

UNIVERSITY OF CALIFORNIA, SAN DIEGO

**Building Power:
Political Dynamics in Cahal Pech, Belize during the Middle Preclassic**

A dissertation submitted in partial satisfaction of the requirements for the
degree Doctor of Philosophy

in

Anthropology

by

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2016

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2016

DEDICATION

A mí papá, Dr. William R. Peniche Osorio

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ACKNOWLEDGMENTS

The completion of this dissertation has been a task in which many people have contributed, directly or indirectly. To acknowledge all these people is a very difficult task. Nevertheless, with the risk of unintentionally omitting some people, I would like to thank those that without their help, I would not have been able to complete my research and this document.

I complete the dissertation through various sources of funding. Most of the excavations were conducted under the auspices of the BVAR project and the Tilden Family Foundation. I also thank the Department of Anthropology and the Institute of International Comparative and Area Studies of UCSD for their support. My graduate studies in the University of California, Sand Diego would have not been possible without the support of the Consejo Nacional de Ciencia y Tecnología (CONACyt) of Mexico.

I would like to thank the members of my dissertation committee. The diverse classes that I took with Dr. Guillermo Algaze, Dr. Thomas Levy, Dr. Elizabeth Newsome and Dr. Eric Van Young and comments given at the beginning of this research helped shape my doctoral investigation. Dr. Geoffrey Braswell, my advisor and the committee chair, deserves a special acknowledgement. Without his encouragement and guidance, I had not come to UCSD to carry out my doctoral studies, conducted my doctoral research in Belize, and therefore, met so many people who have become friends and family. I also thank him for his insightful comments in the first version of this dissertation.

I also thank deeply Dr. Jaime J. Awe, director of the Belize Valley Archaeological Reconnaissance project (BVAR) and professor of the University of Northern Arizona. Without Dr. Awe's support this research would not have been possible. Dr. Awe opened me the doors of the BVAR project and the site of Cahal Pech. Through his talks, Dr. Awe not only taught me about this wonderful site and the Middle Preclassic period in Belize, but I also learned to love both Cahal Pech and Belize, which has become my second home country. I also appreciate all the advice and help provided for Jorge Can to complete the excavations in Plaza B. Through our talks, I learned a lot about architecture of Cahal Pech, excavation methods, and drawing techniques. I am also in debt with the Belizean Institute of Archaeology (IA). I thank Dr. Jaime J. Awe, the previous director of the IA, and Dr. John Morris, the current director of the IA, for granting permission to the BVAR project to excavate in Cahal Pech and allowing me to analyze the materials after the excavations concluded. I also am grateful to the staff of the Cahal Pech Archaeological Reserve for their hospitality and help provided during my stay in the site.

The BVAR staff deserves special mention. Dr. Julie Hogarth, the co-director of the BVAR project, facilitated my beginnings in the project and guided me through the established BVAR rules and procedures. Claire Ebert conducted the XRF analysis of the obsidian artifacts to determine their geological source, provided digital maps of the diverse excavations conducted in Plaza B of Cahal Pech, and facilitated the exportation of the vertebrate faunal collection to be analyzed. Wendy Dorenbusch helped mapping the excavation units with the total station. My gratitude goes to the BVAR students, who made possible the excavations. I also express my sincere gratitude to the Belizean crew

that excavated Plaza B during the various field seasons: Alex Alvarez, Albert Bradley, Carlos Chuc, Noel Olivera, José Alfredo Puc Sr. “Jim,” José Alfredo Puc Jr., “Jimcito,” and Ruben Mendez. Particularly, I thank Dion Towers, John Wright, Manuel Mendez and Julio Iglesias “El Caballo,” for putting up with my impatience and my demands during the excavations. This dissertation would not have been possible without their help, support, enthusiasm, and guidance.

I also thank Martin Welker of Pennsylvania State University for the analysis of the vertebrate faunal collection and for his comments to Chapter 8. I also appreciate the insightful comments to Chapter 5 provided by Lauren Sullivan of University of Massachusetts/Boston. Dr. Terry Powis gracefully provided information about the Middle Preclassic architecture exposed in Pacbitun. I express my deepest appreciation to Lauren Hahn Bussiere, who volunteered to edit the entire document in order to check the grammar. This was a colossal task because the Spanish writing style has been difficult to remove from my mind.

I am deeply in debt with a lot of people in UCSD, who have become important in my academic and personal life. Nikki Gee, the Graduate Coordinator of the Department of Anthropology, has played a fundamental role in my years in UCSD. She has been very patient in answering all the questions and solving all the problems that I had as international graduate student. Dr. Alicia Muñoz, from the Department of Linguistic of UCSD, has been a wonderful boss, teacher, and friend. Her passion for teaching and her leadership have been inspirational in my many years of instructor of Spanish, while her friendship has been unequalled. I thank very much Sarah Baitzel for her help since my

first day in San Diego. Her academic guidance and her unconditional support were fundamental for the completion of this dissertation and getting out of tough situations. I could not ask for a better roommate. Beniamino Volta also deserves special mention. Don Beniamino also provided unequal support and guidance that helped me go through all the years of the doctoral studies. I thank all people who I met in San Diego and have become my family: Misha Miller-Sisson, Raquel Pacheco, Sowparnika Balaswaminathan, Nisha Rajagopal, Josué Pérez Santiago, Jorge Lamboy, Bárbara Zepeda, Rubén Lorenzo, Ricardo Fagoaga, and Miguel Guerrero.

Finally, I would like to acknowledge my family in Merida and Belize. I am grateful to Lilia Fernandez Souza, my academic mother and friend, for her guidance and encouragement. She has endured my doubts and complains. I thank my mom, dad, brother and nephews. There are not words to express all their support and love. I apologize for my absence in the most difficult moments. Manuel Mendez not only played an important role in the completion of the dissertation, but he also has become an important piece of my life. His unconditional support and love have made my life easier and enjoyable. I dedicate this dissertation to all of my family.

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- 2015 Arqueología Patria: Mexican Archaeology and the Nation-Building Process During the Nineteenth Century. In *Constructing Legacies of Mesoamerica: Archaeological Practice and the Politics of Heritage in and Beyond Mexico*, edited by D.S. Anderson, D. J. Clark, and J. H. Anderson, Archaeological Papers of the American Anthropological Association, vol. 25: 19-25.
- 2014 Revealing Architectural Variability at Cahal Pech: Recent Excavations at Plaza B. In *Research Reports in Belizean Archaeology* 11: 205-212. Belmopan, Belize.
- 2012a Los malacates arqueológicos de la Península de Yucatán. *Ancient Mesoamerica* 23:441-459. (H. Hernández Álvarez and N. Peniche May)
- 2012b The Architecture of Power and Sociopolitical Complexity in Northwestern Yucatan during the Preclassic Period. In *The Maya of Ancient Mexico: Reinterpreting the Northern Maya Lowlands*, edited by G.E. Braswell, pp. 65-87. Equinox Press, London.
- 2012c In the Shadow of the Pyramid: Recent Archaeological Investigations at Chichen Itza. In *The Maya of Ancient Mexico: Reinterpreting the Northern Maya*

Lowlands, edited by G.E. Braswell, pp. 229-263. Equinox Press, London. (G.E. Braswell and N. Peniche May)

- 2011a Esferas de actividad en el espacio doméstico del Norte de Yucatán. Un estudio etnoarqueológico. In *Localidad y globalidad en el mundo maya prehispánico e indígena contemporáneo. Estudios de género y espacio*, edited by M.J. Gallegos Góngora and J.A. Hendon, pp. 167-178. Instituto Nacional de Antropología e Historia, D.F., Mexico. (L. Fernandez Souza and N. Peniche May)
- 2011b Arqueología en el reino de la Calavera de Cristal: Excavaciones recientes en Lubaantun y otras capitales reales de Belice meridional. In *Simposio de Investigaciones Arqueológicas en Guatemala, 2010*, edited by B. Arroyo, L. Paiz, and A. Lucia, pp. 1231-1243. Museo Nacional de Arqueología y Etnología, Guatemala (G.E. Braswell, N. Peniche May, M.R. Pitcavage and K.L. Hagerman)
- 2011c Revisiting the Kingdom of the Crystal Skull: New Investigations at Lubaantun. In *Research Reports in Belizean Archaeology 8*: 115-126. Belmopan, Belize. (G.E. Braswell, N. Peniche May, M.R. Pitcavage and K.L. Hagerman)
- 2010a Género y estatus en la manufactura del papel: Los maceradores arqueológicos del norte de Yucatán. In *Identidades y cultura material en la región maya*, edited by H. Hernández Álvarez and M.N. Pool Cab, pp- 31-45. Universidad Autónoma de Yucatán, México.
- 2010b Las industrias de sílex del norte de Yucatán. Una visión regional. En *Vida Cotidiana de los Mayas*, edited by R. Cobos and L. Fernández Souza. Universidad Autónoma de Yucatán, Mexico, Unknown pages.
- 2009 La función de un edificio preclásico: La Estructura 1714 de Xamán Susulá. In *Los Investigadores de la Cultura Maya 17*, pp. 253-264. Universidad Autónoma de Campeche. (N. Peniche May, M. Rodríguez Pérez and T. Ceballos Gallareta)
- 2008 Los malacates arqueológicos de la Península de Yucatán: Una propuesta de análisis” In *Los Investigadores de la Cultura Maya 16*, pp. 1-14. Universidad Autónoma de Campeche, Campeche. (H. Hernandez Alvarez and N. Peniche May)

- 2006 Las industrias líticas talladas en la costa Norte de Campeche: Una perspectiva regional. In *Los Investigadores de la Cultura Maya* 14, pp. 147-154. Universidad Autónoma de Campeche, Campeche. (N. Peniche May, C. Góngora and A. Inurreta Díaz)
- 2005 Las columnatas de Uaymil: Su función durante el Clásico Terminal. In *Los Investigadores de la Cultura Maya* 13, pp. 245-253. Universidad Autónoma de Campeche, Campeche. (R. Cobos, L. Fernández Souza and N. Peniche May)
- 2004a Surgimiento y desarrollo arquitectónico en el norooccidente de la Península de Yucatán a inicios del Clásico. *Temas Antropológicos* 26: 265-284. (N. Peniche May and L. Fernández Souza).
- 2004b En la búsqueda de actores sociales: Los artefactos líticos de Sihó, Yucatán. In *XVII Simposio de Investigaciones Arqueológicas en Guatemala 2003*, edited by J.P. Laporte, B. Arroyo, H. Escobedo and H. Mejia, pp. 93-112. Museo Nacional de Arqueología y Etnología, Guatemala (N. Peniche May and L. Fernández Souza).

ABSTRACT OF THE DISSERTATION

Building Power: Political Dynamics in Cahal Pech, Belize during the Middle Preclassic

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How leaders persuade or coerce others to accept subordinate status and how social inequality becomes institutionalized are topics of persistent interest among social scientists concerned with early social complexity. In order to approach these topics, my research builds on the dual-processual model developed by Blanton and colleagues who distinguish two contrasting strategies of social control, network and corporate. In addition, I go further and explore the material correlates of these contrasting power strategies. I argue that a comparative study of architecture, associated activities, and the

distribution of artifacts is needed to study the emergence and development of Maya chiefdoms in Belize and beyond.

Therefore, in my dissertation, I assess the range of power strategies employed by leaders and chiefly elites at Cahal Pech, Belize to obtain, enhance and legitimize their power over others throughout the Middle Preclassic period (1100-350 B.C.). The Middle Preclassic presents a crucial time period for the rising and institutionalization of social inequalities in the Maya lowlands. Cahal Pech is one of the few sites in this area of Mesoamerica that offers the opportunity to document long trajectories of social change. This Maya center has a lengthy, continuous, and well-documented occupation spanning approximately two thousand years (1100/1000 B.C. - A.D. 1000).

