'kax facet, the pottery assemblage is typified by diversity and the incorporation of new design styles such as large serving bowls supported by mammiform tetrapods (McAnany and Varela 1999:163). Large serving bowls become increasingly popular and jars are once again outnumbered by bowls almost 3 to 1 (McAnany and Varela 1999:163). The popularity of the small Chicago Orange vessels falls to comprise only 25 percent of the total sherd count while large, striated vessels make up 41 percent (McAnany and Varela 1999:163-164). Red wares dominated and Sierra Red: Sierra Variety was the most popular (Varela 2004:171). Geometric motifs continued, and vessels were decorated with crosses, monkey-face applications, and half-moon incisions (Varela 2004:171).

The Classic period also had its own distinct pottery types. The two complexes are Nohalk'ax, with an early and late facet, and Witsk'ax, with an early and middle facet during the Classic period (Berry et al. 2004:194; Varela 1997:206). Nohalk'ax, which predominated the Early Classic, and Witsk'ax, which took over during the Late and Terminal Classic (Berry et al. 2004:194). From the Preclassic to the Classic there was a gradual replacement of the earlier red-slipped pots with glossy orange slip, polychrome painting, and variegated colors with a continuation of waxy wares (Varela 2004:171). Pottery types that predominated

during the Classic period were dishes with rounded sides and ring bases, as well as bowls with basal breaks or Z-angles and jars with vertical necks (Varela 2004:171). Vessel rim diameters diminished in contrast to the large serving bowls of the terminal K'atabche'kax (Varela 2004:171). The motifs on the pottery included the Kan Cross, shell motifs, as well as hummingbirds, skybands, and undulating jaguars and vessel feet were sometimes modeled to form animal features (Varela 2004:171; McAnany and Varela 1999:164). The most abundant ceramic types present at K'axob during the Classic period are Chicago Orange: Chucun Variety, Monkey Falls Striated: Monkey Falls Variety, Sierra Red: Sierra Variety, and Aguila Orange: Aguila Variety (Varela 2004:190).

The inclusion of pottery in burials was common during the Classic period at K'axob and included many different types and possibilities for inclusion. Pottery during the Nohalk'ax period was concentrated in the uppermost floors of Preclassic house-mounds, in addition to burials (Varela 2004:189). During the Late Preclassic and Early Classic periods, there was a dramatic increase in bowl size, which in turn facilitated the increase of pottery being used to cover the heads of interred individuals (McAnany, Storey, and Lockard 1999:137). From this transition, Society Hall Red vessels were replaced by large basal-flange polychrome and monochrome bowls as head coverings (McAnany and Varela 1999:164). The number of vessels per burial ranges from simply large sherds to up to five vessels (McAnany, Storey, and Lockard 1999:138). The pottery found in burials varies from bowls to drinking cups to spouted vessels, which could be a status marker of the individual (McAnany, Storey, and Lockard 1999:138). Spouted vessels were found with two of the three cases of hematite "scattering", which will be discussed in the next section, as did two of the seven occurrences of Jadeite and two of the five burials containing the cross motif

(McAnany, Storey, and Lockard 1999:138-139). These rare objects increase their clout as indicators of high status individuals when found together. It is also believed that spouted vessels played an important role in social life and ritual activities due to the fact that they are rarely found interred with subadults (McAnany, Storey, and Lockard 1999:139).

Other Grave Goods

Worked shell and pottery were not the only grave goods found in burial contexts at K'axob. Though in limited quantities and interments, objects of greenstone, jadeite, dark grey slate or soapstone, carved bone, and hematite "scatterings" were also found in burial contexts. The rare quality and scarce distribution of these items implicates importance or high status to the individuals with whom they were placed. At K'axob during the Preclassic, greenstone was found carved into disks and beads and in a rare instance, unfinished pieces were found in a burial (Bartlett 2004:355). Soapstone or dark grey slate was found in a burial and was carved into a zoomorphic figure and was likely worn as part of a necklace (Bartlett 2004:356). Bone was found carved into many different forms. These included utilitarian objects such as awls, needles, and pins, as well as ornamental objects like bone tubes used as fan handles, bone beads, and polished ear spools (Bartlett 2004:359,362). All of these bone artifacts were found in burial contexts, and the bone tubes were found in association with the only two jadeite beads found at K'axob during the Preclassic (Bartlett 2004:359). Hematite is a red oxide powder that was sprinkled over mortuary remains, and was not readily available to the individuals at K'axob (McAnany, Storey, and Lockard 1999:137). It was likely reserved for certain individuals who were important to the community, a belief which is strengthened by the fact that it is only found in three mortuary interments at K'axob (McAnany, Storey, and Lockard 1999:137). Because of the rare nature of these objects, it is

very likely that the burials in which they are found include individuals who were either of a higher status or who held a special significance in the community to warrant such lavish grave goods.

Excavations of Classic Period Burials at K'axob

Research at K'axob began in 1981 with surveys, mapping, and preliminary test excavations to demonstrate the existence of a community on the high ground surrounding Pulltrouser Swamp (McAnany 1997:1). The excavations of the Classic Period burials at K'axob began with Operations 7, 12, and 13 in 1992, but were primarily done during the 1995 field season. During the 1995 field season, from February to May, excavations were performed at five residential platforms and one "nonmounded sascab scatter" in addition to excavations undertaken at Plaza A, the tallest pyramid at K'axob, and platform Structure 2 (McAnany 1997:3) (Figure 3.4).

The 1995 field season was designed to explore the northern portion of the site and document the growth of the community from the Preclassic period into the Classic period (Henderson 1997:9). Extensive horizontal excavations were conducted on top of Plaza A to document the construction of the monumental pyramid and the functional variation in the structures surrounding the pyramid (Henderson 1997:9). The excavations, which produced the Classic period burials, were in the residential mounds from the northern portion of the site and were designed to date the growth of the community into the Classic period and to understand the variability in household organization and economic strategies (Henderson 1997:9). A stratified random sampling strategy was applied to the residential mounds to empirically compare residential contexts and reconstruct changes in household social and economic organization, a methodology that stemmed from previous seasons of fieldwork in

which the residences from the southern area of the site were excavated (Henderson 1997:9). For each residential mound selected, excavations documented the complete occupational history of the mound uncovering a variety of features such as house floors, domestic pits, middens, and most importantly for this research, burials (Henderson 1997:9).

There were two types of residential mounds excavated, basal platform mounds and single mounds which for the purposes of the excavation included “hidden housemounds” (Henderson 1997:10). Basal platform mounds are groups of one to six structures, visible as rounded mounds of varying height, arranged around a central patio and built on top of elevated foundation platforms (Henderson 1997:10). Single mounds on the other hand tend to be smaller and are located throughout the site, sometimes arranged in close proximity to each other or near larger basal platform mounds (Henderson 1997:10). Single mounds sometimes appear at K’axob without any clear spatial proximity or orientation to other residential mounds and can vary in height from .30 meters to a surface level dense scatter (Henderson 1997:10). The main difference between the two residential mound categories is the size and internal orientation of the structures, basal platform mounds have a raised and central patio around which individual structures are oriented, representing a scale of construction which contrasts with the smaller size and more varied orientation of single mounds (Henderson 1997:10). Both types of mounds consisted of superimposed residential structures, which is consistent with previous research in nearby settlements that has documented long occupational histories in which successive residential structures were reconstructed at the same location for hundreds of years (Henderson 1997:11).

When selecting the mounds to be excavated, both quality of mound preservation and height of sugar cane growth were taken into consideration as the cultivation of sugar cane

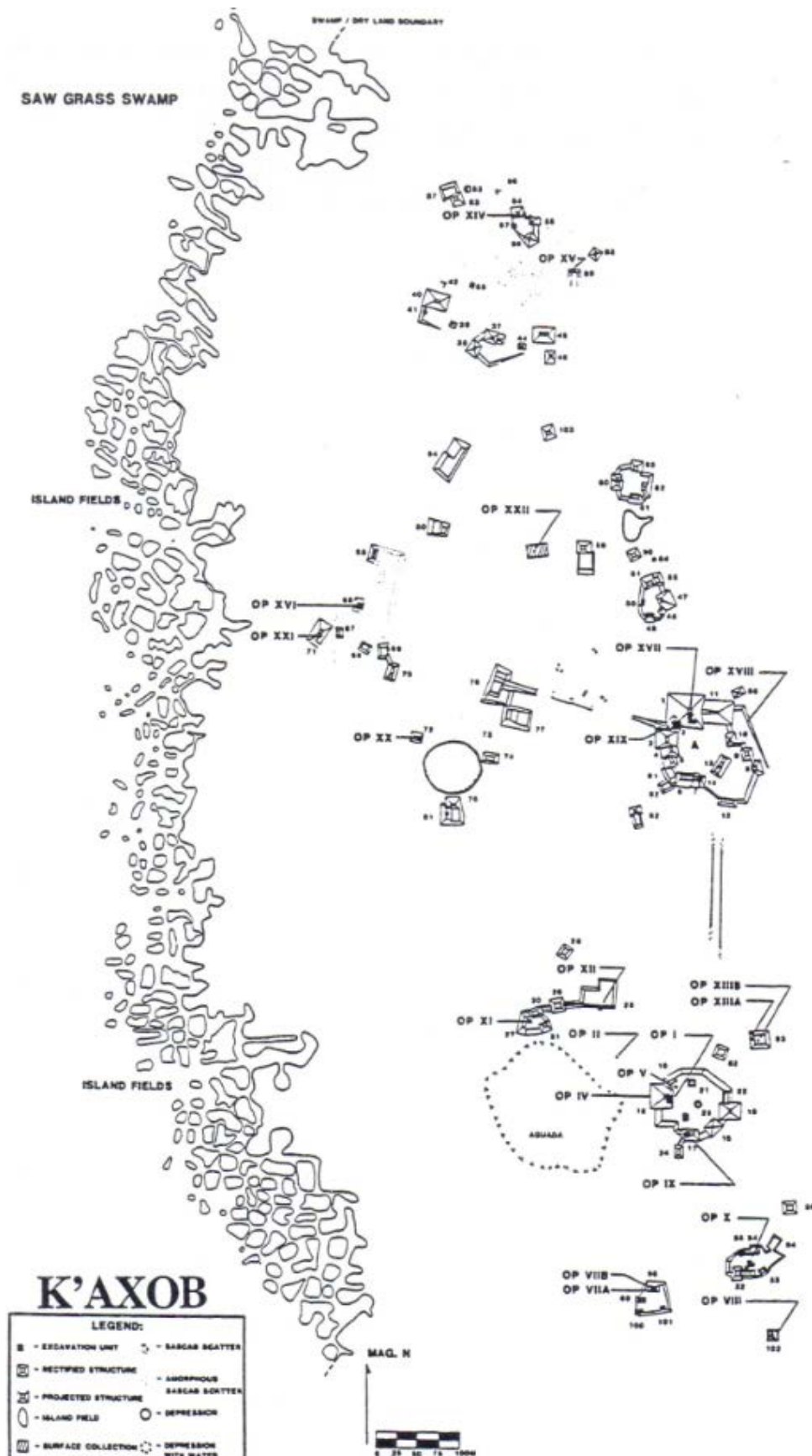


Figure 3.4: Map of 1995 K'axob Excavations (adapted from McAnany 1997:4)

was more likely to damage the smaller and lower residential mounds (Henderson 1997:12). The mounds were split into the two categories discussed above, basal platform and single, and each was given an equal chance at being selected for excavation (Henderson 1997:12). Two basal platform mounds were selected, Operations 14 and 21, and four single mounds were selected, Operations 15, 16, 20, and 22 (Henderson 1997:12). For the excavations, 4x4 meter units were chosen to provide sufficient horizontal exposure of the domestic architecture and adjacent domestic space, and the units were placed at the edges of mounds in order to document both architectural contexts and adjacent work areas (Henderson 1997:13). Operations 14, 15, 16, 20, and 21 were excavated in this manner while Operation 22 was a surface collection of ninety-nine 2x2 meter grid squares over a single mound that appeared as a dense concentration of broken plaster and domestic artifacts scattered across the ground surface (Henderson 1997:13). Only the units at Operations 14 and 15 had to be expanded to expose burials and an unusual bedrock occupation level, respectively (Henderson 1997:13).

Chapter 4: Methodology and Materials

Methodology

The study of mortuary ritual archaeologically has expanded theoretically from a reconstruction of status grades based upon burial accoutrements and interment to include a semiotic study of the messages and symbols encoded in mortuary customs by and for the living (McAnany, Storey, and Lockard 1999:129). Though mortuary ritual itself is unobservable archaeologically, there are many material indicators that are retained and detectable in burial contexts (McAnany, Storey, and Lockard 1999:131). These material remains could be burial accoutrements, but mortuary ritual can also be perceived through interment types, incidence of interment, and location. As there are variations in any kind of custom, a tendency of “corpse disposal practices” to be malleable would be unsurprising (Kroeber 1927:308). The disposal of the dead often shows a fluctuating history rather than the relative stability, which a first judgment might attribute to it (Kroeber 1927:313). It is this ability to change that is present in the burials from the K’axob Preclassic, which saw a shift from single, primary burials to multiple, secondary interments. I argue that this changeability continues into the Classic period as well.

This research aims to analyze and discuss the mortuary practices and burial patterns that are observable from the Classic period burials at K’axob. Though poor preservation of skeletal remains is an issue, excellent field notes were taken by the archaeologists and compiled into an interim report that is crucial to this study. With this interim report in addition to the analysis of the physical skeletal remains, data has been collected and analyzed using the statistics program IBM SPSS. Two resources that were invaluable to this research

were *Human Osteology* by Tim D. White, Michael T. Black, and Pieter A. Folkens and *Human Osteology: A Laboratory and Field Manual* by William M. Bass.

Osteology and Bioarchaeology Background

Bioarchaeology and Osteology are extremely important fields to consider when studying mortuary practices and burial patterns of populations like the Maya. This research uses the definition of bioarchaeology established by Jane Buikstra in 1977, defined as a multidisciplinary research program that integrated human osteologists with other scholars in addressing topics including burial programs and social organization, daily activities and division of labor, paleodemography, population movements and genetic relationships, and diet and disease (Buikstra 2006:xviii). Osteology is defined as the study of human bones (White et al. 2012:1).

Bone is composed of both organic and inorganic materials (Mays 2010:1). The mineral component gives bone its rigidity and the organic component gives bone its strength but degrades after death, which accounts for the general brittle nature of most archaeological bone (Mays 2010:1). Because of the climate where K'axob is situated, bone preservation is even poorer. Not all bones can be recovered from burials simply because they have disintegrated. Usually the bones that are recovered are the long bones because they are the strongest and densest of the bones, the tubular form maximizes strength (Mays 2010:4). Teeth are also often recovered from burial contexts because they are made from three hard tissues, enamel, cementum, and dentine (Mays 2010:11). The pelvic bone is generally not found because it is a more dimensional structure that is easily crushed under the weight of a burial.