As my dissertation reveals, social differentiation arose at Cahal Pech during the second part of the Cunil phase (1100-900 B.C.) when valuable resources were already becoming restricted in their use. The transition between egalitarian and chiefdom political formations occurred at some moment during the early facet of the Kanluk phase (900-600 B.C.). At that time, ranking developed from the manipulation and integration of economic and ideological sources of power. Chiefdom political formation developed further in the second part of the late facet of the Kanluk phase (600-300 B.C.), when the elites extended their social control over more resources and towards the periphery of the site. As my dissertation shows, many of the political and economic dynamics associated with the Late Preclassic and Classic periods in the Maya lowlands were already in place in regions that would later be considered peripheral, including western Belize.

INTRODUCTION

How leaders persuade or coerce others to accept subordinate status is critical to our understanding of why complex societies evolved. Equally important is the question of how social inequality becomes institutionalized—meaning inheritable and socially reproducible—and grows in previously egalitarian societies. Many social scientists have proposed theories to explain these political processes using either evolutionary typologies or other frameworks (e.g., Blanton et al. 1996; Brumfiel 1994; Earle 2002; Fried 1967; Hayden and Gargett 1990; Marcus and Flannery 1996; Morgan [1877] 1974; Price and Feinman 2010; Service 1962; Steward 1955; White [1959] 2007; Yoffee 1994, 2005). It is very likely that these issues will continue to intrigue us.

I employ the perspective that unequal power relationships are based on differential access to valuable resources (Blanton et al. 1996:2; Earle 1991:5; Foias 2013; Lehman 1969:454; Sewell 1992:9). Valuable resources are those seen as needed and desired for social life, but they are scarce. The scarcity of valuable material resources may be because their production is carried out infrequently, requires intensive labor, or involves specialized technological or ritual knowledge. Material valuable resources also may be made of locally-scarce raw materials. Nonmaterial resources become valuable because their possession is limited to a few. With the emergence of chiefdoms (Carneiro 1981; Fried 1967; Service 1962), the asymmetrical access to valuable resources and, consequently, social inequality became institutionalized. Some, though, have questioned the concept of chiefdom as a typological construct (e.g., Carneiro 1981; Earle 1991; Flannery 1999; Paukekat 2007; Stanish 2004; Yoffee 1994, 2005). Others debate what

the defining attributes of chiefdom are (e.g, Earle 1987; Feinman and Neitzel 1984; Peebles and Kus 1977; Renfrew 1974; Wason 1994). I see the concept of chiefdom as a heuristically useful tool. Chiefdoms are political formations characterized by social inequality institutionalized in permanent and inheritable leadership with the right to wield power over others (after Earle 1997; Fried 1967; Service 1962).

Scholars also debate about the types of resources that were manipulated by leaders and elites to wield power over others. Some archaeologists have favored material resources (Carneiro 1970, 1981; Clark and Blake 1994; Friedman and Rowlands 1977; McAnany 1995), while others have stressed the importance of symbolic sources of power (Aldenderfer 1993; McAnany 2010; Sullivan 2015). I argue that leaders and elites employed different valuable resources—both material and symbolic—to gain, enhance, and legitimize power over others (Blanton et al. 1996; Earle 1997; Foias 2013). The nature of the political economy of societies varies significantly depending on the power strategies that actors use to access and control valuable resources to obtain, enhance, and legitimize unequal power relationships. I believe that social change is not unidirectional, but that different power-seeking strategies may generate different paths in which social inequalities are created and institutionalized (Drennan 2000:188).

In trying to describe how leaders and elites organize their political economies, Blanton and colleagues (1996) distinguish between two different types of political economic systems: network and corporate. These are two extremes in a continuum of political practices. My research builds on their dual-processual model, an approach that asserts that competition among groups and the strategies that actors implement in their struggle for power and prestige were the dynamic forces that generated social and

political change (Blanton et al. 1996). At the same time, I go further and I explore the material correlates of these contrasting strategies of social control in the emergence and development of Maya chiefdoms in Belize and beyond. My work focuses on analyzing and comparing residences and public architecture in terms of prominence (centrality and visibility), form (construction materials and layout), accessibility, and function, as well as the spatial distribution of valuable artifacts and activities (specialized crafting, participation in long-distance exchange, consumption of prestige goods, ritual performance, feasts, etc.). These tell us about the political dynamics at play during the emergence and institutionalization of social inequality. Following Antonia Foias (2013:20), I understand political dynamics as the constant flux of politics as the consequence of the strategies used by individuals and groups to pursue their agenda. My definition of ‘politics’ refers to the manner in which political actors obtain, maintain, and legitimize their power over others. Politics also includes the political system and encounters with and resistance to the political system by those who do not hold political office or power over (Foias 2013:20).

Architecture is one of the most visible and influential manifestations of social life. In its broadest sense, architecture encompasses all physical alterations of the natural environment (Lawrence and Low 1990). It includes a wide range of built forms, such as temples, tombs, burial places, palaces, dwellings, ballcourts, causeways, monuments, landmarks, patios, courtyards, ambient spaces, terraces, field systems, movable and perishable structures (e.g., scaffolds, arbors, banners, and litters), specific elements of buildings, and spatial subdivisions of structures (Lawrence and Low 1990:454; Webster

1998:6). All these forms provide compelling evidence regarding ancient aesthetics, social organization, economic systems, and, most importantly, political organization.

In Mesoamerica, architecture has been examined to discuss early social complexity during the Early and Middle Preclassic periods (e.g., Blake et al. 2006; Flannery and Marcus 1976; Lesure 1997; Peniche May 2012a; Powis and Cheetham 2007; Rosenswig 2000; Sullivan 2015). In the Maya lowlands, archaeological explorations have recovered remains of Middle Preclassic architecture that have helped us to advance our understanding of early political dynamics (Anderson 2010; Awe 1992; Dahlin 1984; Gallareta Negrón and Ringle 2004; Garber et al. 2004; Hammond 1991; Hansen 1992; Inomata et al. 2015; McAnany and Lopez Varela 1999; Peniche May 2012a; Ringle and Andrews V 1990; Robles Castellanos et al. 2006). These investigations have established that chiefdom-level societies were present in the Maya lowlands during the second part of the Middle Preclassic. Nonetheless, the Middle Preclassic period still remains one of the most enigmatic and controversial eras in the Maya lowlands history, particularly regarding its political dynamics.

The lack of understanding of Middle Preclassic political dynamics is due in part to the fact that architectural evidence is sparse in comparison to later periods. The reason for this is that few research projects focus on these occupations because Middle Preclassic contexts are deeply buried. This creates logistical and budgetary problems for investigating those buried deposits (Garber et al. 2004). When Middle Preclassic deposits are exposed, they are usually located in the architectural core of a settlement, which gives a biased perspective of the associated material culture. Most importantly, few of the sites investigated possess material evidence of the earliest phases of occupation in the Maya

lowlands dating back to 1000 B.C. or earlier (Ebert 2016; Healy and Awe 1995; Inomata et al. 2015). In fact, most Middle Preclassic settlements were occupied during the late Middle Preclassic (600-300 B.C.), with few sites showing evidence of occupation during the early Middle Preclassic. There also are problems with radiocarbon dates for the Middle Preclassic period. These problems make it particularly difficult to study the mechanisms that led to the emergence and institutionalization of social inequality in the Maya lowlands.

The power-seeking strategies used by leaders and elites in early complex Maya societies can be investigated at the Precolombian Maya center of Cahal Pech, Belize. Cahal Pech is one of the few sites in the Maya lowlands with a lengthy, continuous, and well-documented occupation spanning approximately two thousand years (1100/1000 B.C. - A.D. 1000). It therefore offers the opportunity to document long trajectories of social change—from egalitarian to state society, including the crucial transition of the chiefdom. As in other parts of the Maya lowlands, it has been hypothesized that chiefdoms arose in the Belize Valley at some point during the Middle Preclassic (Ball and Tascheck 2003), a period comprised by the Cunil (1100/1000-900 B.C) and Kanluk ceramic phases (900-350 B.C.).

My research aims to clarify the nature of the political dynamics of the Cahal Pech polity during the Cunil phase and the two facets of the Kanluk phase in order to understand the processes that led to the emergence, institutionalization, and consolidation of social inequality. My main hypothesis is that social inequality was institutionalized in Cahal Pech during the early facet of the Kanluk phase (900-600 B.C.) when the political actors living in the southern area of Plaza B manipulated and integrated both material and

symbolic valuable resources to wield power over others using a network system to organize their political economy. The unequal power relationships were enhanced during the late facet (600-350 B.C.). Consequently, I aim to determine (1) what range of valued resources and what kind of power-seeking strategies that were employed by the political actors of Cahal Pech to acquire, enhance, and legitimize their power over others; (2) how the selection of these mechanisms of social control changed during the course of the Cunil and Kanluk phases, and (3) how the political actors organized their political economy over time. I argue that a comparative study of architecture in terms of its prominence, accessibility, form, function, and associated activities is needed, as well as a comparative study of artifacts and their distributions.

The almost 30 years of exploration in the acropolis and periphery of Cahal Pech have yielded a rich dataset of Middle Preclassic architecture and artifacts (Awe 1992; Cheetham 1996; 2004; Garber et al. 2005, 2006, 2007, 2008, 2009, 2010; Iannone 1996; Lee 1996; Lee and Awe 1995; Powis 1996; Powis and Hohmann 1995). In spite of this, in 2010, representative data from the site core were still insufficient for the purpose of comparing different types of social spaces that could allow the successful assessment of power dynamics. In order to obtain a representative architectural and artifact sample from the site core, from 2011 to 2013 and under the auspices of the Belize Valley Archaeological Reconnaissance project (BVAR), I conducted large block excavations in the southwestern section of Plaza B (hereafter SW Plaza B), the earliest known locus of architectural construction of the site.

There are some problems with the Middle Preclassic datasets from the acropolis and periphery that need to be considered when carrying out comparative analysis. First of

all, the total area of exposed architecture and the size of artifact samples vary from deposit to deposit, as they have been excavated following different methodologies (e.g., trenches, test pits, extensive and horizontal excavations) chosen based on the particular objectives of the explorations. Added to this, there are differences in the quality of information mentioned in the archaeological reports, particularly with regard to the forms of buildings and the types and amounts of recovered artifacts. For instance, the quantities of ceramic fragments recovered in some contexts are not mentioned. This makes it impossible to calculate relative frequencies in order to compare temporal and spatial distribution of artifacts. Moreover, some buildings were found incomplete during the excavations, due to the ancient custom of dismantling the structures before re-building. This practice makes it impossible to determine the dimensions and other morphological characteristics of the structures needed to assess the amount of labor invested during their construction. Despite these difficulties, the comparison of the available data provides clues about the differences in access to resources among people who occupied different social spaces of Cahal Pech during the Cunil and Kanluk phases.

Besides these issues, most of the artifacts recovered during my excavations come from secondary contexts (e.g., construction fill and middens). These locations of discard do not necessarily represent specific original use contexts, which prevents the identification of activity areas. Despite this, I believe that secondary contexts indicate the general locations where artifacts may have been used and who had access to them (Halperin 2014). Thus, artifacts from secondary contexts still offer insights into the different activities carried out in or near the explored areas and, as a result, the nature of the social spaces.

I organize the dissertation in such a way to facilitate the analysis and comparison of architecture based on its formal and functional attributes in order to assess the range of power strategies used by leaders and elites in Cahal Pech during the Cunil and Kanluk phases. In Chapter 1, I discuss the theoretical framework, starting with the various approaches to social complexity in anthropological archaeology, particularly as regarding the emergence and development of chiefdom societies. Likewise, I explain the political economic systems distinguished in the dual-processual model (Blanton et al. 1996), giving particular emphasis to the explanation of the sources of power that leaders and elites could use as mechanisms of social control, as well as the concepts of power and chiefdoms. Finally, I outline the methodology I employ to assess power dynamics. My methodology relies heavily on the analysis of architecture as it is regarded as a powerful tool to study power relationships, although it also takes into consideration the artefactual inventory as it informs us about the function of the different constructions and differential access to some goods.

In Chapter 2, I describe the Middle Preclassic data uncovered across the Maya lowlands. First, I outline the Middle Preclassic history of the Maya lowlands, with particular emphasis on the different pre-Mamom and Mamom ceramic phases identified across the lowlands. Second, I describe the architecture uncovered in the different regions of the lowlands (i.e., northern Belize, the Petén, the Pasion River region and the north) where Mamom and Mamom-like pottery were used during the second part of the Middle Preclassic. Third, I review the history and architectural data of the Belize Valley, a region where people bore ceramic traditions that differed from the other lowland regions. This section examines some of the background to the question concerning the nature of the

prevailing power dynamics in the region and why Cahal Pech is a unique place to study these issues.

In Chapter 3, I review the historical background of Cahal Pech. I begin with a discussion of the site itself and some of the previous work conducted there. Nearly 30 years of research have provided a significant dataset of architectural and artifactual evidence from the center and the periphery, which makes it possible to look into the construction history of the settlement from the beginning of the Middle Preclassic to its complete abandonment in the Terminal Classic period. This chapter focuses on the first two phases—Cunil and Kanluk—that correspond to the Middle Preclassic period. My detailed assessment of the architecture constitutes the comparative framework of the dissertation. On the other hand, I make clear that, although much is known about the site during the Cunil and Kanluk phases, there is still a need to understand the power strategies used by leaders and elites to obtain, maintain, and legitimize their social control. Finally, I discuss the hypothesis and social implications that guide the current research.

Chapter 4 constitutes the backbone of my work. First, I present a brief description of the methods employed to excavate SW Plaza B, as well as an explanation of why I choose to excavate this particular area. I proceed with a detailed presentation of each construction phase uncovered beneath SW Plaza B. The construction phases are classified in three categories based on ceramics phases: Cunil, early-Kanluk, and late Kanluk.

In Chapter 5, I outline the information gathered from the ceramic analysis. I first review the methodology used to analyze the pottery. Following this, I describe the ceramic groups identified in my excavations. Some types have not been recognized in

previous works carried out in the Belize Valley (e.g. Gifford 1976) and these turned out to be important diagnostic types of the early and late facets of the Kanluk phase. Later, I present the frequency of type-varieties and forms of vessels (e.g., jars, bowls, dishes, etc.) of each construction phase. My objective is to establish the relative dates of each building, the temporal distribution of local prestige vessels and foreign pottery, and the classes of vessels associated with each construction phase. My final goal is to establish indicators of the activities carried in the explored area.

In Chapter 6, I discuss the chipped and ground stones recovered in the different construction phases of SW Plaza B. I begin by explaining why lithic goods are important to the study of economic systems and outline the methodologies I employed to analyze the diverse types of lithics. I proceed with a discussion of the technological types identified in the chipped stone assemblage, as well as the origin of the raw materials. Subsequently, I focus on the morphological types recognized in the ground and polished industry, placing emphasis on the possible functions that these types could have served. In both sections, I aim to elucidate the range of production and exchange activities, as well as the conspicuous consumption of certain goods. I then compare, when possible, this information with data from the architectural core and the periphery to establish differential practice of economic activities during the Cunil and the two facets of the Kanluk phase.

In Chapter 7, I analyze the fired clay artifacts in order to identify economic and ritual activities carried out during each construction phase of SW Plaza B. I first discuss small ceramic artifacts in regard to recycling, craft production, and personal adornment (e.g., pendants, perforated sherd, spindle whorls, and beads). I continue with an

assessment of ceramic figurines, which are usually interpreted as indicators of ritual activities. In both sections, I describe the artifacts and their possible function. Subsequently, I assess the temporal distribution of the various types of ceramic artifacts. Then, I compare them with artifacts recovered elsewhere in the acropolis and the periphery with the goal of identifying differential practice of economic and ritual activities during the Cunil and the Kanluk phases.

In Chapter 8, I discuss the faunal remains from SW Plaza B that date to the Cunil and Kanluk phases. This provides information about consumption practices and, on occasion, about craft production and exchange. First, I explain the methodology I employed to analyze the faunal assemblage. Then, I focus on discussing the vertebrate assemblage recovered in SW Plaza B, as a complete sample and then by construction phase. Later, I compare this data with faunal collections from elsewhere in the acropolis and the periphery. Subsequently, I discuss the invertebrate fauna, first focusing on the riverine resources and later on the marine shells. Comparison of this dataset with other faunal assemblages from Cahal Pech helps identify differential consumption over time and space. Finally, I turn to modified shells and discuss the evidence for shell-ornament production across Cahal Pech.

Chapter 9 consists of my discussion and analysis of the architecture uncovered in each construction phase of SW Plaza B. My methods of analysis detailed in Chapter 1 are brought to bear on the architecture and portable artifact dataset. My analysis focuses on the form and prominence of the architecture and the assessment of the range of activities associated with it. Following a chronological order, the architecture from SW Plaza B is contrasted with architecture from elsewhere in the acropolis and the periphery of the site.

This comparison illustrates what power strategies were employed by political actors of Cahal Pech over the time.

Finally, I present my conclusions. Although social inequality arose at Cahal Pech during the second part of the Cunil phase, the transition between egalitarian and chiefdom political formations occurred at some moment during the early facet of the Kanluk phase. At that time, ranking developed from the manipulation and integration of economic and ideological sources of power. Chiefdom political organization developed further in the second part of the late facet of the Kanluk phase, when the elites extended their social control towards the periphery of the site. Both Cunil leaders and Kanluk elites organized their political economy following a network system. Nevertheless, they also implemented corporate strategies to attract people living in the outskirts of the original settlement as early as the first facet of the Kanluk phase.

My dissertation seeks to contribute to ongoing discussions about the emergence and development of social complexity, particularly of the development of chiefdoms using data from the Maya site of Cahal Pech. Understanding the political economic systems of Cahal Pech throughout the Middle Preclassic helps us gain insight into the power dynamics that led to the rise and institutionalization of social inequality in the Belize Valley.

CHAPTER 1.

UNDERSTANDING EARLY COMPLEX SOCIETIES: THE POLITICAL ECONOMY OF CHIEFDOMS AND THE MATERIALIZATION OF POWER

1.1 INTRODUCTION

A long-standing topic of research in anthropology and in the social sciences in general is that of the origins and development of complex societies. Accordingly, a myriad of theoretical positions have been postulated from the nineteenth century to the present in an attempt of explaining how and why social and political change occurred (e.g., Brumfiel 1994; Carneiro 1981; Fried 1967; Johnson 1982; Morgan [1877] 1974; Price and Feinman 2010; Service 1962; Steward 1955; White [1959] 2007). In this chapter, I aim to outline the main theories use to explain the evolution of social complexity, particularly regarding the emergence and development of chiefdoms. Special emphasis is given to the discussion of the dual-processual model on which this research builds (Blanton et al. 1996). Finally, I discuss the methodology I employ to assess political dynamics.

1.2 APPROACHES TO THE STUDY OF SOCIAL COMPLEXITY

1.2.1 Understanding Social Complexity

Social complexity can be broken down into three interrelated variables: the centralization of decision-making, and the degree of social heterogeneity and economic diversification and the degree of social inequality. The centralization of decision-making means the number of decision-making levels present in any political entity, with a larger

number of levels correlating with more coherent and complex administration (Carneiro 2003; Flannery 1972; Nelson 1995; Steponaitis 1981). The degree of social heterogeneity and economic diversification refers to specialization of the population in different socio-economic roles (e.g., military, artisan, and farmer) (McGuire 1983:93). Finally, the degree of social inequality denotes differential access to valuable resources (Aldenderfer 1993; Carneiro 2003; McGuire 1983; Nelson 1995; Price and Feinman 2010).

In archaeological studies, the centralization of decision-making processes has shown to be a good proxy for the level of political complexity (e.g., Isbell and Schreiber 1978; Marcus 2012; Wright 1994), but is best assessed on a regional scale. In contrast, social inequality and socioeconomic heterogeneity and economic diversification can be measured at a local scale, making them suitable for excavation-based research at a single site. I emphasize social inequality because it is the organizing principle of hierarchical structures or complex societies, like chiefdoms (Price and Feinman 2010:2).

The study of increasing social complexity started in the nineteenth century when anthropologists gathered and compared empirical records on largely synchronic cases to find large-scale regularities and establish a uniform and progressive pathway of cultural change (Feinman 2000; Kingsnorth 1993). Since then, anthropologists have developed several theories to account for qualitative social and political change. These theories have followed two main tendencies. On the one hand, some social scientists argue that it is possible to study social complexity as stages organized in typologies (e.g., Earle 2002; Fried 1967; Morgan [1877] 1974; Service 1962; White [1959] 2007). On the other hand, there are some perspectives that reject the use of evolutionary typologies claiming that: (1) stages are merely descriptive categories that do not explain the transitions between

phases; (2) evolutionary typologies imply the idea of progress, meaning that each stage is better than the previous one; and (3) social change is a continuous and complex phenomenon and, therefore, we need to emphasize processes rather than essential categories (McGuire 1983; Pauketat 2007; Yoffee 1994, 2005).

Most recently, supporters of neo-evolutionary typologies have argued that some criticisms are correct but they apply better to nineteenth and mid-twentieth century theories than they do to present practice (Feinman 2000:4). Current typological perspectives, in fact, do not necessarily argue that any form of political formation is intrinsically better, more efficient or more advanced than any other one (Feinman 2000:7). Rather only describing different stages, they offer explanations of how and why social change occurs. In addition, current neo-evolutionary typologies do not necessarily postulate that social change is unidirectional or unilineal, but favor multiple lines of social change and even accept the idea of cycling as a viable adaptive strategy (e.g., Anderson 1994; Earle 1997).

Elman R. Service (1962, 1975) and Morton Fried (1967) were the major representatives of the first generation of neo-evolutionism revival, proposing sequences of “cultural types” (after Steward 1955) in which societies become more complex in each subsequent stage. Their models, however, contain the clearest anthropological statements of major opposing theoretical positions on the origins and institutionalization of social inequality, and are still in use today (Haas 1982:10).

1.2.2 Managerial/Functionalist and Conflict/Political Theoretical Positions

In his evolutionary model of forms social organization¹, Service (1962, 1975) posited that social inequality emerges when there is a need for managers who coordinate and regulate the different parts of complex societies and deal with critical problems. In Service's (1962, 1975) model, the rise of elites and institutionalized social inequality corresponds with the emergence of chiefdom societies.

Service (1962:135) defined chiefdoms as kin-based societies that achieve social integration through redistribution, an economic practice coordinated by a permanent, centralized, and inheritable agency that also fulfills social, religious, and political functions. From Service's (1962) perspective, this chiefly office was created because there is a need to organize redistribution, local specialization, and regional exchange—economic practices encouraged by unevenly distributed resources and diverse biotic zones. Initially, the individual who is ascendant in community service fulfills the office of redistributor. As specialization and redistribution become integral parts of socioeconomic organization, the office of redistributor starts to confer very high rank. Subsequently, because chiefdoms are kin-based societies, people become ranked above others according to their genealogical nearness to the chief. It is at this point when chieftainship becomes a permanent office in the social structure and social inequality becomes institutionalized in society.