This research included taking an inventory of the skeletal remains excavated from the Classic period at K'axob. In most cases, the bones had been identified and labeled in the field but when analyzed in the lab were unable to be identified due to the extremely fragmentary nature of the remains. In other cases the bones could be identified and sided. When possible an attempt was made to determine the approximate age and sex of the remains. With adults, only a general age range of young adult, middle adult, and older adult could be assigned and was usually based on tooth wear patterns. The age range for a young adult was over 18 but younger than 30, for middle aged adults it was between 30 and 50, and for older adults it was over 50 years of age. Tooth wear becomes greater as an individual ages, and is generally most regular on molars (Mays 2010:71). The tooth wear pattern model used was that from Lovejoy 1985. The molars were first analyzed for wear and exposed dentine, followed by the other teeth, and were compared to the chart created by Lovejoy and assigned an approximate age range listed above. When a more definitive classification could not be determined but it was clear that the individuals were not subadults, the remains were labeled as adult. When analyzing the remains of subadults it was much easier to assign a more definitive age range based on tooth development. After the teeth were identified, the dental development chart developed by Ubelaker (1999) was used to determine approximate age at death. This allowed an age determination to be made within about a three-year range. Sexing the individuals was a bit more difficult. The subadults were unable to be sexed, due to the ambiguous nature of the sexually dimorphic traits in juveniles. The adults also proved difficult to assign a sex. The two main bones used to determine sex, the pelvis and the cranium, were either not recovered from the K'axob burials or were too fragmentary to show the sexually dimorphic traits. Most adults were assigned indeterminate sex. Though occasionally when a majority of the shaft of

the femur or tibia was present, a preliminary sex was assigned using the techniques by Black (1978) and Symes and Jantz (1983). Using the femoral midshaft circumference from 114 individuals from the Libben site, Black was able to determine the same sex as when using all sexing criteria in 85-90 percent of the cases (Bass 2005:229). Individuals with a femoral circumference greater than 81 mm were determined to be male, and those with a circumference less than 81 mm were determined to be female (Bass 2005:230). Symes and Jantz used three measurements from the tibia to determine the sex of remains in the Terry Collection and a post-contact burial sample of northern Plains Indians (Bass 2005:248). For the K'axob burials, only one measurement could be taken in most instances, the circumference at nutrient foramen, which for Symes and Jantz had a percentage of accuracy between 82 and 92 percent (Bass 2005:251). For these measurements I chose the White group as the standard. Males had an average tibial circumference at the nutrient foramen of 95 mm, while females had an average circumferences of 84 mm (Bass 2005:251).

Data Analysis

Once the skeletal remains were analyzed and inventoried, the information was put into an access spreadsheet, which was then transferred to the statistics program IBM SPSS. This program was used to analyze the data and determine whether there were any statistically significant values present. Three tests were run on the data set, frequencies, crosstabs, and a non-parametric chi-square test. Frequencies were run to determine how often the variables occurred within the data set. Crosstabs was run on multiple pairs of variables to determine if there was any statistically significant connection between them. The non-parametric chi-square analysis was run on one variable to determine whether any statistically significant relationships existed between that variable and others. The tests run will be explained in

more detail in Chapter 5. Because the data set is relatively small, it is likely that there will be few statistically significant relationships between variables, but those relationships could become significant with the introduction of more data.

Skeletal Sample

The skeletal remains from the Classic period burials at K'axob were all analyzed and inventoried for this research. Because most of the bones were extremely fragmentary, for many specimens I was unable to determine which bone the fragments belonged to. In this way my analysis of the bone fragments differs from the field reports in which the bones were able to be identified using burial contexts. I will include both the field descriptions and my lab analysis of the bones in this Chapter. I will also include the preliminary age and sex I assigned to the remains in which these traits were identifiable. In total there are forty-one Classic period burials being analyzed from the site of K'axob. Three Operations with Classic period burials were excavated and analyzed with the Preclassic burials of K'axob and were included in McAnany 2004. There were two burials from Operation 7, two burials from Operation 12 and five burials from Operation 13. From the 1995 K'axob field season, three Operations excavated included Classic period burials. These include six burials from Operation 14, two burials from Operation 15, and twenty-four burials from Operation 16. The descriptions of the burials are included below and a table of these observations is included in the Appendix.

Nohalk'ax, Early Facet (A.D. 250-600)

Operations 7, 12, and 13 included interments from the early facet of the Nohalk'ax ceramic complex. In Operation 7, two interments were excavated from under the floor of a structure, Burial 7-1 and Burial 7-2 (Storey 2004:133). Burial 7-1 was interred in an irregular

pit cut into the floor and consisted of the cranium of a six- to seven-year-old child (Storey 2004:133). This was a single, secondary bundled burial that included two shell beads as grave offerings (Storey 2004:133). Burial 7-2 was interred as a primary, extended, supine interment in a stone cist, which was capped by finishing plaster (Storey 2004:133). This burial included a young to middle-aged adult of indeterminate sex accompanied by two vessels, an inverted flanged polychrome bowl covering the head and another polychrome bowl with peccary-shaped feet near the side of the body (Storey 2004:133). These burial accoutrements appear to indicate that this young person was an important family member (Storey 2004:133).

Operation 12 consisted of two interments from the Early Classic Period. These interments, Burial 12-4 and Burial 12-2 were sequential, multiple burials in a partial stone-lined cist that occurred within some time of each other (Storey 2004:133). The first interment was Burial 12-4, a middle-aged male who was placed in an extended, supine position with one ceramic vessel covering the head (Storey 2004:133). Before Burial 12-2 was interred, the burial cist was redefined, adding a circular extension at the northern end and placing a cap of stones over the second interment (Storey 2004:133). Burial 12-2 was a young adult male, primary and flexed with a “killed” polychrome vessel over his head and a shell pendant and shell bead adorning his body (Storey 2004:133). It is likely that these two individuals were important members of the residing kin group (Storey 2004:133).

In Operation 13, five Classic period individuals were recovered from four interments. Burial 13-1 was placed in a deposit right outside the wall of Structure 1, and consisted of a cranium and few other skeletal remains (Storey 2004:133). It appears to be a secondary bundle of an adult of indeterminate age and sex (Storey 2004:133). The skeletal remains of

Burial 13-1 consisted of cranial fragments, and potential long bone fragments. Burial 13-2 and Burial 13-4 were interred together at about the same time in the construction fill along the edge of Structure 1 (Storey 2004:133). Burial 13-2 was a primary, extended young adult male whose head was covered with a vessel (Storey 2004:133). The skeletal remains consisted of a few fragments of the skull, teeth, long bone shafts, and a few post-cranial fragments. Beneath his legs were fragments of another, inverted, vessel and a few scattered bones that belonged to Burial 13-4 (Storey 2004:133). Burial 13-4 was a secondary interment of a seven- to eight-year-old child (Storey 2004:133). This burial consisted of two teeth that were used to determine the age of the individual. The final interment was a secondary, multiple interment of Burial 13-3a and 13-3b, conjoined, bundled remains placed in an intrusive pit, cut through the floor of a structure (Storey 2004:133-134). The two individuals were placed under two ceramic vessels and co-mingled (Storey 2004:134). Burial 13-3a is an eight- to ten-year-old child and Burial 13-3b is an adult male (Storey 2004:134). Burial 13-3a contained only teeth, which were used to age the individual, while Burial 13-3b contained fragmentary bones including pieces of the cranium and partial long bone shafts.

Nohalk'ax, Late Facet (A.D. 250-600)

Only one burial was recovered from the late facet of the Nohalk'ax ceramic complex. This burial, Burial 14-8, was recovered from Operation 14 from a crypt-style burial pit (Schulz 1997:28) (Figure 4.1). The pit was oriented east to west and was covered by three large rocks (Schulz 1997:28). The body appeared to have been wrapped in a reed mat, which had disintegrated and left behind a negative impression (Schulz 1997:28). The remains recovered included a partial skeleton with cranial fragments, fifteen teeth, partial long bone shafts, and other post-cranial bone fragments. From the teeth I was able to assign an age of

middle-aged adult and with measurements taken from the femur shafts, using the technique from Black (1978) I was able to assign a sex of probable male. Burial 14-8 was extended/supine and included three vessels as grave offerings, one placed in the eastern end

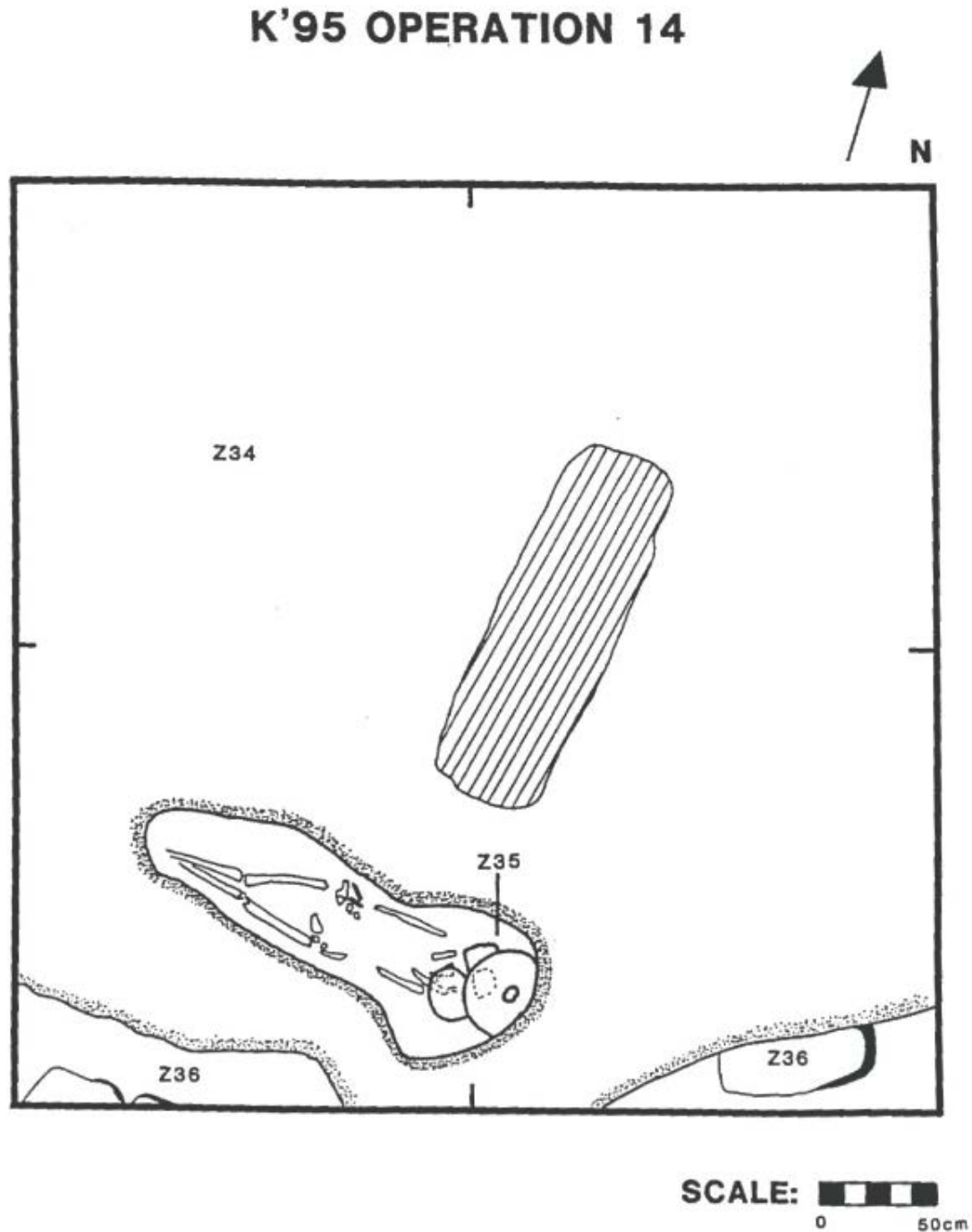


Figure 4.1: Depiction of Burial 14-8 in Zone 35 (adapted from Schulz 1997:29)

of the grave with the other two near the skull (Schulz 1997:28).

Witsk'ax, Early Facet (A.D. 600-800)

The majority of the burials from the Classic period were found from the early facet of the Witsk'ax ceramic complex and were excavated from Operations 14, 15, and 16. Burial 14-1 is a single, primary extended/supine burial interred in a pit oriented north to south with the head placed towards the north (Schulz 1997:38) (Figure 4.2). An inverted vessel with a kill-hole was found above the area of the head (Schulz 1997:38). The bones recovered were fragmentary, but included a piece of the cranium, three teeth, and fragments of the long bones. The individual could only be aged as an adult, but the fragments of the femur were used to give a sex of probable male. Burial 14-2 consisted of another single, primary extended/supine burial that was cut into the floor (Schulz 1997:38) (Figure 4.2). It contained a large inverted vessel with a kill-hole and was oriented north to south, with the head towards the north (Schulz 1997:41). The only remains recovered were fragments of the femurs, tibiae, and fibulae, which were used to give an age of adult and a sex of probable male. The burial also contained a few sherds and unworked shell (Schulz 1997:41). Burial 14-3 was also a single, primary extended/supine interment placed within a rock-lined crypt (Schulz 1997:41). The interment included two vessels, one of which was inverted with a kill-hole and placed over the head (Schulz 1997:41). Two marine shells were also found, one near the knees and the other near the head, which was placed to the north with the feet to the south (Schulz 1997:41). The remains recovered from this burial included one piece of the skull, fragments of the long bones of the arms, and partial shafts of some of the long bones of the legs. The only age that could be determined was adult, and using the femur and tibia shafts, a sex of probable male was assigned.

K'95 OPERATION 14

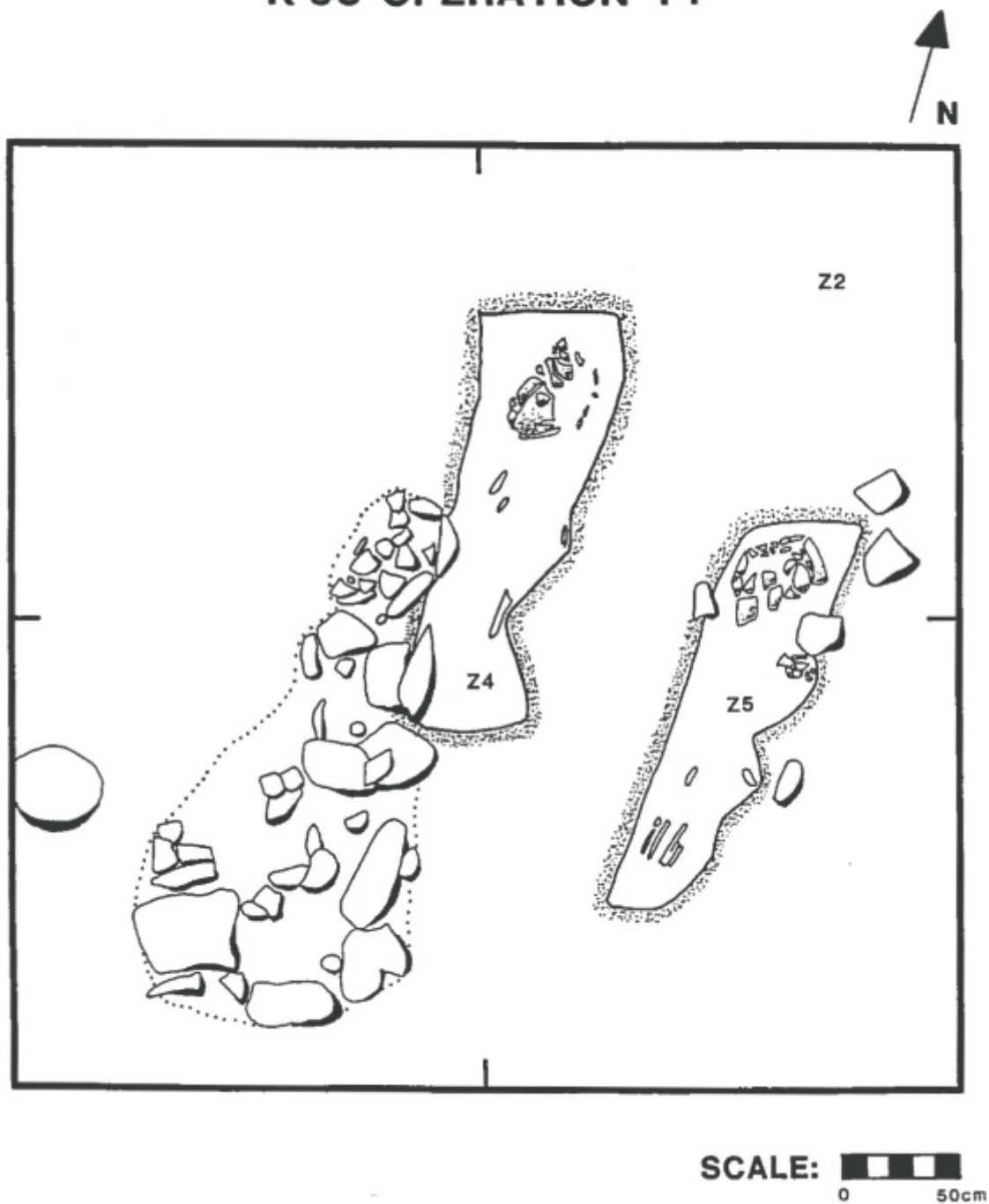


Figure 4.2: Depiction of Burial 14-1 in Zone 4 and Burial 14-2 in Zone 5 (adapted from Schulz 1997:39)

Burial 14-4 consisted of a single, primary extended/supine interment on top of a wall from a lower zone (Schulz 1997:37) (Figure 4.3). On the wall was a vessel with a kill-hole on top of a cranium, which was oriented to the north, with the feet towards the south (Schulz 1997:37). The skeletal remains included fragments of the cranium, two teeth, fragments of a few long bones, and a partial shaft of the left femur. From the teeth it was determined that the individual was middle-aged, and from the left femoral shaft a sex of probable male was given. In addition to the vessel, a few sherds and some debitage were recovered (Schulz 1997:37). Burial 14-7, like the Operation 14 burials from this period, was a single, primary extended/supine interment within a crypt style pit (Schulz 1997:33). Unlike the others, this burial was oriented south to north but did include a large inverted vessel with a kill-hole placed over the head at the southern end (Schulz 1997:33). In addition to the vessel, a jar was found near the right shoulder (Schulz 1997:33). The remains recovered did not include a cranium, which may indicate that it was moved, possibly to an ancestral shrine (Schulz 1997:33). They did however include one tooth, fragments of the radius, and fragments and partial shafts of the long bones of the leg. The wear pattern on the molar recovered indicated that the individual was at least a middle-aged adult but sex was indeterminate due to the preservation of the bones.

Operation 15 included two secondary multiple interments, Burial 15-1 and Burial 15-2, which were disarticulated and placed in a large chamber (Berry 1997:50). Burial 15-1 had a Tinaja Red bowl placed over the cranium and Burial 15-2 did not have any accompanying burial goods (Berry 1997:50). There is some discussion as to whether this interment represents one or two individuals, but for this research, the original field determination of two separate individuals will be followed. Burial 15-1 included a partial skeleton several

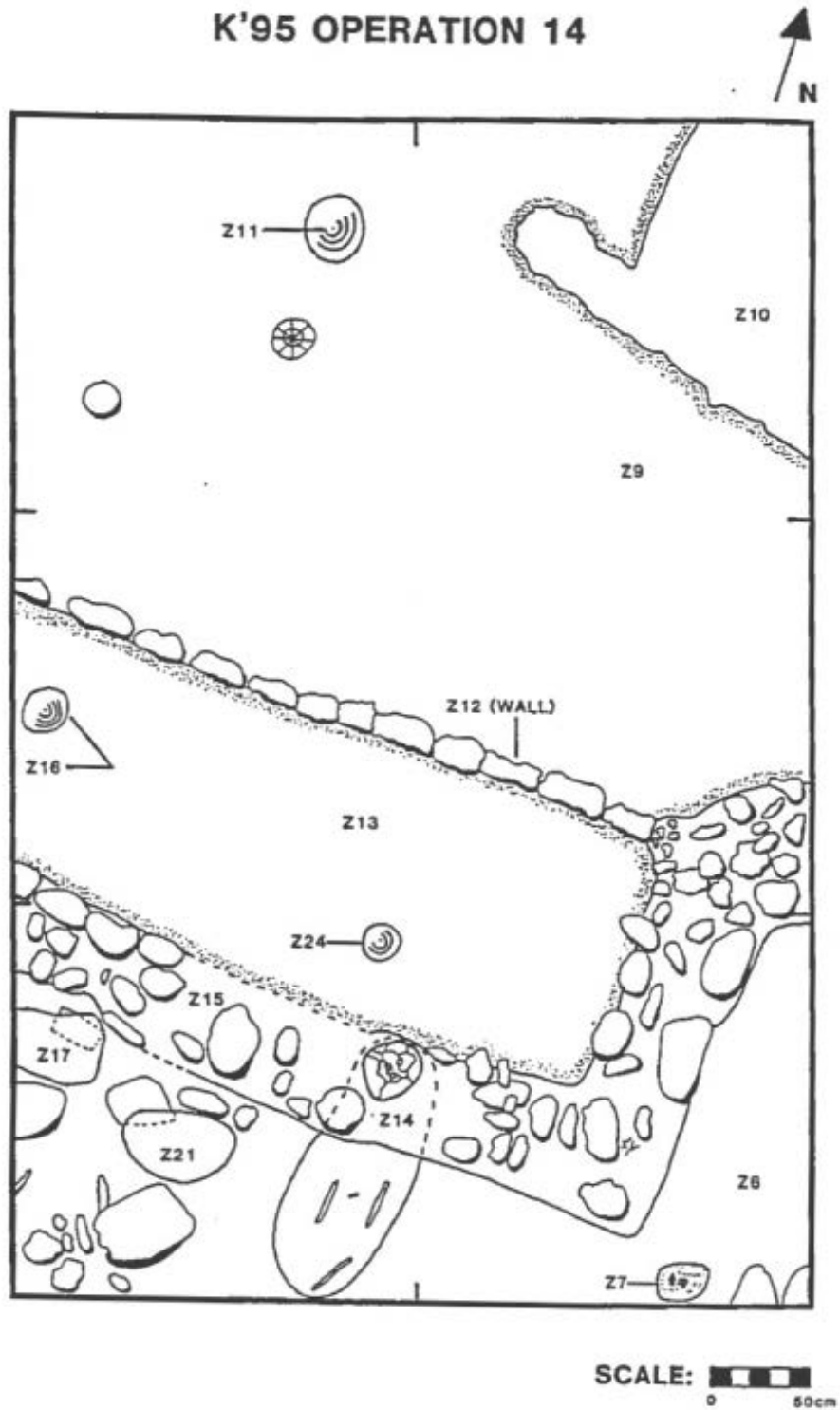


Figure 4.3: Depiction of Burial 14-4 in Zone 14 (adapted from Schulz 1997:35)

cranial pieces, three teeth, a partial left humerus and fragments of the other arm bones, a large portion of the right femoral shaft and shaft of the left tibia as well as other partial shafts and fragments of the long bones of the legs. Using the teeth an age of young adult was determined, and from the shaft of the left tibia a sex of probable male was assigned. Burial 15-2 included fewer skeletal remains, but a radial shaft, and fragments of a femur, right tibia, right fibula, and other indeterminate long bones were recovered. Unfortunately none of these could be used to determine a specific age or sex, so this individual was classified as an indeterminate adult.

Operation 16 included twenty-one early facet Witsk'ax burials, the most found in any of the Operations. Burial 16-3 was a multiple interment placed in a large oval pit along with Burial 16-4 (Thomas 1997:79). Burial 16-3 was in a seated position and was a primary interment with a large inverted vessel placed over the individual's head (Thomas 1997:80) (Figure 4.4). The skeletal remains recovered included several small fragments of the cranium, a partial shaft of the right radius and fragments of the right ulna. With so few bones to examine, the individual was assigned a sex and age of indeterminate adult. Burial 16-4 was a primary burial of a seated child interred after the adult (Thomas 1997:80-81) (Figure 4.4). The remains associated with this individual included a few small pieces of the cranium and twenty-nine teeth as well as rib fragments, shafts of the left humerus, radius, and ulna, and shafts and fragments of both femurs and tibiae. Using the formation of the permanent teeth, the individual was determined to be between four- and six-years old. Burial 16-5 was identified interred in a pit as a single, primary unknown interment (Thomas 1997:71). Due to poor preservation and the fact that the pit had been previously disturbed it was impossible to determine whether the individual was extended, bundled, flexed, disarticulated, or seated

(Thomas 1997:71). No grave goods were associated with the burial (Thomas 1997:71). A few cranial fragments were recovered as well as possible rib and vertebral fragments, and fragments of a humerus and both femurs. Because of the poor preservation this individual could only be determined to be an adult of indeterminate sex.

Burial 16-7 was determined after recovery to be a multiple interment of two individuals, Burial 16-7a and Burial 16-7b. Both burials appear to be secondary interments disarticulated in a vessel in an oval pit (Thomas 1997:80). These burials were placed over a previous burial, Burial 16-10, which could be an instance of associating the dead with ancestors or previous occupants (Thomas 1997:80). Burial 16-7a consisted of several large fragments of the skull, ten teeth, a partial humeral shaft, and indeterminate long bone fragments. The wear pattern of the teeth indicates that this individual was a middle-aged adult and is of indeterminate sex. The skeletal remains that classify Burial 16-7b are fourteen teeth and some indeterminate fragments. The development of the teeth indicates that this juvenile was between three- and four-years old.

Burial 16-9 was interred in a burial feature that also contained Burial 16-11 (Thomas 1997:79) (Figure 4.4). Burial 16-9 was in the northwest portion of the pit and was a seated primary interment with no associated grave goods (Thomas 1997:79). The skeletal elements recovered from this burial were a few pieces of the cranium, twelve teeth, a partial shaft of the right radius, partial shafts of the tibiae including 2/3 of the left tibia, and fragments of indeterminate long bones. The wear pattern of the teeth indicated the individual was a middle-aged adult and the measurements from the left tibia indicate that the individual was a probable female. Burial 16-11 was a secondary disarticulated interment placed alongside a vessel (Thomas 1997:79). The skeletal remains associated with this burial were several

K'95 OPERATION 16

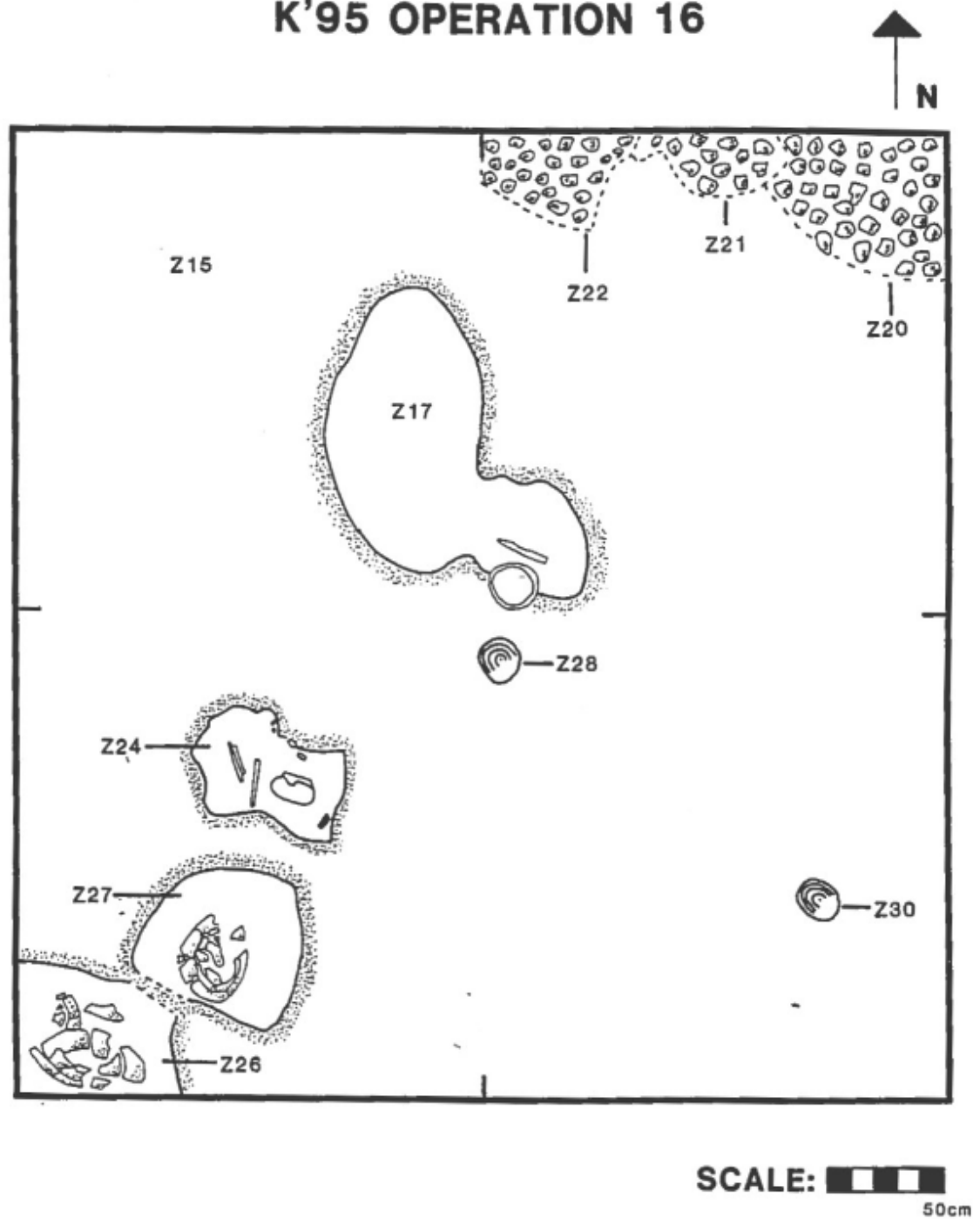


Figure 4.4: Depiction of Burial 16-3 and Burial 16-4 in Zone 17, Burial 16-9 and Burial 16-11 in Zone 24, Burial 16-12 in Zone 26, and Burial 16-13 in Zone 27 (adapted from Thomas 1997:78)

cranial fragments, three teeth, and indeterminate fragments. Using the development chart for the teeth, the individual was determined to be a four- to six-year old juvenile.