¹ According to Service (1962), social organization is composed of social structure and status. Social structure is defined as the component groups of a society and the configuration of their arrangement, while the network of statuses designates “named social positions which are assigned conventional attributes and roles that regulate or influence the conduct of interpersonal relations” (Service 1962:11). From Service's (1962) perspective, the evolution of a culture is measured by changes in the social structure.

In contrast to Service (1962, 1975), Fried (1967) postulates that elites arise as coercive mechanisms to resolve intra-societal conflicts that result from unequal economic relationships and the struggle for valuable resources. Fried (1967:21) focuses his evolutionary typology on the political organization, defined as those sections of social organization that specifically relate to the individuals or groups that administer the affairs of public policy. In this typology, the emergence of social inequality occurs when ranked and stratified societies first appear.

Ranked societies are characterized by having fewer positions of valued status than people capable of filling them because, unlike egalitarian societies, there are “means for limiting the number of people that [can] exercise power” (Fried 1967:52). The emergence of ranking occurs when increasing agricultural production allows the growth of populations and permits the practice of redistribution. Like in Service’s (1962) chiefdom societies, redistribution functions as mechanism of economic integration and plays a fundamental role in the ranking of people above others. Nevertheless, authority based on prestige obtained through redistribution does not constitute a firm basis for political power, as Service (1962) argued for chiefdoms. In order to constitute a firm basis for political power, authority needs to expand to other aspects of the social life, such as religion. I will return to this point.

When status differences start being associated with economic differences, ranking becomes stratification. In a stratified society, members of the same and equivalent age have differential rights of access to the basic resources needed to sustain life (Fried 1967:52). Restricted access to basic resources can be achieved in two general ways. First, restricted access may come about when some portion of the population monopolizes

control over certain limited resources through organizational, geographical, or physical means. Second, restricted access may result when some portion of the population specializes in an occupation other than subsistence production and depends on another group to provide subsistence resources. This process leads to the complex division of labor.

Even though they are different concepts, some archaeologists have employed Fried's (1967) ranked society as synonym of chiefdom (e.g., Feinman and Neitzel 1984; Flannery 1994), perhaps because those categories represent cultural types in which social inequality is institutionalized. Other archaeologists have used the concept of stratified societies to refer to complex chiefdoms, while ranked societies are correlated to simple chiefdoms (e.g., Earle 1991). In archaeology, however, Fried's (1967) typology has never caught on as much as Service's (1962) band-tribe-chiefdom-state sequence and, as consequence, the concept of chiefdom has continued to be used by archaeologists to refer to societies with institutionalized social inequality. Nonetheless, chiefdoms are no longer seen as redistributive societies, as I explain below. Following Fried's (1967) interest in political organization and Oberg's (1959) original definition of chiefdom, the category of chiefdom has been redefined as a political form (e.g., Carneiro 1981:37; Earle 1987; Payne 2002; Spencer 1990; Wright 1984), which prompts us to focus on power and its dynamics.

1.2.3 Power

Considerations of power are extensive in the social sciences but, at the most basic level, issues about this conceptual tool revolve around its definition (e.g., Foucault 1970;

Giddens 1984; Lehman 1969; Lenski 1966; Mann 1986; Miller and Tilley 1984; Weber 1964; Wolf 1990). My definition of power contains two related facets that can exist simultaneously: “power to” and “power over” (Miller and Tilley 1984:5). “Power to” denotes the inherent ability of all actors to modify or control their social and spatial environment with the goal of pursuing their wills (Giddens 1984; Mann 1986; Miller and Tilley 1984). As such, it is considered an integral and recursive element in all social relationships and it is logically disconnected from coercion and asymmetrical forms of social control.

Conversely, “power over” denotes the ability of some actors to transform their social environment in order to achieve their goals, by harnessing labor and resources from others through mechanisms of social control, such as persuasion and coercion (Miller and Tilley 1984; see Haas 1982: 157; Kurtz 2001; Mann 1986; Weber 1964). “Power over” is commonly accessed through the successful control and manipulation of asymmetrically distributed valuable resources, material and immaterial, which are needed and desired for social life (Giddens 1984; Lehman 1969; Miller and Tilley 1984; Sewell 1992). For this reason, “power over” is always asymmetrically distributed in the relationships among people, which means that only a sector of the population—called here “leaders”—have the capacity to influence the behavior of others and control their actions. Nevertheless, not all leaders have the right to wield “power over” or authority².

² I follow the premise that all ‘egalitarian’ societies have some form of social inequality based on age, gender, kinship generation, skills, and reproductive success (Aldenderfer 1993; Feinman 1995). In some of these egalitarian societies, actors (named “big-men” by Sahlins 1963; “aggrandizers” by Clark and Blake 1994; “accumulators” by Hayden and Gargett 1990) achieve to have preferential access to some valuable resources and wield “power over”. Nevertheless, their capacity to influence behaviors and control actions is mainly founded on charisma and personal skills rather than ideology. Because of this, their leadership cannot be permanent, inherited, and generalized (Payne 2002:192).

Authority or legitimate right to wield “power over” and acceptance of that right by subjects is a prerogative of leaders of complex societies (here called “elites”), because they are able to create and integrate economic and symbolic power bases (Payne 2002:192).

1.2.4 Chiefdoms

The category of chiefdom was given formal meaning by Oberg (1955:484) to designate multi-village territorial polities in contemporaneous South American societies, which were governed by a paramount chief with judicial powers to settle disputes and to requisition men for war. Steward and Faron (1959) took up the idea in their ethnological study of South America, emphasizing the variability manifest in these societies and claiming that chiefdoms represent a range of social forms. These incorporate a considerable diversity in structure, operation, and developmental trajectory. Some years later, Service (1962) redefined the concept, making it an economic and integrative category in which redistribution is its *sine qua non* and permanent and inheritable inequality is its main trait. In this way, Service introduces one of the most important and controversial concepts in anthropological archaeology.

Service’s (1962, 1975) evolutionary taxon of chiefdom has been the subject of a myriad of criticisms (e.g., Pauketat 2007; Spencer 1987; Yoffee 1994, 2005). Archaeologists have debated the correctness of assigning societies to taxonomic types that measure them in a progression of hierarchical complexity (Blanton et al. 1996). Norman Yoffee (1994:73; Yoffee 2005) has argued that models derived from ethnographic data, such as the category of chiefdom, cannot be used to understand the

archaeological record. Consequently, Yoffee (1994:73) has completely rejected the existence of chiefdoms in ancient times. Archaeologists also have stated that Service's (1962, 1975) category does not recognize the organizational diversity and the particular history of the societies that this concept includes (Feinman and Neitzel 1984; Pauketat 2007; Yoffee 1994, 2005).

Despite these critiques, the category of chiefdom continues to be used in the archaeological literature because it is a useful concept and allows the study and comparison of a variety of societies with institutionalized social inequality (e.g. Earle 1991; Drennan 1991; Marcus 2008). The concept of chiefdom has been used to study political units over the world including societies in Brazil (Spencer 1993), Denmark (Earle 1991), Polynesia (Kirch 1991; 2012), the Maya Lowlands (Ball and Taschek 1993; Peniche May 2012a), Mississippi (Payne 2002; Steponaitis 1991), the Near East (Flannery 1999; Wright 1994), the Philippines (Junker 1999), northern South America (Drennan 1991), the Valley of Oaxaca (Drennan 1991; Marcus and Flannery 1996), the Southwestern US Coast (Gamble et al. 2002), California Coast (Ames 1981), and the US Southeast (Anderson 1994).

Because the centrality of redistribution has been challenged by several archaeologists (e.g., Earle 1987, 1997:17; Feinman and Neitzel 1984; Helms 1979; Johnson and Earle 1987; Peebles and Kuss 1977), Service's (1962) definition is no longer used. As a result, archaeologists influenced by Fried's (1967) interest in political organization have redefined the concept in political terms. Consequently, as it was mentioned above, the chiefdom is now viewed as a political form (e.g., Carneiro 1981; Earle 1997; Junker 1999; Peeble and Kus 1977).

Current definitions of chiefdoms as political units vary, depending on whether one focuses on the regional or local scale. From a regional perspective, chiefdoms are seen as political formations that have a regional level of political integration and a centralized decision-making hierarchy encompassing multiple but coordinated levels of authority (Carneiro 1981, 2003; Johnson and Earle 1987; Wright 1984, 1994). When seen from a local perspective, as I do here, chiefdoms are defined as political units in which social inequalities are institutionalized and, as a consequence, leadership is permanent and inheritable (after Earle 1991; Fried 1967; Service 1962). In chiefdoms, the society is divided into elites and non-elites. Chiefly elites have preferential access to and control of a range of valuable resources through which they acquire the right to wield “power over:” subjugate, influence, and control people’s actions. Because leaders hold authority, which exists independent of individuals, chiefly leadership can be inherited and generalized to several social arenas (Payne 2002:192). Leadership in chiefdoms is associated with a permanent office. Rights to the chiefly office and social status are commonly determined by one’s place in the kinship system or the “genealogical distance from a senior line descent” (Earle 1997:5).

Chiefdoms are different from states. Leadership in chiefdoms lacks specialized and functionally differentiated leadership roles (Earle 1997; Junker 1999; Wright 1994). A chief may carry out a range of functions classified as redistributive (distribution of goods, storage, the organization of feasts), ideological (sponsoring of ceremonies, acting as guardians of public morality), administrative (leading public meetings, appointing officials, supervising community tasks), judicial (adjudication of disputes, punishment of offenders), subsistence, inter-village (controlling trade, making declarations of war,

building alliances, hosting guests) and the storage of information concerning territorial boundaries and genealogical histories (Feinman and Neitzel 1984). Chiefs lack an independent physical power base represented by a specialized police force, standing army, and codified law (Junker 1999; see also Fried 1967; Haas 1982; Service 1962). Consequently, chiefly power structures are weak. For all these reasons, chiefdoms are unstable political systems subject to oscillatory cycles of expansion and fragmentation (Anderson 1994; Earle 1991; Junker 1999; Marcus 1993; Redmond and Spencer 2012; Wright 1984).

Chiefdoms are not a monolithic category. Chiefdoms incorporate a range of societies that are highly varied in terms of economic organization, political economy, kinship, demography, environment, and other aspects. As a result of this variability, different typologies of chiefdoms have been proposed, depending on what variable is taken as the most important (e.g., Carneiro 1981; Feinman and Neitzel 1984; Flannery 1999; Goldman 1970; Johnson and Earle 1987; Renfrew 1974; Sahlins 1958; Steponaitis 1978; Steward and Faron 1959; Wright 1984, 1994). In this research, I argue that chiefdoms vary according to the political economic strategies that elites use to obtain, maintain, and enhance “power over” (Blanton et al. 1996).

1.2.5 The Emergence of Chiefdom Political Forms: Prime Movers

Because the emergence of institutionalized social inequality can no longer be viewed as the product of redistribution, social scientists have proposed several mechanisms to account for the rise of elites, social inequality, and chiefdoms in diverse areas of the world. For instance, some frameworks postulate that elites emerged to solve

managerial problems generated by the regional and long-distance exchange of basic resources. For Henry Wright and Gregory Johnson (1975; see Haas 1982), the regional exchange of basic goods is the main mechanism for the emergence of social inequality. According to their model, different communities in southwestern Iran specialize in certain basic goods as response to an increasing demand by nomadic herders who migrated to the region. An administrative hierarchy emerges to solve managerial problems caused by the regional exchange of those specialized basic goods. Although Wright and Johnson's argument is useful in explaining the specific case of southwestern Iran, it does not specify the conditions under which regional exchange and administrative hierarchy emerged and does not explain the increase in nomadic herding (Haas 1982).