Burial 16-10 was placed in a deep pit and is a single, primary seated interment, with the upper body resting against the wall of the pit (Thomas 1997:71). An inverted burial plate was placed over the torso, next to the skull (Thomas 1997:71-72). The skeletal remains and vessel were broken, likely due to the intrusion of a later pit (Thomas 1997:71). The skeletal elements recovered from this burial were many large cranial fragments, fragments of the scapula and ribs, partial shafts of the right radius and right ulna, a large portion of the shafts of the right femur and right tibia, and fibula fragments. This individual could only be identified as an adult, and using the tibial and femoral shafts was assigned a sex of probable female. Burial 16-12 was located in a pit and included sherds from two vessels as associated burial accoutrements (Thomas 1997:80-81) (Figure 4.4). One of the vessels had a cross motif painted on the inside bottom (Thomas 1997:81). This burial was classified as a single secondary interment disarticulated in a vessel (Thomas 1997:81). The burial contained a few skull fragments and fragments of indeterminate long bones. Because of poor preservation the individual could only be classified as an indeterminate adult.

In Burial 16-13 an individual was interred in a pit covered by plaster (Thomas 1997:77) (Figure 4.4). The interment was of a seated individual in a single primary interment with a large inverted vessel placed over the individual who was determined to be a child (Thomas 1997:77). Four teeth and shafts of both humeri, the right ulna, both femurs, both tibia, and the right fibula were found. Based on the development pattern of the teeth, the individual was determined to be a juvenile around five- to six-years of age. Burial 16-14 was a multiple burial that included Burial 16-14a and 16-14b. Burial 16-14a was a primary and

flexed interment with a large inverted burial plate placed over the torso, and a spouted jar to the west of the vessel (Thomas 1997:77). The bones of this individual that were recovered included a few fragments of the mandible, twenty-seven teeth, fragments of the scapula and ribs, fragments of the long bones of the arms, and fragments of the femur and tibia. This individual was determined to be a middle-aged adult of indeterminate sex. Burial 16-14b was a secondary disarticulated interment placed in a vessel (Thomas 1997:77). This burial appears to have been a cache interment placed along with the primary Burial 16-14a (Thomas 1997:77). The bones associated with Burial 16-14b included humeral, radial, and ulnar fragments, as well as fragments of the femur and tibia. This individual was determined to be an adult and by measuring the circumference of the tibia was determined to be a probable female.

Burial 16-15 was a single, primary unknown interment contained in a pit (Thomas 1997:74). This burial contained a shallow upright bowl (Thomas 1997:74). The skeletal remains recovered were a partial tibial shaft, and fragments of the tibia and fibula bones. This individual could only be aged as an adult, but sex was determined to be probable male using measurements from the tibial shaft. Burial 16-16 was a bundled burial of a single secondary burial (Thomas 1997:74). It is debated whether this burial contained one or two individuals but the dominating thought is that it was a single interment and the skeletal remains appear to support that (Thomas 1997:75). This burial was placed above a posthole and does not have any accompanying burial goods (Thomas 1997:74). This burial included several cranial fragments, fragments of the humerus and radius, and partial shafts of the femurs. Burial 16-16 could only be aged as an adult, but was sexed as a probable male from measurement of the femoral shaft.

Burial 16-17 was recovered from a pit and contained a single, primary flexed interment (Thomas 1997:71). No burial accoutrements were recovered from this interment (Thomas 1997:71). Shafts of the radius, ulna, femur, and tibia were recovered from this interment. There was no way to determine a specific age for this individual other than adult, but a sex of probable male was assigned based on tibial measurements. Burial 16-19 was interred in a west wall and appeared to be a single, secondary burial disarticulated in a large vessel (Thomas 1997:75). This burial consisted of cranial fragments, ten teeth, and fragments of a femur. The teeth of this individual indicate that it was a juvenile between the ages of four and six.

A single, secondary disarticulated in vessel interment was recovered from Burial 16-20 (Thomas 1997:72-73). This burial contained two inverted vessels, a flat-bottomed burial plate and a round-bottomed bowl (Thomas 1997:72). The skeletal remains recovered included fragments of the skull, ten teeth, a scapula fragment, fragments of the femur, and other indeterminate long bones. Based on the wear pattern of the teeth the individual was determined to be a middle-aged adult. Due to poor preservation no sex could be determined. Burial 16-21 was a single secondary burial interred directly above Burial 16-22 (Thomas 1997:70). This deliberate placement could indicate an ancestral connection between the individuals (Thomas 1997:70). The remains of Burial 16-21 were disarticulated and placed beneath a shallow bowl (Thomas 1997:70). Fifteen teeth and indeterminate long bone fragments were all that were recovered. The teeth of this individual indicate that it was a juvenile between four- and six-years of age. Burial 16-22 was discovered with a large inverted vessel and two smaller upright vessels (Thomas 1997:70). The large vessel was likely inverted over the head of the individual who was disarticulated in a single secondary

interment (Thomas 1997:70). Pieces of debitage are the only other grave goods associated with the individual (Thomas 1997:70). The skeletal remains recovered included a few cranial fragments, fourteen teeth, and indeterminate long bone fragments. From the pattern of tooth wear the individual was determined to be a middle-aged adult of indeterminate sex.

Burial 16-23 contained a single secondary disarticulated individual with no associated grave goods (Thomas 1997:69) (Figure 4.5). From this interment a partial cranial vault was recovered as well as other indeterminate fragments. From the size of the cranium it was determined that the individual was an adult of indeterminate sex. Burial 16-24 is the last of the burials recovered from Operation 16 during the early facet of the Witsk'ax complex. Burial 16-24 was a single, primary extended/supine burial (Thomas 1997:69) (Figure 4.5). The grave had an east to west orientation with the head to the east and included a large vessel placed over the head of the individual (Thomas 1997:69). While the bones were still in the ground, the pelvis was preserved enough to determine that this individual was an adult female (Thomas 1997:69). The burial also contained many large skull fragments, twenty-three teeth, fragments of the scapula, clavicle, and ribs, humeral fragments, ulnar fragments, and fragments of the femur, tibia, and fibula. From the wear pattern of the teeth the individual was determined to be a middle-aged adult and the sex was taken from the initial field observation.

Witsk'ax, Late Facet (A.D. 800-900)

Burials from the late facet of the Witsk'ax ceramic complex were found exclusively from Operation 16. Burial 16-1 was excavated from an oval pit and appears to have a marker in the form of concretions of small rocks (Thomas 1997:83) (Figure 4.6). Directly above the burial a deposit of sherds and a large broken macroblade were found and associated with the

burial (Thomas 1997:83). The individual was in a flexed position as a single primary interment (Thomas 1997:83). A mano fragment, five chert hammerstones and a large vessel were placed with the body in the burial (Thomas 1997:83). It is believed that this burial was reopened after the interment of the individual to allow for the deposition of the vessel and

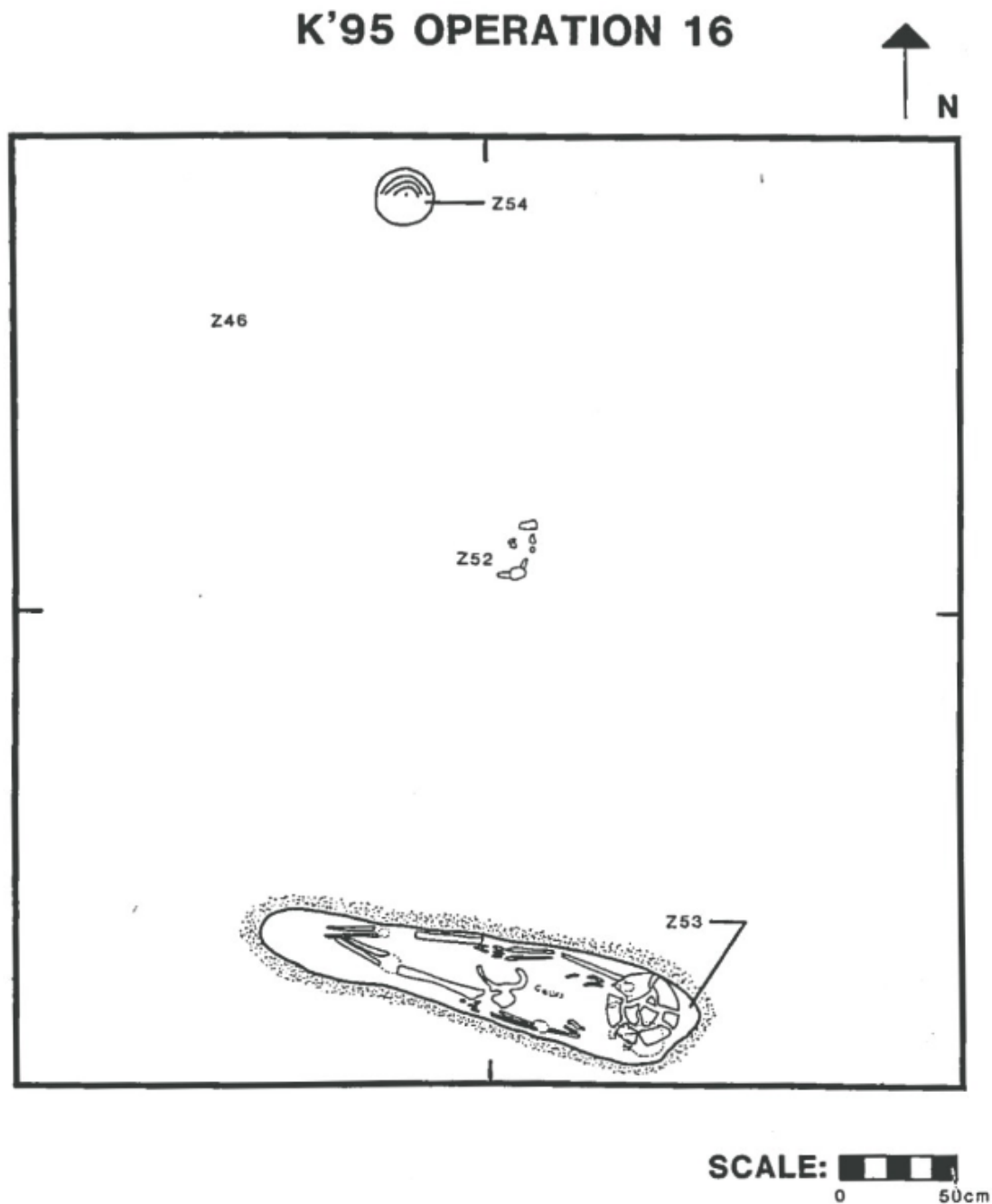


Figure 4.5: Depiction of Burial 16-23 in Zone 52 and Burial 16-24 in Zone 53 (adapted from Thomas 1997:67)

when it was re-covered the sherds and macroblade were placed above the burial (Thomas 1997:83-84). Several small cranial fragments were recovered as well as eight teeth and fragments and shafts of many of the long bones. From the pattern of wear on the teeth the individual was determined to be a young adult and the femoral shaft that was present gave a sex of probable male. Burial 16-6 and Burial 16-8 were found in a multiple interment placed in a pit (Thomas 1997:84) (Figure 4.6). Burial 16-8 was interred first as a primary burial, flexed on one side facing south with two bowls placed over the legs (Thomas 1997:84). The skeletal material associated with this individual was one tooth and partial shafts of the humerus, left ulna, right femur, and frags from the other lower long bones. No age determination other than adult could be made, but the long bones indicate that this individual was a probable male. When Burial 16-6 was interred, the pit containing Burial 16-8 was reopened and Burial 16-6 was placed directly over the head of the other individual (Thomas 1997:84). This burial was a secondary bundle that included an inverted vessel, which appeared to have a kill-hole (Thomas 1997:84). Burial 16-6 included several cranial fragments, fourteen teeth, and various fragments and partial shafts from the long bones of the arm. This individual was determined to be a middle-aged adult from the wear patterns on the teeth, but no sex was able to be determined.

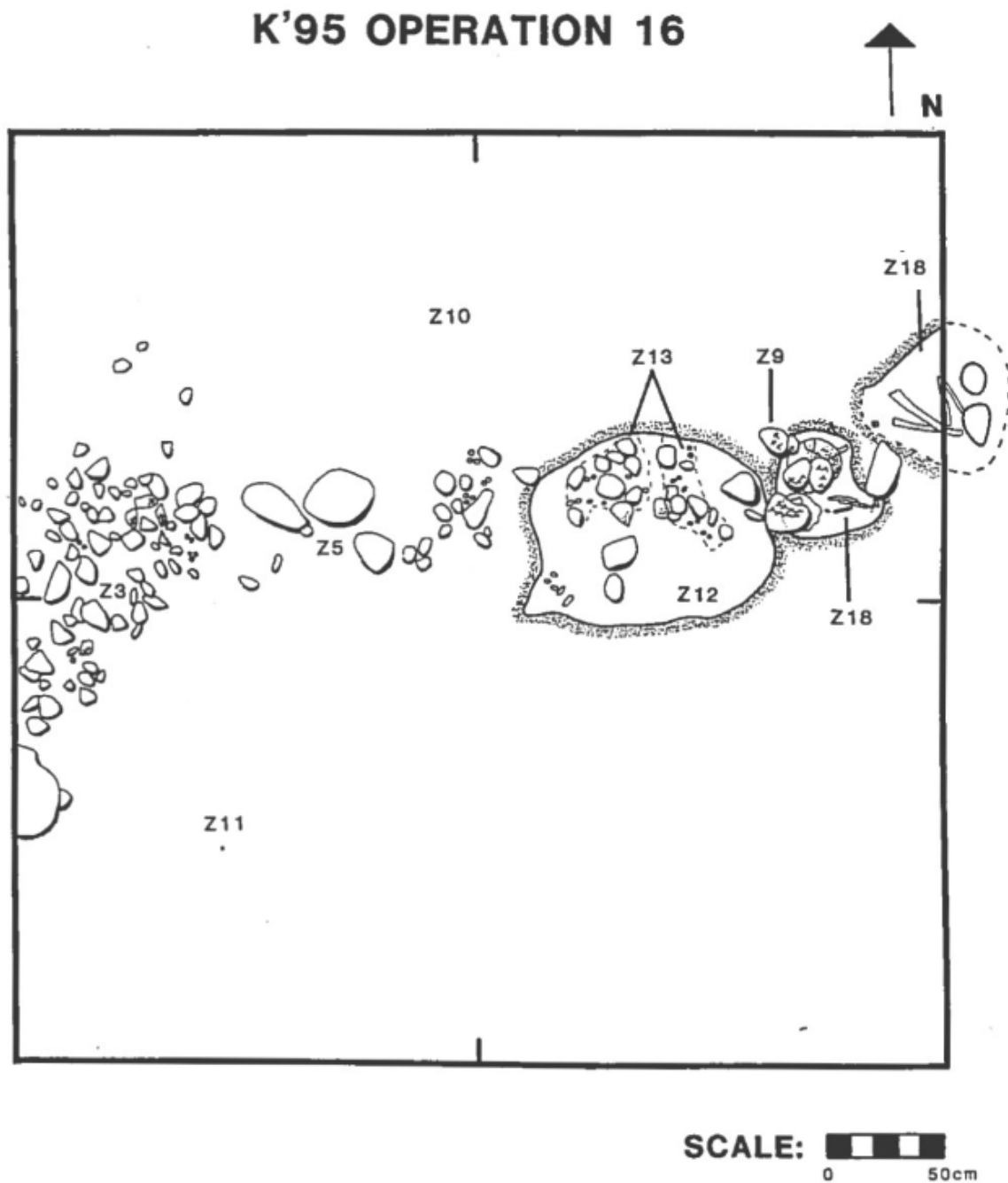


Figure 4.6: Depiction of Burial 16-1 in Zone 12 and Burial 16-6 and Burial 16-8 in Zone 18
(adapted from Thomas 1997:82)

Chapter 5: Results

Data Analysis and Findings

Once the bones were analyzed, the data collected was put into a database and combined with the information provided from the K'axob Project Interim Report. The variables that were chosen for this research were age, sex, number of interments (single or multiple), interment type (primary or secondary), burial position (bundled, extended/supine, flexed, seated, disarticulated, in vessel, or unknown), ceramic complex, number of offerings, number of shell artifacts, number of vessels, orientation, and location. These variables were chosen based on the initial hypotheses presented in the first chapter as well as data collected from the excavations. Frequencies were run on age, expanded age, sex, number of interments, interment type, burial position, orientation, ceramic complex, presence of offerings, number of offerings, and location, and the results of these tests are presented in the figures below.

Frequencies

Forty-one total individuals were analyzed in this sample of burials from Classic K'axob. Of the forty-one total burials, thirty-two were adults and nine were juveniles (Figure 5.1). The most common age range for the individuals, excluding adults for whom an age could not be determined, was middle-aged adult, including eleven individuals, followed by young adult with five individuals and four- to six-year old child with four individuals (Figure 5.2). One individual was between eight- and ten-years of age, and one individual each was determined to be three- to four-years old, five- to six- years old, six- to seven-years old, and young to middle adult (Figure 5.2). Males and probable males were the most common sex at fifteen total adults (Figure 5.3). Females and probable females comprised four of the thirty-

two adults and adults of indeterminate sex made up the other thirteen adults (Figure 5.3). Single interments were more common than multiple interments at twenty-three to eighteen (Figure 5.4). When it is considered that all multiple burials contained only two individuals, this comparison becomes more striking at twenty-three to nine. Primary burials also outnumbered secondary burials twenty-two to nineteen (Figure 5.5). There were seven total categories for burial position, including bundled, disarticulated, extended/supine, flexed, seated, in vessel, and unknown. The most commonly found position was extended/supine, which described ten of the total forty-one burials from the Classic period (Figure 5.6). Seven individuals were found disarticulated in vessels, six individuals were bundled, six were disarticulated, five were flexed, five were seated, and the burial position of two individuals was designated as unknown due to the lack of preservation (Figure 5.6).