Similarly, Rathje (1971) argues that the first Maya elite emerged in the Petén to organize long-distance exchange and the local distribution of critical resources (e.g., salt, obsidian, and stone for grinding tools). Resources are considered critical when they are necessary for the maintenance of life or the preservation of a specific lifeway and for which they are not alternatives (Barret 2004). By controlling the organization of exchange, elites gained decisive control over their population. In exchange of critical resources from the buffer zones, the elites provided cult ideology, technology, and paraphernalia. Rathje's (1971) model has been criticized because it does not explain the emergence of social inequality in areas like central Mexico that do not lack salt, obsidian or stone for grinding tools (Flannery 1972:407). Moreover, Rathje (1971) does not explain how cult paraphernalia, technology, and ideology gained their value before elites emerged. Most importantly, studies have demonstrated that the premise stating that domestic vital resources were lacking in the lowlands is false. Fieldwork has shown that

basic resources, like igneous or metamorphic stones, existed in the lowlands (Graham 1987; Shafer and Hester 1983). In addition, few resources were critical for basic subsistence since households usually managed to find locally available resources to meet their everyday needs (Hearth and Fedick 2010; Marcus 1983; McAnany 1991:279). Therefore, long-distance exchange should not be viewed as a means of securing critical resources for subsistence (Drennan 1984a, 1984b; Marcus 1983).

Prestige-good models, in contrast, posit that the emergence of social inequality was associated with control over the distribution and exchange of foreign prestige goods (e.g., Blanton and Feinman 1984; Marcus and Flannery 1996; Wright and Johnson 1975). Prestige goods are those items that may be owned or used only by those of appropriated status (Wason 1994:125). Friedman and Rowlands (1977), for instance, argue that certain items obtained through long-distance exchange acquire value based on socially restricted gift-debt exchanges, usually associated with asymmetric marriage patterns. By controlling those prestige goods and exchange networks, leaders are able to carry out redistributive activities with the goal of acquiring prestige and recruiting followers. Control over followers permits leaders to control the local labor force and enhance their control over wealth. All this creates asymmetrical dependency relationships among various groups, which transforms into relative rank. This model, however, implies the existence of certain social inequalities in the community without explaining their origins.

Carneiro (1970, 1981; see also Webster 1975) also emphasizes conflict over a particular scarce resource: land. Carneiro (1970, 1981) postulates that warfare, alongside specific conditions of demographic pressure and circumscription, is the key mechanism that leads to the emergence of chiefdoms. According to Carneiro (1970, 1981), chiefdoms

emerge when powerful leaders of an increasing population attempt to expand their lands in an environmentally- or socially-circumscribed region by means of warfare. When leaders conquer the surrounding villages and incorporate them into their political unit, chiefdoms emerge. Although Carneiro's (1970, 1981) model is elegant, it only emphasizes how villages lose their autonomy without explaining the rise of social inequality at a local level. Most importantly, data emerging from Peru, Iran, and southeast Asia contradict its principal tenet about circumscription and population growth leading to warfare and conquest (see Haas 1982:135; Junker 1999:336).

McAnany (1995) also points out that conflict over land and other resources is the main force that generates asymmetrical power relations among lineages. She creates the "principle of first occupancy" to describe the process in which the initial occupants of a given territory may laid claims and pass land and resources down to their descendants. At some point, lineages start growing in number causing an unequal distribution of resources and, therefore, asymmetrical power relations. In order to proclaim and ensure their right for the heritable resources, lineage members perform ancestor veneration—the commemoration of dead lineage members who hold a prominent position.

In a different vein, Aldenderfer (1993) claims that ritual was a powerful means by which social inequalities emerge and are institutionalized. Because ritual is the primary mechanism through which social relationships are mediated, ritual power wielders are the group with more possibilities of extending their power to other social arenas. They attempt to do so by manipulating and redefining ritual beliefs and practices. Nevertheless, ritual power-wielders face resistance from individuals through leveling mechanisms, mobility, and social fissioning. Nevertheless, under conditions of circumscription,

individuals are more likely to accept the extension of ritual power extension because the costs of mobility and fissioning as ways of resistance become greater than the costs of acceptance.

Models that emphasize conflict, exchange and ritual have in common that they center on a single mechanism causing the institutionalization of social inequality. Other frameworks have proposed multi-cause models (e.g., Flannery 1972). These models, however, consider that some factors can be more dominant at certain moments. As Service (1968, 1971) has pointed out, there is not a single cause or specific set of causes that impels political evolution. Most importantly, prime mover perspectives do not consider the importance of non-material goods or the social arena in which social change occurs. With an emphasis on institutions, social actors are usually considered as passive in the entire process of political change (Kurtz 2001:150). Despite these criticisms, warfare and exchange perspectives remind us that the control of external resources by a sector of society might have been fundamental for social change.

The role of external resources in social change is taken up in later models influenced by action theory (e.g., Bourdieu 1977; Giddens 1977; Ortner 1984) and political and processual evolution paradigms of political anthropology (e.g., Fried 1967). These archaeological theories attempt to provide an active role to individuals and groups and focus on conflict due to asymmetrical access to resources (Kurtz 2001:151). In contrast to managerial approaches, these models claim that elites do not arise from the need to coordinate activities for the larger social good. Instead, elites are self-servers who take advantage of particular circumstances to satisfy their need for prestige and power (Ames 1995; Clark and Blake 1994; Johnson and Earle 2000; Hayden and Gargett 1990).

Among these theories, the factional competition model (Brumfiel 1994) has been widely applied to explain social change.

1.2.6 Leaders as Self-Servers: Factional Competition and the Emergence of Chiefdoms

Brumfiel (1994:3) posits that factional competition is the force that drives the dynamics of social change (Brumfiel 1994:3). Factions are those structurally and functionally similar groups that compete for resources and positions of prestige (Brumfiel 1994:4). The glue that holds factions together is mutual benefits. Faction leaders employ different pragmatic, advantage-seeking and maximizing strategies, whose selection and consequences depend on historical conditions (Brumfiel 1994).

The construction of coalitions of support and participation in political contests are two complementary processes that are involved in factional competition (Brumfiel 1994:10; Clark and Blake 1994). Coalition building is an essential activity in creating and maintaining power. Locally, leaders use the asymmetrical distribution of gifts and preferred foods to attract followers who are then tied to the leader by debt, creating in this manner social inequality. Asymmetrical exchange also characterizes relations between local elites and the regional paramount chief. In contrast, balanced gift exchange characterizes the relation between allied leaders to establish a pattern of mutual. In political contests, leaders exchange information about the strength of their coalitions and determine who will control contested resources.

The argument presented by Clark and Blake (1994) to explain the transition from tribe to chiefdom represents a variation of the factional competition approach. These

authors argue that the engine that caused the transition from tribe to chiefdoms in lowland Mesoamerica was self-interested competition among ambitious, charismatic, and skillful political actors or “aggrandizers” that contested for prestige, resources, and followers. Aggrandizers employed several strategies to pursue their self-interests, such as the control of exotic goods. Accordingly, aggrandizers strived to control regional exchange networks to obtain external resources, which were used in “generosity acts” and gift-debt relationships to attract and maintain followers. The participation in regional settings also permitted the aggrandizers to operate partially outside the normal sanctions of their local group, in a realm where norms were more ambiguous. This was the political context in which social inequality developed.

Unlike prestige good models mentioned above, Clark and Blake (1994; see also Hayden and Gargett 1990) argue that the emergence of social inequality only occurred when the natural environment provided accessible and productive resources that were relatively immune to normal environmental perturbations. Only when the environment could assure sufficient provisions in normal times, the community could accept the exclusive use of surplus by some individuals in competitive ways and the accumulation of wealth and power by aggrandizers.

Alternatively, Spencer (1993) postulates that the institutionalization of social inequality only occurs when leaders managed to expand and regularize their control over human affairs in dimensions both internal and external to their faction. The critical circumstance that offers this special opportunity is the element of high-risk, such as warfare or fluctuations in the environment that impact agricultural production. Only in these circumstances, ambitious leaders are able to employ several managerial strategies

with the twofold goal of mitigating risks and advancing their power beyond their own faction. For instance, Tehuacán is a region where agricultural production was not possible without irrigation. In order to deal with this problem, ambitious leaders coordinated their followers' labor to construct an irrigation system, which was afterwards under their control. The implementation of this innovative and risky strategy also aimed to expand the faction until encompassing the entire community and, later, other neighboring villages. The external dimension of leadership was achieved when leaders engaged in long-distance exchange networks.

Clark and Blake (1994) and Spencer (1993) have contrasting visions of the circumstances in which social inequality was institutionalized. Nevertheless, these circumstances can be integrated into a model in which political actors employ different power-seeking strategies according to their specific socio-environmental conditions. Different circumstances may produce sequences of developing and institutionalizing social inequalities that take different paths (Drennan 2000:188). The previous theories do not take into account this organizational variability on political formations, variability that has been documented by several studies (e.g., Drennan 1991; Flannery 1999; Renfrew 1974; Rosenswig 2000). In addition, factional competition models do not consider the ideology. The institutionalization of social inequality cannot occur unless ideological conceptions of egalitarian societies encompassing leveling mechanisms to assure an egalitarian ethos are transformed (Aldenderfer 1993; Marcus and Flannery 1994). All these problems are better addressed by the dual-processual model (Blanton et al. 1996).

1.3 THE DUAL-PROCESSUAL THEORY

A theoretical approach that is more useful, in my opinion, in understanding variability in political dynamics is the dual-processual theory proposed by Blanton, Feinman and colleagues (Blanton et al. 1996; Feinman 2001; Feinman et al. 2000). This political behavioral theory of social change is deeply influenced by agency and practice theories (Bourdieu 1977; Giddens 1984; Sewell 1992), the factional competition model (Brumfiel 1994), Lehman's (1969) discussion of different forms of power, and debates on the diversity of political economy diversity (e.g., Drennan 1991; Leach 1954; Renfrew 1974; Strathern 1969, 1978). Previous prime mover explanations also are incorporated in this perspective. Consequently, this theory provides a holistic framework. It goes beyond functionalist / political economy perspective, integrating both perspectives (Feinman 2000). It also links power dynamics to both economic and ideological factors, which are thought to be necessary for the institutionalization of social inequality (Marcus and Flannery 1994).

Based on the previous theoretical background, the dual-processual theory argues that some actors with their own agenda compete to influence the governing institutions of society as they pursue prestige and wealth, and attempt to wield "power over" other individuals (Blanton et al. 1996:2; Lenski 1966:210-211). The competition among factions and groups and the strategies that actors implement as result of this competition are seen as the dynamic forces that generate social change. Because the actions of actors involved in political struggle are always constrained by culture, actors cannot always freely affirm their own agency to pursue their goals (Blanton et al. 1996:2; Bourdieu 1977; Robin 2003:320). Nonetheless, shared cultural patterns can be manipulated by

knowledgeable actors in a diversity of ways to obtain a variety of resources, which enable them to reproduce or contest their social circumstances (Blanton et al. 1996; Bourdieu 1977; Giddens 1984; Robin 2003; Sewell 1992).

For these reasons, knowledgeable and skillful actors are empowered to implement innovative strategies for enhancing their “power over” and preempting other leaders from building a power base (Spencer 1993). In other cases, innovative strategies are responses to opportunities and challenges resulting from changes in recursively interconnected factors (e.g., changes in population density, abundance and availability of resources, exchange networks, etcetera; [Feinman 2010]). Sometimes, new means of grasping power are merely enhancements of old strategies but, in other cases, new strategies to wield “power over” have unintentional and unforeseen outcomes. These unpredicted outcomes may cause a restructuration of the political organization, forming more complex systems, causing political disruption and breakdown (Junker 1999) or transforming the ways in which leaders wield and legitimize their “power over” (Feinman 2010).

1.3.1 Breaking-down Political Economic Strategies: Sources of Power and Power Strategies

In order to obtain, maintain, enhance, and legitimize their “power over,” leaders employ a variety of political and economic strategies, which can be broken down according to the type of power strategy and source of power. Two broader types of power strategies are identified (Blanton et al. 1996:2). On the one hand, exclusionary power tactics are those in which leaders pursue the development of a political system built

around their monopoly of “power over.” Corporate strategies, on the other hand, promote the sharing of “power over” across different groups and sectors of society.

In order to examine power strategies, we must distinguish between different sources of power. In this work, “sources of power” refer to those strategic valuable resources—material or immaterial—embedded within the social system that can only be accessed, controlled, and mobilized by leaders as they pursue their political agenda (Blanton 1998; Blanton et al. 1996:3). Those material and immaterial resources are specific of each society because the set of potential resources depends on what is available in the particular natural and social environment (Conlee 2004:211).

Blanton and colleagues distinguish between objective and symbolic sources of power (Blanton et al. 1996). Objective sources of power—called material by Kurtz (2001) and economic by Earle (1997)—are based on prestige and subsistence goods. Economic goods provide power when leaders are able to control their production and distribution (see Mann 1986:24). Control over the production and distribution of prestige and subsistence goods is essential because it stabilizes and restricts long-term access to other media of power through which other individuals or groups can impose their will (Earle 1997:12; Lehman 1969; Love 2002). Nonetheless, some types of goods are more appropriate for creating unequal power relationships than others.

For instance, prestige goods can be categorized as inalienable or alienable. Alienability is defined in terms of the freedom with which a good may be exchanged (Lesure 1999b:31). Alienable prestige goods are economically valuable resources that can create social differences when they are asymmetrically exchanged (see below).

Inalienable prestige goods³ are also valuable resources, not only for economic reasons, but also because they are restricted and imbued with esoteric history and knowledge (e.g., Inomata 2014a). Because of this particular value, inalienable prestige possessions are kept out of exchange or circulate in very specific circumstances, usually in asymmetrical interactions and always connected to the original owner or producer (Weiner 1985, 1992; see also Kovacevich and Callaghan 2014; Lesure 1999b). It is through “keeping out of circulation” or “keeping-while-giving” that inalienable possessions can create social differentiation (Mills 2004, 2014). The mere possession of such goods reconstitutes the owner’s social identity bestowing “power over” others and authenticating his or her authority (Kovacevich and Callaghan 2014; Lesure 1999b; Mills 2004:239; Weiner 1985, 1992:10).

Symbolic or ideological sources of power are based on differential access to elements of cognitive code that include a set of beliefs, norms, and social practices that relate individual people and groups to the supernatural world and dictate how people should act in the physical world and in their relations with each other (Blanton et al. 1996; Blanton 1998; Earle 1997; Kurtz 2001; Love 2002; Mann 1986). Ideological sources of power are fundamental for power-building because through their manipulation, leaders can persuade other members of society to attribute them the right to

³ An inalienable possession can be a prestige or non-prestige good, knowledge, or labor. Its main characteristic is that it can never be detached from its producer or original owner. Inalienable possessions are usually passed down through generations, with each successive owner imbuing them with their qualities and embedding them with their knowledge and history. These qualities, knowledge, and history are what define inalienable possessions make them valuable. The link with an authority that transcends present social and political actions (e.g., beings from the supernatural realm like ancestors) is also necessary to authenticate the power of the possession. At the same time, this value defines those who possess the resource in the present. Because of this, the circulation of inalienable possessions is always restricted (Kovacevich and Callaghan 2014; Lesure 1999b; Mills 2004:239; Weiner 1985, 1992).

impose “power over”, naturalize social differences, and mediate social tensions occurring between elites and non-elites and among faction leaders (Anderson 1994; Moore 1996).

Perhaps the main ideological source of power used by leaders is ritual. Certain aspects of rituals (e.g., knowledge, objects, paraphernalia, and spaces necessary to perform them) can be restricted to specific actors who, as consequence, may control and manipulate ritual and its performance (Potter and Perry 2000). Worldviews and collective memories also can be reinterpreted, manipulated, and altered by skillful and knowledgeable leaders, who may choose what elements must be remembered, forgotten, or transformed (Anderson 2006; Lucero 2003; Rick 2004; Vaughn 2004). Leaders also may manipulate the meaning of certain prestige items (i.e., inalienable possessions) and spaces (natural and constructed environments) giving them “cosmological authentication” (Weiner 1992:62) in order to turn them into symbolic objects, public monuments, and landscapes (De Marrais et al. 1996; Inomata 2014a). Through the process of materialization, leaders give ideologies physical form, generate common and shared experiences, create symbols that legitimize their authority, and serve as constant reminders of the leader-serving ideology. This creates a sense of communal identity (De Marrais et al. 1996:16; Earle 1997:151-152; Mills 2004; Vaughn 2004:114). Thus, rituals, collective memories, worldviews, symbolic items, and architecture become strategic resources of power through which leaders can insert and justify their own political agenda into the belief system and can guide collective behaviors towards habitual compliance (Anderson 2006; Lucero 2003; Payne 2002; Rick 2004; Vaughn 2004).

It is important to emphasize that distinct sources of power are never mutually exclusive and, in fact, reinforce each other and intertwine to form the power base of the elite (Earle 1991, 1997; Vaughn 2004:114). Access to these power sources provides opportunities for the development of asymmetrical power relations. Access by itself, however, is not enough for the institutionalization of social inequality or the appearance of elites (Aldenderfer 2004). These processes require that leaders successfully coordinate and articulate “two sets of potentially opposing relations” (Feinman 1995:262). The first is represented by the ties between a leader and his group of followers, while the second is defined by an individual’s links to the extra-group or regional arena (Feinman 1995; Sahlins 1963; Spencer 1993). This usually occurs when leaders have the ability to control and integrate a variety of sources of power to exclude others from accessing them, and to manipulate the asymmetrical relations in order to further self-interests. As elites control and integrate more sources of power, more complex political systems develop (Aldenderfer 2004; Earle 1991, 1997; Junker 1999).

1.3.2 Political Economy Systems: Network and Corporate Strategies

Based on the type of power strategy and source of power that leaders employ, Blanton and colleagues (1996; see also Feinman et al. 2000) distinguish two political economic systems—corporate and network—that represent two extremes of a continuum of political practices rather than a typology or a dichotomy. Corporate and network systems are not rigid and mutually exclusive. They coexist in the political dynamics of all social arrangements (e.g., Harry and Bayman 2000) but, leaders tend to emphasize either corporate- or network-oriented strategies (Feinman et al. 2000:462). As a result, one or

other system often dominates in a particular spatio-temporal setting (Feinman 1995:264; Peregrine 2001:37).

This does not mean that network and corporate modes are characteristics of distinct cultural traditions or levels of complexity as one criticism has suggested (Ashmore 1996). If this were true, temporal shifts between modes within a specific cultural context would be nonexistent. Nevertheless, shifts may occur. For instance, Feinman (2010:275) has proposed that in the last four decades, there has been a change in the United States in the wielding and funding of power from more corporate to more network modes. This transition took place “without any marked shift in hierarchical complexity or any major break in the ethnic/historical tradition most prevalent in United States society”.

It is important to elucidate another point. Blanton and associates (1996) do not consider the variable degree of social complexity because their position regarding political evolution does not support typological approaches. Nevertheless, one of the coauthors, Feinman (2010; Feinman et al. 2000) recognizes that the variable of complexity needs to be integrated into the model. Rosenswing (2000) has shown in his study of institutionalization of social inequality in Soconusco and the Valley of Oaxaca that the dual-process model and typological approaches can be well-matched. The important point to highlight here is that the network and corporate modes of political economy can operate at any level of social complexity (Feinman et al. 2000; Feinman 2010) and, therefore, they are both useful for examining the political economies of chiefdoms.

The “network system” is characterized by leaders who base their power on the development and monopolistic control of external exchange connections in order to obtain valuable economic resources, mainly prestige goods that require exotic materials and esoteric skills inaccessible to others (Blanton et al 1996: see LeCount 1996:175-176). Societies of Volcán Barú region in Central Panama (Drennan 1991), Alto Magdalena in South America (Drennan 1991), the Mississippian Moundville region (Steponaitis 1991), the Philippines (Junker 1999), and California Coast (Feinman 1995) can be mentioned as examples of chiefdoms whose leaders employed a network system to generate and maintain their “power over”.

Competition over foreign prestige goods, however, is not an end in itself. Instead, valuable goods are manipulated to gain the exclusive loyalty of followers. Prestige goods, including inalienable possessions, may be conspicuously displayed and consumed in large-scale ceremonies such as feasts⁴. The display of inalienable prestige goods could have facilitated the creation of unequal power relations, as their mere possession bestowed and legitimized power over others, affecting economic and social transactions in large-scale ceremonies that were competitive in nature (Weiner 1992:10). The feasts were sponsored and hosted by leaders to advertise their economic success and prosperity and diminish other factions (Blanton et al. 1996; Earle 1991; Feinman 2001; Feinman et al. 2000; Helms 1993; Hirth 1992; Junker 1999; LeCount 1996).

⁴ Feastings can be defined as the “sharing between two or more people of special foods and drinks [...] in a meal for a special purpose or occasion” (Hayden 2001:28). Feastings may be considered as ritual practices, in the sense that they are “highly structured sequences of action that serve to shape the habitus of individuals” but it does not mean that they are always highly elaborated ceremonies (Dietler 2001:67, 70). Individuals, factions or groups can sponsor feasts in order to achieve a variety of practical benefits. Although the practical benefits usually overlap or are combined in a single event, they can be used to conceptualize ideal feast types: solidarity, reciprocal, solicitation, promotional, competitive, political support, acquisition of political positions, work-party and child-growth (Hayden 2001:35-36; Perodie 2001:190-191).

In these ceremonies or in other events, leaders could also distribute alienable prestige goods among potential followers—goods that are viewed as necessary to perform life-crisis ceremonies, such as birth, marriage, illness, and death. In Tolowa and Yurok chiefdoms, for instance, leaders served as marriage brokers because they were the only people who had access to required economic resources (Feinman 1995). These “generous” acts are generally made under conditions of reciprocity in which recipients are at a great disadvantage because they are usually incapable of paying back the generosity. This creates debt relationships that can be manipulated by ambitious leaders to obtain access to surplus for their own political ends, attract more followers, and enhance prestige and “power over” others (Aldenderfer 2004; Clark and Blake 1994; Junker 1999; Lucero 2003).

Because several factions may have access to the external connections needed to obtain foreign prestige goods, factional leaders are continuously threatened with the possibility that their followers might switch their alliance to others who offer better benefits. Consequently, in order to be successful and to ensure their authority, leaders need to implement innovative strategies to monopolize the exchange networks and preempt competitors (Blanton et al. 1996; Brumfiel 1994; Feinman et al. 2000; Freidman and Rowlands 2008; Helms 1993; Spencer 1993).

Leaders may control the local production of prestige goods (or other valuable resources needed for exchanging) through the use of attached specialists and sumptuary rules that impose social prohibitions endowing differential rights of access (Blanton et al. 1996; Helms 1993; Junker 1999). Leaders also can make sure that exchange takes place in specific social and geographical contexts, establishing that prestige goods exchanges

are limited to reciprocal feasts in which the participation of non-elites and competing factions are restricted (e.g., Philippine chiefdoms [Junker 1999]). Most importantly, leaders may attempt to control external social connections by creating and maintaining political and military alliances with foreign leaders through prestational events that may occur in the context of reciprocal feasts (Blanton et al. 1996; Junker 1999; Parodie 2001:190). These prestational events involve exchanges of marriage partners, prestige goods (gift-giving), food, and esoteric knowledge, the value of which is recognized cross-culturally. The resulting reciprocal alliances are not only fundamental to control the exchange of valuable resources but also to consolidate political power of leaders in its local domain.