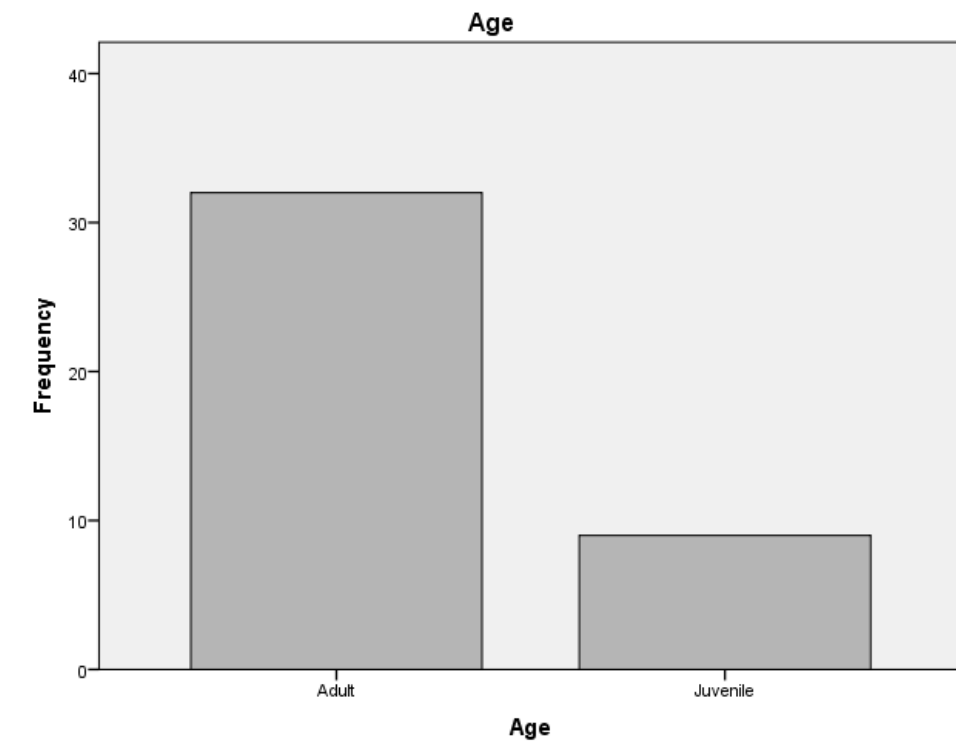


Figure 5.1: Age Frequency Bar Chart

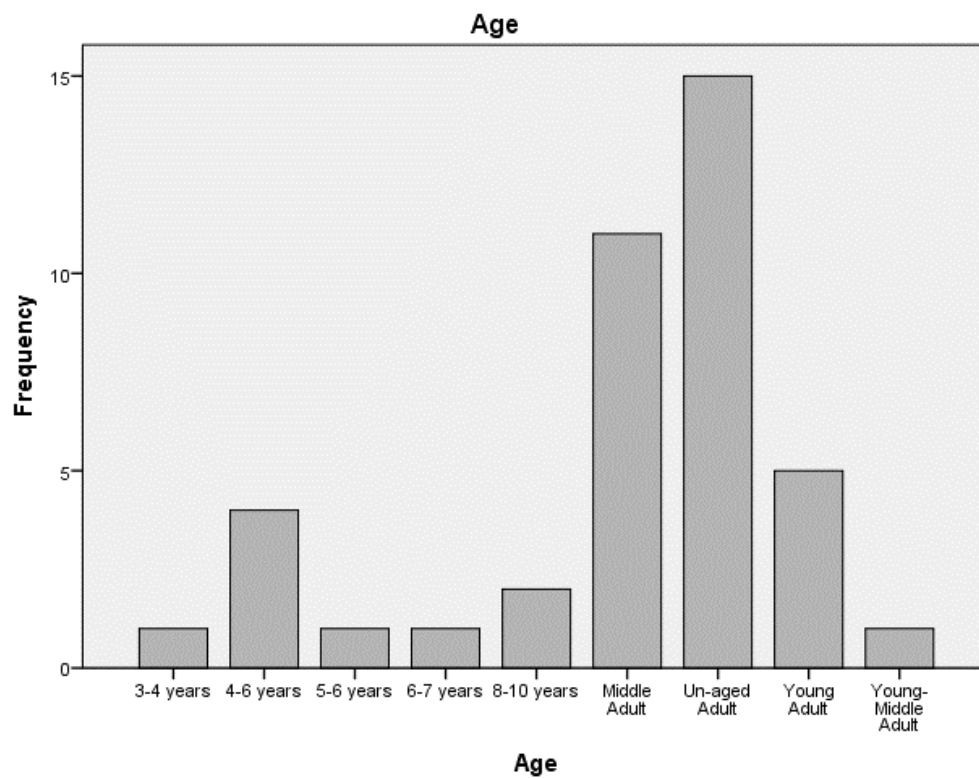


Figure 5.2: Expanded Age Frequency Bar Chart

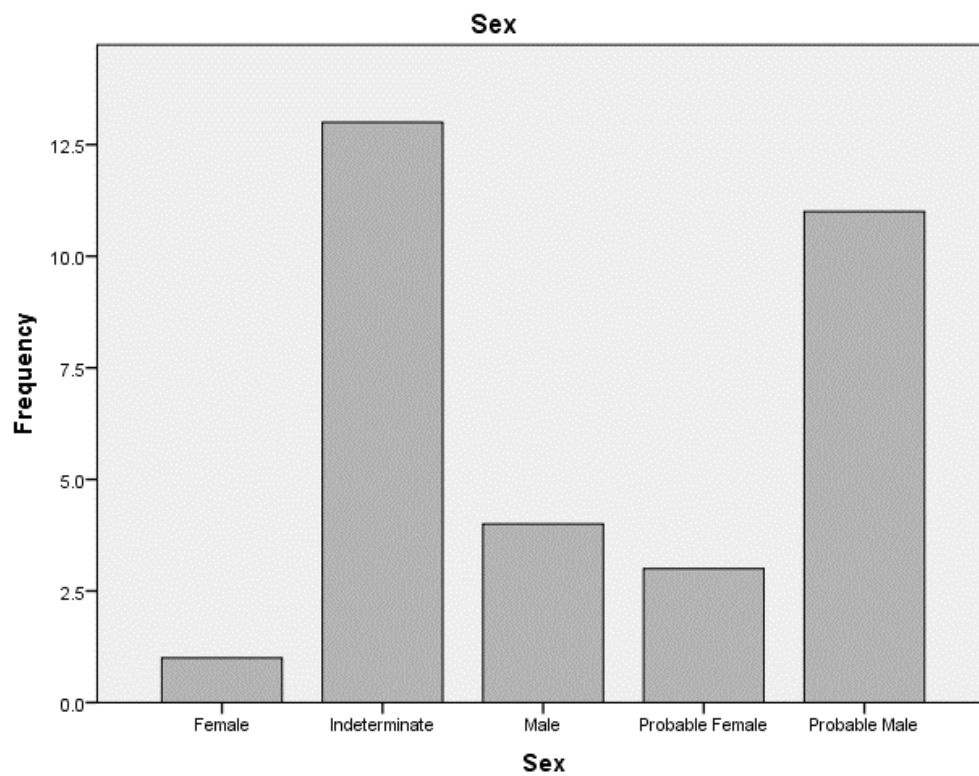


Figure 5.3: Sex Frequency Bar Chart

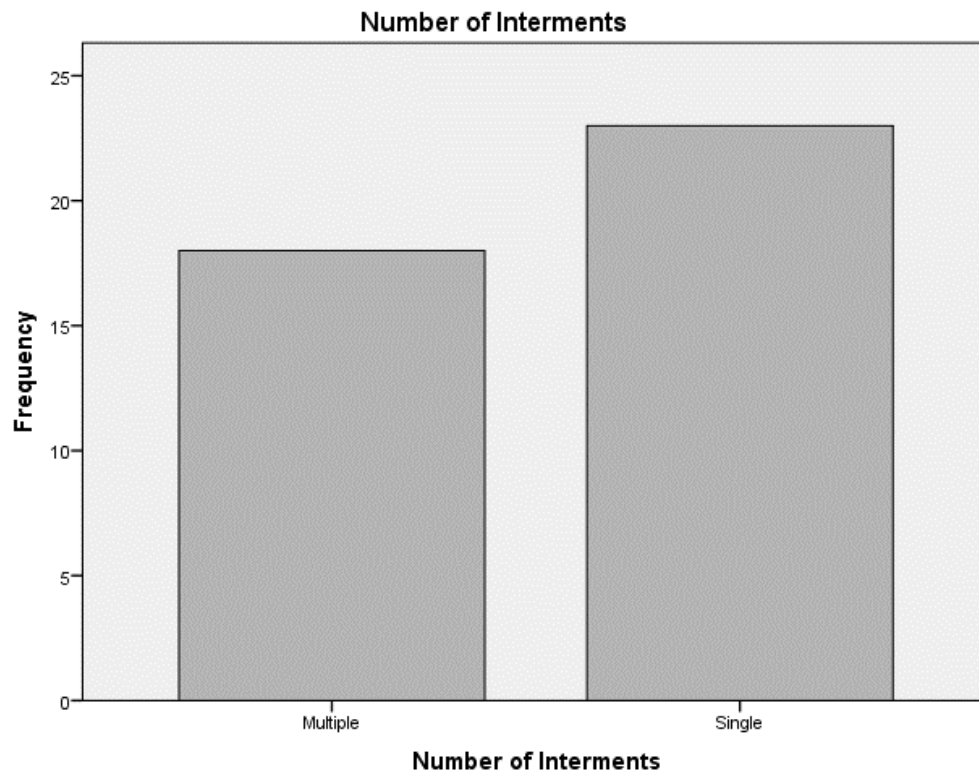


Figure 5.4: Number of Interments Frequency Bar Chart

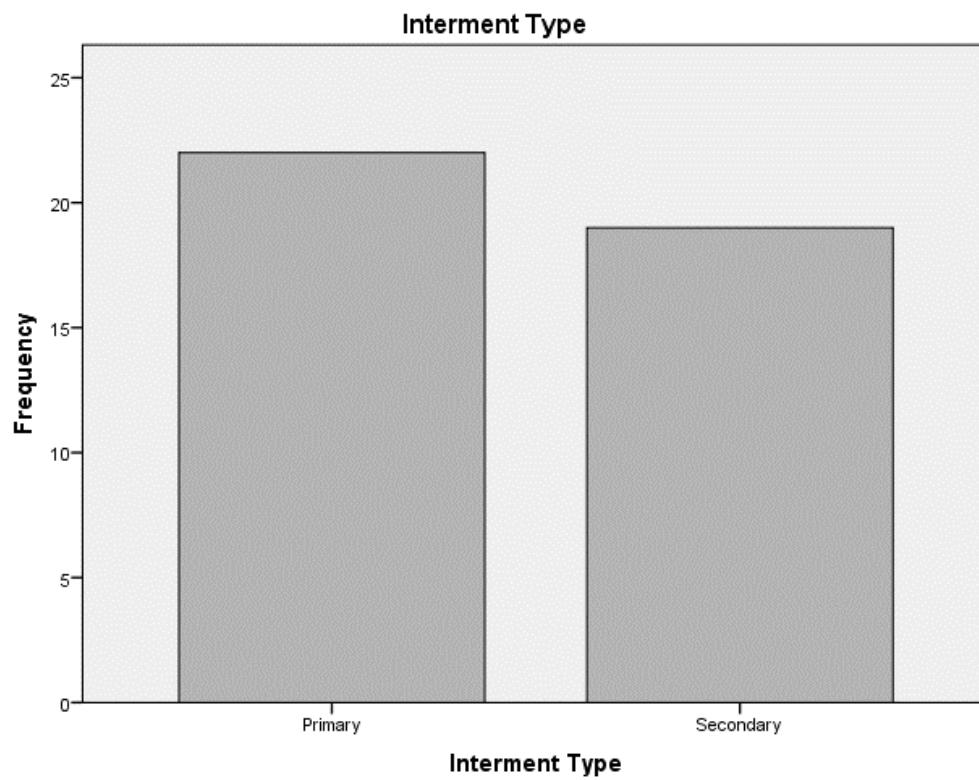


Figure 5.5: Interment Type Frequency Bar Chart

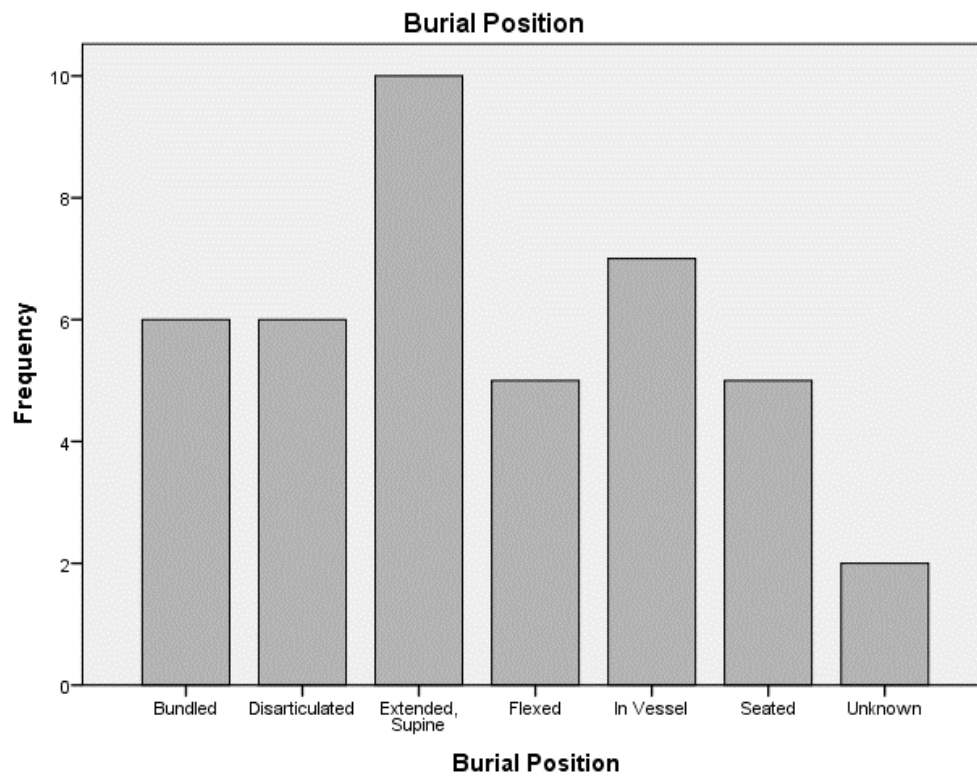


Figure 5.6: Burial Position Frequency Bar Chart

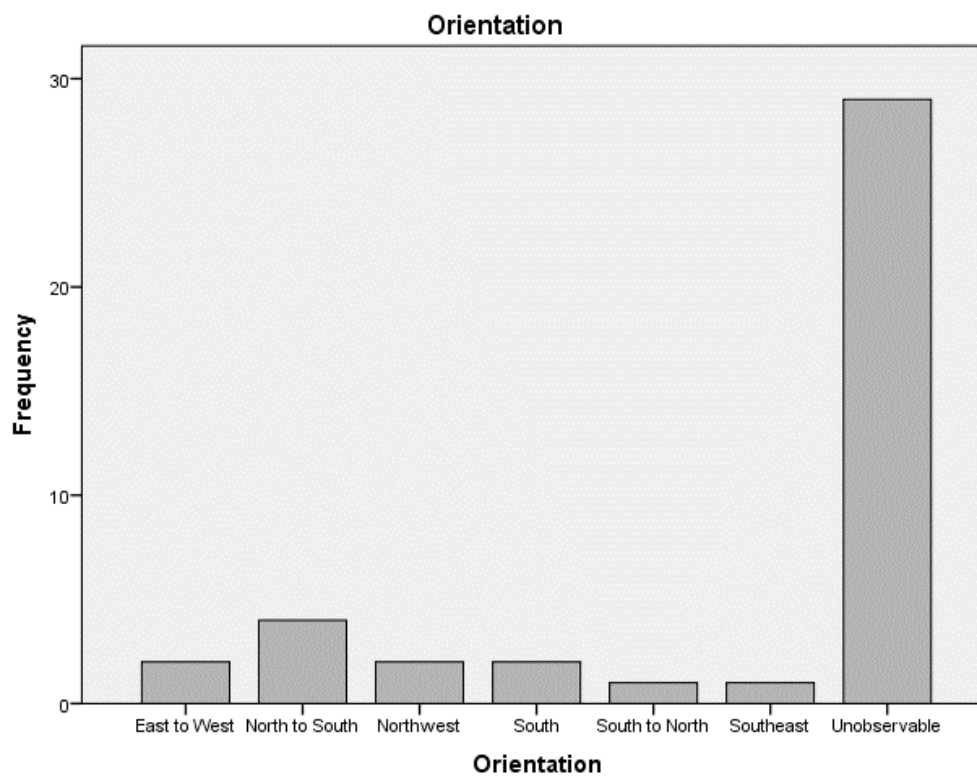


Figure 5.7: Burial Orientation Frequency Bar Chart

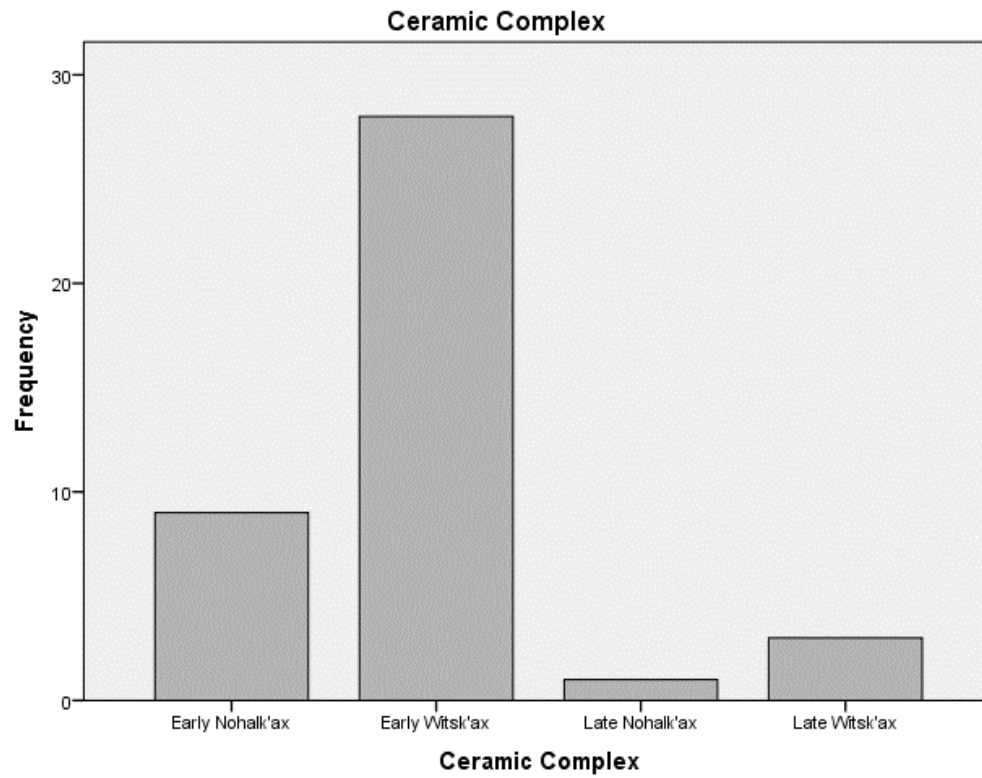


Figure 5.8: Ceramic Complex Frequency Bar Chart

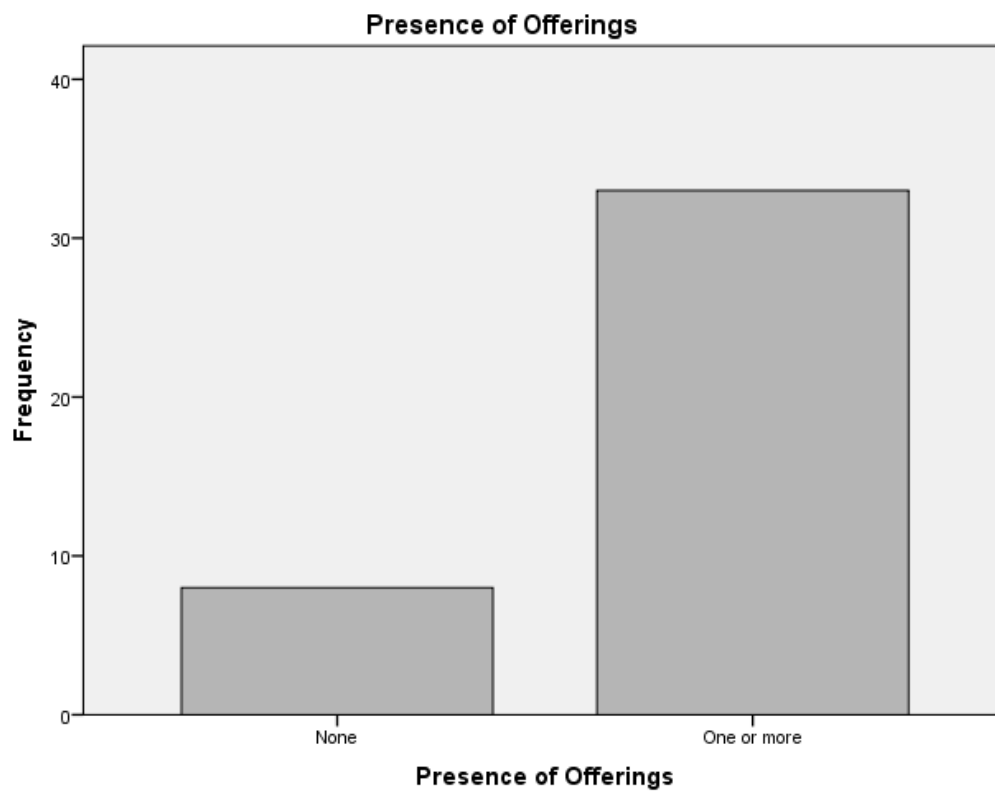


Figure 5.9: Presence of Offerings Frequency Bar Chart

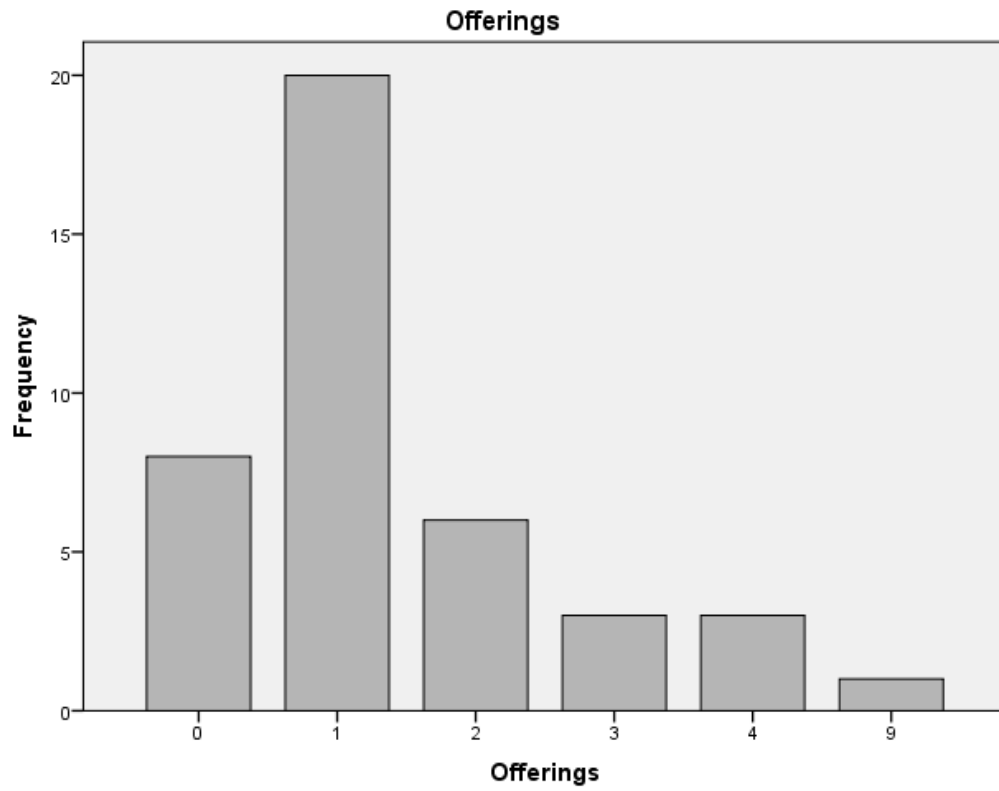


Figure 5.10: Number of Offerings Frequency Bar Chart

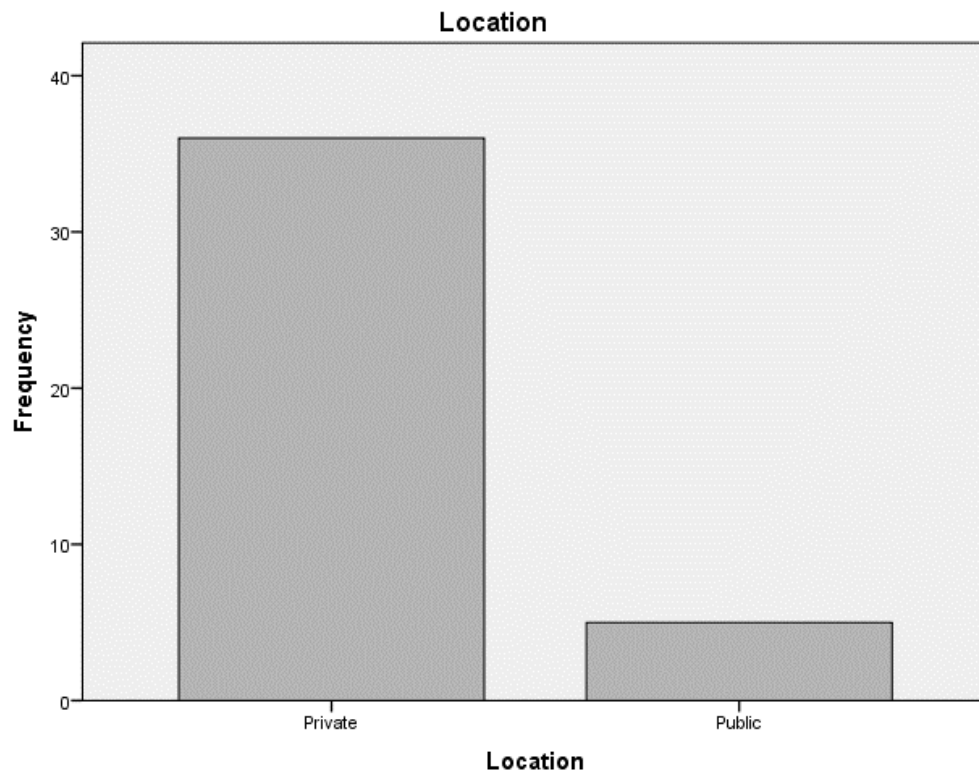


Figure 5.11: Location Frequency Bar Chart

For twelve individuals burial orientation was able to be determined. Of these twelve, the most common direction was north to south, with the head towards the north at four individuals followed by east to west, with the head towards the east, northwest, and south at two individuals each (Figure 5.7). South to north with the head towards the south characterized one individual as did the direction of southeast (Figure 5.7). By far the majority of burials came from the early facet of the Witsk'ax ceramic complex, with twenty-eight, followed by the early facet of Nohalk'ax with nine, the late facet of Witsk'ax with three, and the late facet of Nohalk'ax with one burial (Figure 5.8). Thirty-three individuals had burial offerings associated with them, while eight did not (Figure 5.9). When the number of burial offerings were analyzed, almost half of the individuals, twenty, had one grave good, followed by eight individuals with no grave goods and six individuals with two grave goods (Figure 5.10). Three individuals each had three and four burial offerings, and one individual had a remarkable nine burial offerings (Figure 5.10). Finally, thirty-six individuals were buried in private spaces inside a residence, and only five were buried in public spaces (Figure 5.11).