Leaders who participate in exchange networks also compete with one other for dominance of larger multigroup factions (Blanton et al. 1996:5). In order to obtain this external dimension of leadership, leaders may carry out prestational events as unequal transactions to create asymmetrical dependency relationships with foreign leaders and, thus, gain regional prominence. Warfare also may play a role in inter-polity competition. Philippine chiefs, for instance, used maritime raiding to destroy rivals' trading ports and disrupt their exchange networks (Junker 1999). Interpolity conflict served, at the same time, as a mechanism to obtain external ideologically-charged resources (Drennan 1991; Junker 1999).

The development of an ideology is seen as critical to legitimize the "power over" of successful and pervasive leaders and mediate social tensions between elites and non-elites and among faction leaders (Anderson 1994; Flannery 1999; Fried 1967; Lenski 1966). Leaders may attempt to manipulate the knowledge acquired in the course of

exchange interactions. Through the adoption of foreign ideology and paraphernalia, for instance, leaders may acquire and expand the universe of exclusive status symbols or inalienable possessions (Hirth 1992; LeCount 1996; Mills 2014) necessary to maintain and enhance their “power over” non-elites because they are used to proclaim privileged social and political position (Junker 1999:79).

Leaders can also obtain, maintain, and enhance their position in the asymmetrical power relations through patrimonial rhetoric. Leaders may argue that they have right to wield “power over” and have preferential/unalienable access to valuable resources because of their gender, generation and primary descent from apical ancestors (Blanton et al. 1996; Lucero 2003; McAnany 1995). In network-based polities, ideology is based on rituals that emphasize and manipulate elite ancestral lines (e.g., rituals of ancestor veneration) and, therefore, legitimize the control of society by a limited number of high-ranking individuals (Blanton et al. 1996). Only a small exclusive sector of society can stand out and highlight its social and economic supremacy over others (Brumfiel 1994; Renfrew 1974; Rosenswig 2000).

Exclusionary leadership based on network exchanges tends to be unstable because it depends on individual trading, military, and social skills, as well as the operation without disruption of the exchange network. In addition, leaders rarely incorporate all members of society into their factions and, because of that, leaders have to face the continuously political threat of rival elites. For all these reasons, networks systems tend to undergo cycles (Anderson 1994; Blanton et al. 1996:4; Junker 1999).

The second strategy is what Blanton and colleagues (1996; see also Beckman 2008; Feinman et al. 2000; Peregrine 2001; Renfrew 1974) term a “corporate system.”

Here, leaders do not highlight their individuality but emphasize instead their position as leaders of unranked kin-based groups (e.g., lineages) that share power, with no one group holding exclusive control (e.g., chiefdoms of the Akwe-Shavante in Brazil [Spencer 1993], ethnographic Polynesia [Renfrew 1974], the Valley of Oaxaca and the Basin of Mexico during the early Middle Formative [Drennan 1991], and the historic Southwest of the United States [Feinman et al. 2000]).

Corporate leaders still compete for power, valuable resources, and followers (either from their own corporate group or other groups), but they do so to position their own groups above all others rather than themselves as individuals (Feinman 2000). Among the Yap in the USA Southwest, for instance, Marquesans and Natchez constructed large mounds that was used to glorify an entire descent group rather than a specific individual (Elson and Abbot 2000). Outcomes of network entrepreneurship and exclusionary achievement are regulated and constrained “by a hierarchically graded set of roles and structures” (Blanton 1998:150). As a result, an apparent egalitarian ethos always prevails in the society, where leaders are “faceless and anonymous” (Renfrew 1974:79). This results in the masking of social and economic differentiations, producing a society with less clearly delineated breaks among elites of different subgroups and between elite and non-elite sectors within a group (Beckman 2008; Blanton et al. 1996; Feinman et al. 2000; Peregrine 2001; Renfrew 1974).

Rather than focusing on an exclusionary power ideology, corporate elites ground their power on the establishment and control of ideological resources that produce solidarity between and among corporate groups, emphasize an egalitarian ethos, and permit the control of the means of production. This corporate cognitive code stresses

collective representations and includes esoteric knowledge and large communal rituals centered on broad themes such as fertility, rain, and world renewal (Blanton et al. 1996), topics of interest to leaders and non-leaders alike (Beckman 2008). Communal rituals may have place in the form of “solidarity feasting” in which hierarchical differences are downplayed, food is the main good distributed, and there are no possibilities of creating debt-relationships because all participants contribute (Hayden 2001; Perodie 2001:190). Corporate system also may tend to decentralize certain ritual practices, extending them to households of all statuses and, thus, emphasizing “the commonality of all society’s constituent elements and the mutual interdependencies of varied social sectors in the reproduction of nature and society (Miller 1985:61 in Blanton 1998:160).

Because communal rituals are seen as essential for the entire community, corporate leaders are able to mobilize surplus of subsistence resources (food and tools) from across the polity (Beckman 2008; Blanton et al. 1996; Feinman et al. 2000; Renfrew 1974). Surplus may be used to assure the support of followers and finance further agricultural production. In corporate societies, there is an emphasis on food production, which is the economic source of power. In some societies (e.g., historic Pueblo society), leaders control clan lands and hold the power to allocate it (Feinman 2000). Access to land in Hopi society depended on participation in the ceremonial system. This participation was only possible with possession of ritual knowledge, which was controlled through secrecy and privileged access (Feinman et al. 2000).

Because corporate leaders only succeed in recruiting and maintaining followers when heighten cooperative and managerial activities aimed at group survival, they mobilize labor for massive construction projects or other economic activities that benefit

the entire community (Beckman 2008; Blanton et al. 1996; Feinman et al. 2000; Peregrine 2001; Renfrew 1974). For instance, chiefly leaders of Chaco Canyon (Peregrine 2001) and the Valley of Oaxaca (Drennan 1991) organized communal labor to build monumental ceremonial spaces suitable for large public rituals. Alternatively, leaders of Tehuacán in Mexico (Spencer 1993) and pueblos in the Southwest of the United States (Feinman et al. 2000) controlled irrigation technology, which was necessary for agrarian production. Corporate elites also encourage the diffuse, domestic production of symbolic goods that were only consumed in limited and specialized contexts, like communal rituals hosted by elites (Peregrine 2001:41-43). Symbolic crafts also may be subject to a distributive economy in which the entire community benefits, reducing the potential roles of goods in exclusionary power bases (Blanton 1998). Because of the power strategies that corporate elites employ, this system allows more stable and cohesive political formations than the volatile network system.

1.4 ARCHITECTURE OF POWER: THE MATERIALIZATION OF POLITICAL ECONOMIC STRATEGIES

There are several means of studying the political economic systems of early complex societies. When chiefdoms are defined as polities that transcend the local level, the study of regional settlement patterns becomes fundamental. Archaeologists seek to identify differences among sites based on size and complexity in order to understand the regional hierarchy of settlement. Chiefdoms are identified when a two- or three-tiered hierarchy of settlement pattern is established. The position of the settlement in the

hierarchy signals its position in the decision-making hierarchy (Carneiro 2003; Earle 2002; Isbell and Schreiber 1978; Peebles and Kus 1977; Wright 1994).

Land could have played an important role on the dynamics of social inequality in ancient civilizations because elites may have directly or indirectly manipulated the land and their agricultural products to maintain and legitimize their “power over” non-elites (Ford 1986, 2004; Guderjan 2007; Robin et al. 2012a). When chiefdoms are seen at a local level and defined as political units with institutionalized social inequality and permanent leadership (Earle 1991; Fried 1967; Service 1962), archaeological correlates such as differential burial patterns, presence of high degree of craft specialization, distribution of prestige and wealth goods among the population, and architecture need to be taken into consideration to identify these political formations and assess their political dynamics. The distribution of ideologically-charged objects within a site, for instance, can provide indications of the political dynamics at work in initial institutionalization of social inequality. For instance, the differential presence and variety of those objects can indicate whether certain resources were controlled by individual elites or by larger corporate groups. The same applies, of course, to the localization of economic activities, such as exchange, craft specialization, and consumption, all of which provide evidence for the nature of social relationships and organization of labor within a settlement.

As one of the most visible and behaviorally influential aspects of social life, architecture is a potent tool to study dimensions of social order, such as power dynamics (Kolb 1994; Moore 1996). Architecture is a physical manifestation of the amount of labor invested in the built environment and, therefore, reflects the amount of energy that elites can extract from labor and resources they control. While public architecture is seen as

expression of “power over” *par excellence* (Moore 1996; Renfrew 1974; Trigger 1990), domestic structures also may signal asymmetrical power relationships. This is because differences in residence elaboration and location and the expenditure of different quantities of energy in domestic architectural construction may express differences in status of their occupants (Cliff 1988 after Wason 1994:136; Rosenswig 2000:437). In addition, changes in the formal attributes of private and public architecture reflect changes in the nature of “power over” (Englehardt and Nagle 2011; Moore 1996:139). As a result, built environments are a compelling tool for investigating “power over” and how it changes over time (Abrams 1994; Kolb 1994; Moore 1996; Payne 2002; Pendergast 1992; Renfrew 1974; Rosenswig 2000; Wason 1994).

Yet architecture is not a passive tool that only communicates power inequalities and embodies activities. The built environment also shapes, reinforces, and transforms power relations. It does so by evoking particular patterns of behaviors in specific settings, reproducing specific modes of social interaction over generations, and defining boundaries to include or exclude certain social groups from socially valued spaces (Bourdieu 1977; Villamil 2007).

Because the built environment is malleable, modifiable, and subject to reinterpretation, its formal and symbolic attributes and the meanings associated with it can be manipulated by elites to obtain, enhance and legitimize their “power over” others (Ashmore 1989; DeMarrais et al. 1996; Kolb 1994; Lawrence and Low 1990; Moore 1996, Villamil 2007; Wason 1994). The built environment can be seen as an important political resource of social control, in both material and symbolic terms. As with any source of power, architecture may be subject to competition. Political actors may contend

over who can build certain types of buildings in terms of form and function, where they can build them to either heighten or discourage their prominence, who has access to valuable spaces (Villamil 2007), and what activities can be performed in each type of building by whom. Because of all this, architecture becomes the materialization of political strategies employed by elites.

Based on a set of materialistic and architectural insights about social space and activities (e.g., Abrams 1989; Awe 2008; Flannery 1998; Kowalewski et al. 1992; Lawrence and Low 1990; Moore 1996; Pendergast 1992; Renfrew 1974; Rosenswig 2000; Villamil 2007; Wason 1994), my research develops private and public architectural correlates for each of the two modes of political economy. The accessibility and prominence, along with the function and form of the structures are considered significant for exploring power relations (see Ames 2008; Blake 1991; Feinman and Neitzel 1984; Fisher 2002; Nash and Williams 2004; Moore 1992, 1996; Payne 2002; Pendergast 1992; Wason 1994).

Prominence refers to the elevated position and central location of the buildings within the civic center and the community as a whole. Central location is especially relevant to residences because it refers to the proximity to public spaces. The degree of accessibility denotes how controlled the access was to certain valued spaces to include and exclude specific individuals or groups. Accessibility can be examined based on the site arrangement and plan of the building (e.g., the number and place of access). The form of buildings are evaluated using attributes that assess the amount of labor input, such as size, height, plan and construction quality. Finally, the function of structures is analyzed based on the form and associated artifacts.

The previous variables can be recombined and manipulated in several ways to symbolically and visually place elites apart, while enhancing “power over” others. At the same time, these architectural and spatial attributes can be used to illuminate the number of competing groups in any one polity and the degree to which those elites attempted (or not) to mask their “power over” others. By examining how architectural patterns changed, we also can identify a range of political economic strategies. We need to take into consideration that the archaeological correlates presented below are accurate in ideal conditions, but they are not always present in the archaeological practice.