Crosstabs

The second test run on the data set was crosstabs. This test shows if there is any statistically significant relationship between two variables. When running crosstabs, both Chi-Square significance tests and Monte Carlo significance were run due to the relatively small number of data. In general the variables in the sample from Classic K'axob were not large enough to produce a valid chi square test, therefore I had to look at the Monte Carlo or exact significance to determine if there was a relationship between two variables. The results from some of the statistically significant crosstabs tests performed are presented here.

When interment type was compared to age (adults versus juveniles) the results were almost significant (just above .05 at .057) as shown in Table 5.1. Adults tended to be primary interments, while juveniles tended to be secondary interments. Though not statistically significant, it is a strong trend in the data.

Interment Type * Age Crosstabulation

Count		Age		Total
		Adult	Juvenile	
Interment Type	Primary	20	2	22
	Secondary	12	7	19
Total		32	9	41

Chi-Square Tests^c

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.583 ^a	1	.032	.057	.038
Continuity Correction ^b	3.106	1	.078		
Likelihood Ratio	4.744	1	.029	.057	.038
Fisher's Exact Test				.057	.038
N of Valid Cases	41				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 4.17.

b. Computed only for a 2x2 table

c. For 2x2 crosstabulation, exact results are provided instead of Monte Carlo results.

Table 5.1: Interment Type and Age Crosstabs Results

Juvenile age was analyzed in terms of ceramic complex and also returned significant results, as .05 is between the upper and lower bounds of the Monte Carlo significance (Table 5.2). The six individuals in the three younger age ranges were all found in the early Witsk'ax complex, while the three individuals from the two older age ranges were found in the early Nohalk'ax complex. Because of the small number of samples, the Monte Carlo significance was used producing data that showed a strong trend but not a statistically significant

relationship. The final crosstabs test that showed a statistically significant relationship in the data was the comparison of burial position and sex, males versus females (Table 5.3). Males were more likely than females to be found in bundled, disarticulated, extended/supine, and flexed burial positions, while females were found more often than males in seated positions and in vessels (Table 5.3).

Age * Ceramic Complex Crosstabulation

Count		Ceramic Complex		Total
		Early Nohalk'ax	Early Witsk'ax	
Age	3-4 years	0	1	1
	4-6 years	0	4	4
	5-6 years	0	1	1
	6-7 years	1	0	1
	8-10 years	2	0	2
Total		3	6	9

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)		
				Significance	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	9.000 ^a	4	.061	.048 ^b	.043	.054
Likelihood Ratio	11.457	4	.022	.048 ^b	.043	.054
Fisher's Exact Test	7.644			.048 ^b	.043	.054
N of Valid Cases	9					

a. 10 cells (100.0%) have expected count less than 5. The minimum expected count is .33.

b. Based on 10000 sampled tables with starting seed 562334227.

Table 5.2: Juvenile Age and Ceramic Complex Crosstabs Results

Many more variables were tested using the crosstabs analysis, but none of these comparisons returned statistically significant results. These include interment type versus sex, interment type versus number of interments, interment type versus ceramic complex, number of offerings versus interment type, location versus burial position, location versus

interment type, number of interments versus burial position, number of interments versus location, and many more combinations. I believe that the lack of statistically significant results from the crosstabs tests is directly related to the small sample size. Should more burials be recovered and information recorded, the data analyzed may include more statistically significant relationships between the variables.

Burial Position * Sex Crosstabulation

Count

		Sex		Total
		Female	Male	
Burial Position	Bundled	0	2	2
	Disarticulated	0	1	1
	Extended, Supine	1	7	8
	Flexed	0	4	4
	In Vessel	1	0	1
	Seated	2	0	2
	Unknown	0	1	1
Total		4	15	19

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)		
				Significance	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	13.735 ^a	6	.033	.031 ^b	.027	.036
Likelihood Ratio	13.528	6	.035	.043 ^b	.038	.048
Fisher's Exact Test	10.199			.063 ^b	.057	.069
N of Valid Cases	19					

a. 13 cells (92.9%) have expected count less than 5. The minimum expected count is .21.

b. Based on 10000 sampled tables with starting seed 1660843777.

Table 5.3: Burial Position and Sex, Males versus Females, Crosstabs Results

Non-Parametric Chi-Square

The final test that was run on the data from the Classic K'axob burials was a non-parametric chi-square test. Since very few of the crosstabs analyses returned statistically significant results, this chi-square analysis was used to split up the variables and test for

equal distribution across categories of a variable. For example, interment type was split into only primary and only secondary burials and these were compared separately to burial position. In this case though, no statistically significant results were produced. However, when adults were separated from juveniles and compared to the ceramic complexes a highly statistically significant relationship was shown (Table 5.4). Twenty-two of the thirty-two total adults from the Classic period were buried in the Early Witsk'ax ceramic complex (Table 5.4).

Ceramic Complex			
	Observed N	Expected N	Residual
Early Nohalk'ax	6	8.0	-2.0
Late Nohalk'ax	1	8.0	-7.0
Early Witsk'ax	22	8.0	14.0
Late Witsk'ax	3	8.0	-5.0
Total	32		

Test Statistics			
			Ceramic Complex
Chi-Square			34.250 ^a
df			3
Asymp. Sig.			.000
Monte Carlo Sig. Sig.			.000 ^b
99% Confidence Interval			
		Lower Bound	.000
		Upper Bound	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 8.0.

b. Based on 10000 sampled tables with starting seed 2000000.

Table 5.4: Adults and Ceramic Complex Chi-Square Results

Next, males and females were separated and run individually against a variety of variables. When compared, females did not return any statistically significant results, but males did. A statistically significant relationship was shown when males were compared to

interment type (Table 5.5). Males were more likely to be interred as primary interments than secondary interments, twelve to three (Table 5.5). Males also showed a nearly statistically significant relationship when compared to ceramic complex (Table 5.6). Eight males were found in the early facet of the Witsk'ax ceramic complex, while four were found in the early facet of Nohalk'ax, two in the late facet of Witsk'ax, and one in the late facet of Nohalk'ax (Table 5.6). The significance of this test was .001 point higher than would indicate significance so we have to say that this data only shows a very strong trend rather than statistical significance. Again, many of the chi-square tests run on the data did not return statistical significance, however with the addition of more samples into the data these results may change.

Type			
	Observed N	Expected N	Residual
Primary	12	7.5	4.5
Secondary	3	7.5	-4.5
Total	15		

Test Statistics				Type
Chi-Square				5.400 ^a
df				1
Asymp. Sig.				.020
Monte Carlo Sig. Sig.				.037 ^b
99% Confidence Interval Lower Bound				.032
Upper Bound				.042

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 7.5.

Table 5.5: Males and Interment Type Chi-Square Results

Ceramic Complex

	Observed N	Expected N	Residual
Early Nohalk'ax	4	3.8	.3
Late Nohalk'ax	1	3.8	-2.8
Early Witsk'ax	8	3.8	4.3
Late Witsk'ax	2	3.8	-1.8
Total	15		

Test Statistics

			Ceramic Complex
Chi-Square			7.667 ^a
df			3
Asymp. Sig.			.053
Monte Carlo Sig.	Sig.		.051 ^b
	99% Confidence Interval	Lower Bound	.046
		Upper Bound	.057

a. 4 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 3.8.

b. Based on 10000 sampled tables with starting seed 754262874.

Table 5.6: Males and Ceramic Complex Chi-Square Results

Chapter 6: Discussion and Conclusions

Evaluation of Hypotheses

After analyzing the data and running statistical analyses, the hypotheses stated in the introduction could be evaluated. Before collecting any data I hypothesized what I thought the final analysis would show about the Classic burials at K'axob. I hypothesized that the sex ratio would be skewed towards males. This hypothesis can be accepted. In the Classic period burials, the sex ratio was indeed skewed towards males with fifteen of thirty-two adults determined to be either male or probable male and only four of thirty-two determined to be female or probable female. The hypothesis that single burials would be more common than multiple burials can also be accepted. There were twenty-three individuals in single burials and eighteen individuals were in multiple burials. These numbers are close though and include more individuals in multiple burials than were expected. Since all of the multiple burials analyzed contained no more than two individuals, it can be said that there were no more than nine total multiple burials.

I hypothesized that primary interments would be more common than secondary interments. This hypothesis can also be accepted. In the Classic burials, there were twenty-two primary burials and nineteen secondary burials. Again though the analysis showed more primary burials, the number of secondary burials was much higher than expected. I also hypothesized that among the primary burials, the extended/supine position would be the most common. This too can be accepted based purely on the number of extended burials compared to the other burial positions, though when tested in crosstabs did not produce a statistically significant relationship. The extended/supine position was twice as common, with ten instances, than the other primary interment styles, flexed and seated which each included five

individuals. I hypothesized that because of the importance of the East and West directions in Maya culture there would be a predominance of burials associated with that direction. This hypothesis must be rejected. There were twelve burials in which the orientation of the interment could be identified. In seven of these the orientation was in the north and/or south directions (Figure 5.7). Though not what I hypothesized, this directionality is not surprising as the directions of north and south also had an importance in the Maya life cycle.

Finally, I hypothesized that the burial accoutrements in the Classic period would be similar to those of the Preclassic, with few burials including high status items such as jadeite and most containing everyday items such as pottery and shell. This hypothesis can be accepted. The most common burial accoutrement found during the Classic period was pottery, the second most common was shell, though in significantly fewer numbers than vessels. Most burials contained one item, though one burial in particular contained nine offerings, the most found during the Classic. This was Burial 16-1, a young adult and probable male who had one complete vessel, accompanied by sherds, a broken macroblade, a mano fragment, and five chert hammerstones.

I also hypothesized about the presence of practices of ancestor veneration in the Classic period. Ancestor veneration was an important part of ritual all over the Maya area and K'axob is no exception. There is no reason to suspect that ancestor veneration did not play an important role in the Classic period burials. The multiple burials at K'axob included two individuals at most, and they were almost always from two different age groups. In five of the nine multiple burials, the pair included a juvenile and an adult. This would indicate that children were either interred with older family members at death or were temporarily buried in a location until their parents or relatives died when they could be recovered and

united in one burial interment. Many of these multiple burials showed evidence of the burials being reopened to inter the second individual. Seven of the nine multiple interments also included at least one secondary individual. This indicates that the secondary individual was previously interred somewhere else, and when the primary individual died, was recovered and placed with that individual. The pit containing Burial 16-8 shows evidence of being reopened to inter Burial 16-6, and Burial 16-14b appears to be a cache deposit possibly to honor Burial 16-14a or to reunite family members. Disarticulated remains in a vessel made up seven of the forty-one interments and may also represent a form of ancestor veneration. This can be seen by the fact that four out of the seven vessel interments were secondary multiple burials. This would appear to indicate that these individuals were placed possibly as special ritual interments, or as symbolic offerings to the other individual interred.

There are also a few instances of burials being placed on top of one another, which also indicates a form of ancestor veneration. Placing newly deceased individuals near family members would symbolically keep the family and the ancestors together in the residential structure. Burials 16-7a and 16-7b were placed on top of Burial 16-10, indicating a process of associating the dead with ancestors or previous occupants of the structure. Burial 16-21 was also placed above a previous interment, Burial 16-22, and this placement could represent an ancestral connection between the two individuals.

Another way to honor the dead was through burial accoutrements, and a few individuals exhibit offerings that could indicate their importance within the community or as familial ancestors. Burial 7-2 included two unique vessels unlike the others found in the Classic burials. Two vessels, an inverted flanged polychrome bowl covering the head and another polychrome bowl with peccary-shaped feet near the side of the body were recovered

from this burial (Storey 2004:133). The unique style of these vessels indicates that this individual was an important family member. Burial 14-3 included two vessels, but the more interesting inclusion was two marine shells that were strategically placed. One was placed between the knees while the other was placed near the head. No other Classic period burial includes purposefully placed shells like this, possibly indicating a special status for this individual. Burial 16-12 contains the only currently known instances of the quadripartite cross motif on pottery from the Classic burials. The flat-bottomed vessel in this burial features a painted cross motif on the inside bottom (Thomas 1997:81). The quadripartite motif was very important in Maya cosmology because it was linked to everything. The presence of the motif here indicates that the individual in Burial 16-12 is of some importance.

The most interesting burial in terms of offerings is Burial 16-1. It is an interment of a young adult, probable male, and includes nine offerings. This is the most of any other Classic burial at K'axob by five. The grave goods associated with Burial 16-1 include a mano fragment and 5 chert hammerstones initially placed with the body. It is believed that sometime later the burial was reopened and a vessel was placed on the chest of the individual who was then covered back up and a deposit of sherds and a large broken macroblade were placed on top of the burial. This is supported by the disturbances in the grave (Thomas 1997:83). This burial is also unique, because it is believed to have a grave marker in the form of small rock concretions that are not seated on the floor, but instead "float" above the floor supported by marl (Thomas 1997:83). The quantity as well as the variety of these burial accoutrements combined with the reopening ritual and grave marker indicates that this individual was an important member of the community as well as an important ancestor figure.

Preclassic Comparison

From the Preclassic period at K'axob, the sample of burials was much larger, totaling 98 individuals (Storey 2004:109). Like the Classic period burials, there were two basic types of interment, primary and secondary (Storey 2004:109). As with the Classic burials, preservation was not ideal but sex and age were determined when possible. The sample included twenty-six juveniles and seventy-two adults (Storey 2004:134). Burials from the Preclassic were also heavily skewed towards males who comprised thirty-nine of the seventy-two total adults (Storey 2004:134). There were nineteen adult females in the sample and fourteen adults for whom a sex could not be determined (Storey 2004:134). The most common burial positions were secondary bundles and extended interments with twenty-eight and twenty-six individuals interred in those positions respectively (Storey 2004:135). Thirty-eight individuals were found in exterior or public surfaces, and sixty were found in interior or private areas (Storey 2004:135). This differs drastically from the Classic period when only five out of forty-one individuals were found in public spaces. It has been noted in Chapter 3 that there was a distinct change between the early and late Preclassic in terms of burial position, beginning with primary extended burials and then transitioning into secondary bundled burials, which is obvious in the data. Also, the dominance of males in interments increased dramatically over time, which indicates that the burials in the areas excavated were becoming more restricted between the sexes.

Similarly to the Classic period burials at K'axob the grave goods found in the Preclassic were mostly modest amounts of shell and pottery. Shell accoutrements were more common than vessels in the Preclassic than the Classic, and were mostly in the form of beads (Storey 2004:115). In the early K'atabche'kax complex, shell was ubiquitous in burials and

two interments included jade, one male and one female (Storey 2004:120). One multiple interment from this complex had hematite spread over it (Storey 2004:120). Two distinct burials that stand out from the others in terms of grave goods are Burial 11-2 and Burial 1-43. Burial 11-2 included a polychrome bowl with a Kan cross motif (Storey 2004:132). This is one of a few instances of this motif in the Preclassic burials, and there is only one instance of a vessel with a cross motif in the Classic period burials. Burial 1-43 is vastly different than any of the other burials from the entire site of K'axob both during the Preclassic and Classic periods. This individual was a young to middle-aged male who was interred as a single primary extended interment (Storey 2004:110). This individual is one of the most richly accompanied burials at K'axob and includes upwards of 2,000 shell beads from bracelets, armbands, and a beaded shroud (Storey 2004:110). The individual also had two vessels interred with him, one covering the head and was adorned with a tubular jadeite bead (Storey 2004:111-112). This individual had been interpreted as a founder of K'axob and a very important ancestor, which allotted him such extravagant amounts of shell beads. He was also the earliest burial found at the site.

Nohmul Comparison

Reports describing burials as completely as the one for Classic K'axob are rare, especially for Classic period burials in the lowland Belize area. Nonetheless excavation summaries from the site of Nohmul included descriptions of a few burials that can be compared to those from K'axob. Nohmul is a nearby site in Northern Belize that lies on the San Pablo Ridge that drops steeply into the west arm of the Pulltrouser Swamp (Hammond et al. 1988:1). Nohmul was a much larger site than K'axob based on the monumental architecture and presence of a ball court (Hammond 1988:2). At this site, from the Classic

period two burials were found associated with Structure 21 (Hammond 1988:11). Both burials were in limestone-slab crypts each with a single, primary extended/supine inhumation with the face covered by a vessel (Hammond 1988:11). The second burial had an additional vessel by the hip of the individual (Hammond 1988:11). These two burials are interpreted as “founder burials” and part of a dedicatory ritual for the construction of the building (Hammond 1988:11). In another burial context an individual was found on the floor of a shaft in Structure 8 (Hammond 1987:265). The human remains indicated an extended/supine inhumation with the head oriented to the north (Hammond 1987:265). The offerings in this interment were rich, and the skull was flanked by two jade earflares, a small cylindrical jade bead, and a piriform jade bead incised with a human face bearing a cartouche on the forehead (Hammond 1987:265). In addition to these grave goods, four obsidian cores, several obsidian blades, and two chert eccentrics, one y-shaped and one in a laurel leaf form, were recovered (Hammond 1987:265).



Figure 6.1: Photograph of the Primary Burial of an Adult Male in Structure 17
(adapted from Hoffman 1985)

Two final interments discussed are the burials found in Structure 17 (Hammond 1987:271). A primary burial of an adult male in an extended/supine position was found with the head oriented to the south (Hammond 1987:271) (Figure 6.1). There were no grave goods associated with this individual, though the marl fragments around the skeleton contained imprints of textiles indicating that the body had been shrouded (Hammond 1987:271). Below this burial a second interment was discovered of another extended/supine adult with the head oriented to the north (Hammond 1987:271). This individual's face was covered by a vessel that had been broken when interred (Hammond 1987:271). These two interments are thought to be part of the same ritual sequence, and the presence of an offering with the lower individual may indicate that the upper individual was placed as part of the funeral rite for the other, indicating the lower individual was of higher status (Hammond 1987:271).

Though the number of burials described here is not as numerous as that from K'axob, there are still important comparisons that can be made between these two sites. Like K'axob the interments at Nohmul appear to have been primarily single, primary extended/supine burials. Those discussed above are also primarily adult males, corresponding to the known skewed sex and age ratios of burials. The north and south directions were also of importance in the burials at Nohmul similarly to those of K'axob. Ritual was also very important, taking place in the forms of dedicatory burials and ancestor veneration. The burials from both Structure 17 and Structure 21 have been interpreted as founder burials, consistent with structural renovations. These individuals at Nohmul exhibited the same type of vessel placement, over the face, as the burials at K'axob. Burial accoutrements during Classic Nohmul included multiple vessels and like Classic K'axob there was an absence of shell.

The cultural similarities in mortuary patterns between Classic K'axob and Classic Nohmul are clear. They both have a majority of single and primary extended burials and the burials exhibit a tendency to contain adult males over children and adult females. The burial treatment is similar, including pottery in the graves as well as the placement of vessels over the faces of the deceased. Ancestor veneration is also a shared mortuary pattern between the two sites, with the founder burials at Nohmul exhibiting evidence of special treatment as dedicatory rituals and the burial in Structure 8 exhibiting rare goods as offerings to a clearly important member of society and at death, ancestor.

The one major difference that can be seen between the burials at K'axob and Nohmul from the Classic period is only in terms of status. This is shown in the quantity and type of grave offerings. The largest number of grave goods found at Classic K'axob was nine and none of these items were as indicative of high status as those found in the burial in Structure 8 at Nohmul. This burial contained known high status items such as jade and obsidian and contained at least eleven grave goods. This is representative of the fact that Nohmul was a larger site than the minor center of K'axob. They clearly had access to more high status items and used these for burials. At K'axob during the Classic no jade or greenstone has been found in a burial context.

Conclusions

With the data collected from the Classic period burials at K'axob it is possible to add to the growing knowledge of Maya mortuary practices. From work that has been done at sites all over the Maya lowlands during the Classic period, we get a clear picture of certain mortuary patterns and burial practices that should and for the most part does remain consistent at K'axob. It is clear that at K'axob during the Classic period, the most common

interment type was single, primary extended burials, followed by secondary interments in vessels. Primary interments predominated over secondary interments and single burials occurred more often than multiple burials, though both multiple and secondary interments occurred in higher numbers than expected. Private burials far outweighed public burials, which is common as familial ancestors were kept close to the living to maintain a connection to the spiritual world and to watch over those who were still living.

Males were more commonly interred than females, though both were generally afforded the same burial treatment when interred except when burial position was concerned. Females were more commonly interred in a seated position or in vessels, while men were interred more often than females in bundled, disarticulated, extended/supine, and flexed positions. There was no statistically significant relationship between sexes and offerings or location as males and females indicating that once an individual was chosen to be buried the treatment was similar for adults. Juveniles were also afforded similar burial treatment when they were buried, though there is a strong trend in the data that suggests adults were more commonly interred as primary burials and juveniles as secondary. Juveniles were equally likely to be interred as single or multiple and as primary and secondary, there was no statistically significant relationship between these variables or the presence of grave goods. The type and quantity of burial accoutrements changed only slightly from Preclassic K'axob to Classic K'axob in that pottery became the dominant offering in graves rather than worked shell. This trend can also be seen at Nohmul where pottery is more common in the Classic period graves. In the Classic burials at K'axob as well as in the Preclassic, individuals with high status grave offerings were few with only one or two individuals accompanied by important or status-marking goods.

Ancestor veneration seems to be an important ritual activity during both the Preclassic and Classic periods at K'axob. The interment of children with adults and the placement of burials on top of one another indicate the bringing together of family members and ancestors. The presence of interments in vessels also indicates ancestor veneration in the form of bringing together individuals. In multiple burials this burial position could even indicate an offering to an ancestor as a deceased individual is reinterred with the ancestor being venerated. The fact that founder of K'axob was buried in the Preclassic with such extravagant grave goods indicates that important community members were revered after death. Burials, from the Classic period, such as Burial 16-12 with the vessel marked with a cross motif and Burial 16-1 with the chert hammerstones, mano fragment, and grave marker may also be important community members since they were the only individuals to be accompanied by these types of objects. The presence of the cross motif on pottery in burials is indicative of the presence of important community leaders or ancestors. The near disappearance of the cross motif in the Classic may indicate that fewer individuals reached such a status or that the leaders were buried in an area that has yet to be excavated.

From the Preclassic period to the Classic period at K'axob there was a shift in the community, which included the building of monumental style architecture and general growth of the community from a village into a minor center. I believe that this cultural shift also affected the mortuary patterns and burial practices at K'axob. In the Preclassic there was a shift from primary extended burials to secondary bundled burials. This indicates a shift to a more intensive ritual process for dealing with the deceased because interring an individual as a secondary bundle requires a greater commitment to that person after death than a primary extended position does. Secondary interments also require that the individual be interred

somewhere else until their final placement, which requires a record to be kept of where individuals are buried. This would mean that there were likely surface markers indicating where certain individuals were buried so that when they were to be reinterred the individuals could easily be found. This practice of secondary interments continued into the Classic period at K'axob but began to take on many different forms in addition to bundles, including disarticulated and in vessels. These burial positions require even more preparation and attention to the deceased further strengthening the argument that burial practices were becoming more intensive. Primary extended/supine interments also came back into use during the Classic, which could indicate a regression to the old ways of interring individuals, but could also be indicative of a popular style returning to use.

When the Classic period burials of K'axob are compared to Nohmul, the cultural similarities in mortuary patterns are clear. We know that Nohmul was a larger and more important Maya site due to the monumental architecture and presence of a ball court, but the ways in which they treated their dead were similar to that of Classic K'axob and other Classic Maya sites. These two sites show similar patterns in interment type, number of interments, burial position, and the fact that pottery was a common burial accoutrement. Mortuary treatment is similar as well, there is clear evidence of ancestor veneration at both sites and similar treatment of individuals in terms of vessels placed over the head.

Future Implications

This research will hopefully serve to further advance what is known about the mortuary practices of the Maya, specifically those in the lowlands of Belize during the Classic period. Though this research is only a preliminary analysis of the skeletal remains and mortuary patterns, it is useful as a starting point to begin to understand the Classic period

community of K'axob. Further analyses including isotope analysis and DNA analysis would be extremely useful to gain a better understanding of the ratios of age and sex as well as the population demographics of those buried. Isotope analysis could determine if the women who were buried were local or if they moved into the community. It could also solidify the hypothesis that the Preclassic individual with thousands of beads was a founder of K'axob if data is found that indicates he grew up in a different location. Future research focusing on these tests as well as the excavation of more burials from the Classic period would likely greatly increase the significance of the statistical analyses performed on the data set. Now, with the small sample of only forty-one burials few relationships between variables are statistically significant. Excavations not discussed in this research are those around the large Classic period pyramid at K'axob. These excavations did not uncover any burials, but it would be useful to do more work on this structure in areas that were not originally analyzed to see if there are any potential high status "elites" buried at K'axob like those found around the monumental structures at other sites, like Tikal. The future of Maya archaeology relies on the ability of archaeologists to continue excavations and to integrate scientific tests to determine information about the individuals because general skeletal preservation in the area is poor, which inhibits accurate analyses.

Appendix: Classic K'axob Burial Database Table

Burial	Age	Sex	Number	Type	Interment	Period	Offerings	Shell	Pottery	Location	Orientation	
07-01	6-7 years	Juvenile	Single	Secondary	Bundled	Early Nohalk'ax		2	2	0	Private	Unobservable
07-02	Young-Middle Adult	Indeterminate	Single	Primary	Extended, Supine	Early Nohalk'ax		2	0	2	Private	Unobservable
12-02	Young Adult	Male	Multiple	Primary	Flexed	Early Nohalk'ax		3	2	1	Private	Unobservable
12-04	Middle Adult	Male	Multiple	Primary	Extended, Supine	Early Nohalk'ax		1	0	1	Private	Unobservable
13-01	Un-aged Adult	Indeterminate	Single	Secondary	Bundled	Early Nohalk'ax		1	0	1	Public	Unobservable
13-02	Young Adult	Male	Multiple	Primary	Extended, Supine	Early Nohalk'ax		1	0	1	Public	Unobservable
13-03a	8-10 years	Juvenile	Multiple	Secondary	Bundled	Early Nohalk'ax		1	0	1	Private	Unobservable
13-03b	Young Adult	Male	Multiple	Secondary	Bundled	Early Nohalk'ax		1	0	1	Private	Unobservable
13-04	8-10 years	Juvenile	Multiple	Secondary	In Vessel	Early Nohalk'ax		1	0	1	Public	Unobservable
14-01	Un-aged Adult	Probable Male	Single	Primary	Extended, Supine	Early Witsk'ax		1	0	1	Private	North to South
14-02	Un-aged Adult	Probable Male	Single	Primary	Extended, Supine	Early Witsk'ax		3	1	1	Private	North to South
14-03	Un-aged Adult	Probable Male	Single	Primary	Extended, Supine	Early Witsk'ax		4	2	2	Private	North to South
14-04	Middle Adult	Probable Male	Single	Primary	Extended, Supine	Early Witsk'ax		3	0	2	Private	North to South
14-07	Middle Adult	Indeterminate	Single	Primary	Extended, Supine	Early Witsk'ax		2	0	2	Private	South to North
14-08	Middle Adult	Probable Male	Single	Primary	Extended, Supine	Late Nohalk'ax		4	0	3	Private	East to West
15-01	Young Adult	Probable Male	Multiple	Secondary	Disarticulated	Early Witsk'ax		1	0	1	Public	Unobservable
15-02	Un-aged Adult	Indeterminate	Multiple	Secondary	Disarticulated	Early Witsk'ax		0	0	0	Public	Unobservable
16-01	Young Adult	Probable Male	Single	Primary	Flexed	Late Witsk'ax		9	0	1	Private	Unobservable
16-03	Un-aged Adult	Indeterminate	Multiple	Primary	Seated	Early Witsk'ax		1	0	1	Private	Northwest
16-04	4-6 years	Juvenile	Multiple	Primary	Seated	Early Witsk'ax		0	0	0	Private	Northwest
16-05	Un-aged Adult	Indeterminate	Single	Primary	Unknown	Early Witsk'ax		0	0	0	Private	Unobservable
16-06	Middle Adult	Indeterminate	Multiple	Secondary	Bundled	Late Witsk'ax		1	0	1	Private	Unobservable
16-07a	Middle Adult	Indeterminate	Multiple	Secondary	In Vessel	Early Witsk'ax		1	0	1	Private	Unobservable
16-07b	3-4 years	Juvenile	Multiple	Secondary	In Vessel	Early Witsk'ax		1	0	1	Private	Unobservable
16-08	Un-aged Adult	Probable Male	Multiple	Primary	Flexed	Late Witsk'ax		2	0	2	Private	South
16-09	Middle Adult	Probable Female	Multiple	Primary	Seated	Early Witsk'ax		0	0	0	Private	Unobservable
16-10	Un-aged Adult	Probable Female	Single	Primary	Seated	Early Witsk'ax		1	0	1	Private	South
16-11	4-6 years	Juvenile	Multiple	Secondary	Disarticulated	Early Witsk'ax		1	0	1	Private	Unobservable
16-12	Un-aged Adult	Indeterminate	Single	Secondary	In Vessel	Early Witsk'ax		0	0	0	Private	Unobservable
16-13	5-6 years	Juvenile	Single	Primary	Seated	Early Witsk'ax		1	0	1	Private	Southeast
16-14a	Middle Adult	Indeterminate	Multiple	Primary	Flexed	Early Witsk'ax		2	0	2	Private	Unobservable
16-14b	Un-aged Adult	Probable Female	Multiple	Secondary	In Vessel	Early Witsk'ax		1	0	1	Private	Unobservable
16-15	Un-aged Adult	Probable Male	Single	Primary	Unknown	Early Witsk'ax		1	0	1	Private	Unobservable
16-16	Un-aged Adult	Probable Male	Single	Secondary	Bundled	Early Witsk'ax		0	0	0	Private	Unobservable
16-17	Un-aged Adult	Probable Male	Single	Primary	Flexed	Early Witsk'ax		0	0	0	Private	Unobservable
16-19	4-6 years	Juvenile	Single	Secondary	In Vessel	Early Witsk'ax		1	0	1	Private	Unobservable
16-20	Middle Adult	Indeterminate	Single	Secondary	In Vessel	Early Witsk'ax		2	0	2	Private	Unobservable
16-21	4-6 years	Juvenile	Single	Secondary	Disarticulated	Early Witsk'ax		1	0	1	Private	Unobservable
16-22	Middle Adult	Indeterminate	Single	Secondary	Disarticulated	Early Witsk'ax		4	0	3	Private	Unobservable
16-23	Un-aged Adult	Indeterminate	Single	Secondary	Disarticulated	Early Witsk'ax		0	0	0	Private	Unobservable
16-24	Middle Adult	Female	Single	Primary	Extended, Supine	Early Witsk'ax		1	0	1	Private	East to West

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