1.4.1 Material Correlates of Network Systems

Political actors in a network system pursue the development of a political system built around their monopoly control of power. Archaeologically, this translates into material culture that highlights individual actors. From this perspective, we should find a marked differentiation among elite and non-elite houses. Elite houses should be highly visible and centrally located in terms of public space (Blake et al. 2006:194). Elite residences should range from large to monumental. These privileged houses should have a plan characterized by a complex layout and restricted access and a particular form because they should be built with conspicuous, high-quality materials. In terms of function, elite residences should be almost exclusively domestic or should exhibit ritual activity focused on enhancing individual power (i.e., ancestor veneration). Most importantly, there should be one elite residential structure that stands out in terms of form and prominence: the chief’s house. In contrast, non-elite residential structures should be less prominent, having a less complex form. Public buildings should be heavily focused

on individuals and they should be considered as an extension of elite space. They should resemble elite residences in terms of prominence and form, although with an absence of domestic activities.

Activities performed in public buildings should serve the purpose of enhancing individual power, such as the veneration of ancestors. Competitive and alliance feastings should be present in elite spaces and are evidenced by a myriad of archaeological signatures such as food remains, preparation and serving vessels, ritualized items of etiquette, large amounts of prestige items, paraphernalia for public rituals, and other elements (Hayden 2001:40-41; Table 1.1).

Given that this mode of political economy focuses on external relationships, prestige goods should be restricted to elite spaces, either in their residences or public spaces. Such prestige goods should be considered in terms of their raw materials, required specialized knowledge—technical or ritual—or intensive labor to be produced and long-distance origin (see Goldstein 2000; Helms 1993; Inomata 2001). Non-elite spaces should lack these items. This also applies for locally produced prestige goods manufactured by attached specialist or the elites itself. Evidence of ancestor veneration should be present in elite residences and public structures where ancestors considered as prominent within the community are buried and invoked (McAnany 1995:49-50).

Table 1.1. Archaeological signatures of feasts in elite houses in network societies (Hayden 2001:40-41).

Archaeological signature	Archaeological indicators
Food	➤ Rare or labor intensive plant or animal species (especially condiments, spices, and domestic animals) ➤ Special “recreational” foods (e.g., tobacco, opium, cannabis and alcohol) ➤ Quantity of food items ➤ Evidence of waste of food items (e.g., deposition of articulated joints, unprocessed bone)
Preparation vessels	➤ Unusual types (e.g., for beer making, chili-grinding, perhaps initial appearance of cooking pots) ➤ Unusual large size and numbers
Serving vessels	➤ Unusual quality of materials (e.g., first occurrence of pottery or highly decorated or specially finished pottery, large gourds, stone bowls) ➤ Unusual size and number of serving vessels
Food-preparation facilities	➤ Unusual size of facilities (e.g., large roasting pits or hearths) ➤ Unusual number of facilities (e.g., several hearths in a row) ➤ Unusual location or construction of facilities
Special food-disposal features	➤ Bone dumps ➤ Special refuse fires containing feasting items ➤ Feasting middens
Feasting facilities	➤ Special structures (temporary vs. permanent) for highest-ranking guests and hosts, or for large numbers of people ➤ Special display facilities, scaffolds, poles, or other features
Special locations	➤ Mortuary or remote locations that are clearly not habitation sites (e.g., in front of Megalithic tombs, at henge monuments, inside caves) ➤ Loci associated with nuclear households, residential corporate households, large feasting middens or central community spaces
Associated prestige items	➤ Presence or absence, and relative abundance of prestige items typically used in different types of feasts (e.g., ritual display items, feathers, shell jewelry) ➤ The destruction of wealth or prestige items (via intentional breakage or burial)
Ritualized items or etiquette	➤ Smoking or other narcotic paraphernalia ➤ Ritualized vessels for consumption of alcohol, chocolate, kava, or other prestige drinks
Paraphernalia for public Rituals	➤ Dance masks or costume elements
Existence of Aggrandizers	➤ Wealthy burials; social or site hierarchies; large residences with high storage per capita
Recordkeeping devices	➤ The presence or absence and frequency of tally sticks, counting tokens, or symbolic pictographs
Pictorial and written records of feasts	
Food-storage facilities	➤ Stables, storage pits, granaries
Resource characteristics	➤ Abundance, intensified exploitation, invulnerability to overexploitation

1.4.2 Material Correlates of a Corporate System

Corporate strategies promote the sharing of power across different groups of society and emphasize an egalitarian ethos. Consequently, even when asymmetrical power relations exist in the society, they tend to be masked. Domestic architecture should not explicitly communicate socioeconomic differentiation and the archaeological record should not show evidence of a unique chief's house (Renfrew 1974). Elite and non-elite residences should either represent a continuous range of architectural features or be similar based on the variables of prominence, form, and function (Blanton et al. 1996; Feinman 2000). Several domestic structures, however, may be distinguished as belonging to the elites few based on their central location and their larger size but the visibility and other attributes of form should be similar to non-elite houses. The emphasis on public works would be carried out to construct public buildings, where communal and integrative rituals would be performed (Feinman 1995). These public buildings should be highly visible and therefore, should constitute the center of the site. Regarding their form, the buildings will be monumental in scale, made of high-quality materials, a plan characterized by a complex layout and open access.

If symbolic goods are present, they should tend to have an even spatial distribution among several bounded elite areas or between elite and non-elite spaces (Blanton et al. 1996; Feinman 2000). Certain items considered prestige goods in the network system could have played a ritual function having a different meaning and spatial distribution. They are either be exclusively associated with the communal public buildings, where they were part of integrative ritual feastings, or evenly distributed

among the elite and non-elite residential units where they were used during domestic rituals. The local production of those symbolic goods is carried out at the domestic level.

1.5 SUMMARY

As evidence by applications all over the world, the concept of chiefdom is viewed as a useful heuristic tool whose definition must consider structural aspects of the political system (e.g., centralization, social inequality and socioeconomic heterogeneity) as well as processual dynamics (e.g., power and authority). The dual-processual theory makes a strong model to understand how leaders acquire, wield, enhance, and legitimize their “power over” others by using a range of power strategies and how this variability in political economy changes over time. As I discuss, this model is not used uncritically. I believe that the integration of variable of degree of social complexity is helpful, particularly when we focus on societies that fall at different points on the scale of social complexity in order to study social change. I employed the dual-processual model to research the political dynamics at play at the crucial time when social inequality emerged and becomes institutionalized.

I also integrate other notions that increase the heuristic value of dual-processual model. In this vein, based on the premise that power is inherent to all social relationships, I include the distinction between “power to” and “power over” (Miller and Tilley 1984). The distinction between leaders and elites is also incorporated. Although both categories denote political actors wielding “power over,” only elites possess authority or the legit right to wield “power over.”

I follow the premise that access to sources of power is important for the developing of unequal power relationships and the emergence of leaders. Nevertheless, access alone is not enough for social inequality to become institutionalized. For this is necessary that political actors integrate a variety of economic and ideological resources and have exclusive control over such resources (Feinman 1995; Sahlins 1963; Spencer 1993). Likewise, political actors must learn to manipulate the asymmetrical relationships to promote their agenda. Therefore, although political actors can emphasize either material or symbolic resources, both types of resources are needed for the institutionalization of social inequality (Marcus and Flannery 1994). In this vein, the incorporation of inalienable possessions (Kovacevich and Callaghan 2014; Lesure 1999b; Mills 2004:239; Weiner 1985, 1992) into the dual-processual model is highly relevant. Being both economic and ideological resources, inalienable possessions are seen as a critical in the emergence and institutionalization of social inequality, particularly those goods obtained through non-local connections because they were not regulated by leveling social mechanisms usually prevailing in egalitarian societies. The mere possession of these goods confers and legitimizes “power over” and through the mechanisms of “keeping-out-of-circulation” and “keeping-while-giving,” they facilitated the creation of unequal power relations.

Finally, I develop material correlates for each political economic system, with a special focus on what private and public architecture and its associated activities can tell us about the political dynamics at play during the emergence, institutionalization, and consolidation of unequal power relationships.

CHAPTER 2.

**THE MIDDLE PRECLASSIC PERIOD IN CONTEXT: ARCHAEOLOGICAL
EVIDENCE ACROSS THE MAYA LOWLANDS**

2.1 INTRODUCTION

The first Middle Preclassic occupation in the entire Maya lowlands was brought to light at Uaxactun during the excavations conducted by the Carnegie Institution of Washington between 1926 and 1937 (Ricketson 1937; L. Smith 1950). These occupations were associated with ceramic material called Mamom by Robert Smith (1955:21), which has been proposed to date from 700 to 450 B.C. (Andrews V 1988, 1989). So far, the Mamom ceramic complex has been identified across the Maya lowlands territory and, because of this, it has been usually considered as the earliest “long-lived Lowland ceramic tradition” (Ball and Taschek 2003:189).

During the first half of the twentieth century, Mayanists thought that these Mamom-bearing populations represented the first sedentary inhabitants of the Maya lowlands. This notion changed in the second half of the twentieth-century when Richard E. W. Adams (1971) and Gordon R. Willey (1970) identified the first pre-Mammon pottery in the Río Pasión region at the sites of Altar de Sacrificios (Xe ceramic complex) and Ceibal (Real Xe ceramic complex). This pre-Mamom pottery was named Xe ceramic sphere and was dated to 800-600 b.c.⁴ (Willey 1970:318; see also Adams 1971; Rice

⁴ There have been some inconsistencies when radiocarbon dates are reported and compared (Powis 2005:3). Some researchers, especially those that established the traditional chronology, use uncalibrated dates. Others rely on corrected or calibrated dates. In order to avoid this confusion, calibrated dates are presented as B.C., while uncalibrated dates are reported as b.c. It is important to note that the beginning of the Middle

1976:427) or 900-600 B.C. (one-sigma calibration; Berger et al. 1974). For several years, the Xe ceramic tradition was the only early pottery known in the Maya lowlands and it was, therefore, interpreted as the ancestor of the latter Mamom pottery. Nonetheless, in subsequent years the position of Xe as the earliest pottery in the Maya lowlands was challenged by new discoveries at several sites located in the Petén, where another pre-Mamom pottery named Eb was defined. Based on the available radiocarbon dates on that time, this ceramic complex was tentatively dated to 700-500 b.c. (Coe 1965; Culbert 1977). Currently, Xe and Eb ceramic phases are dated back to 1000-750 B.C. (two-sigma calibration; Andrews V et al. 2008:1; Inomata et al. 2013).

During late-1970s, research conducted in Cuello, northern Belize yielded ceramic materials associated with architecture that permitted the definition of another pre-Mamom ceramic complex named Swasey (Andrews V and Hammond V; Kosakowski 1987; Kosakowski and Pring 1991, 1998; Pring 1977). The Swasey pottery was initially dated to 2500-1300 B.C./2000-1000 b.c. (Hammond et al. 1976; Pring 1977) but a latter assessment has redefined its temporal limits to 1000-650 B.C. (Andrews V and Hammond 1990:579; Hammond 1991; Kosakowski and Pring 1991). The pre-Mamom tradition defined in the Belize Valley—designated Cunil at Cahal Pech (Awe 1992) and Kanocha at Blackman Eddy (Garber et al. 2002)—seems to be slightly earlier. The Cunil/Kanocha ceramics have been dated back to 1100-900 B.C., although some argue that may have appeared a century earlier (Garber et al. 2004; Healy and Awe 1995; Sullivan et al. 2009). Others suggest a starting date of 1000 B.C. (Lohse 2010).

Based on the previous data, archaeologists have proposed that three different ceramic spheres were present in the central Maya lowlands during the early Middle Preclassic⁵ (1100/1000-600 B.C.). Accordingly, the Xe/Real Xe sphere predominated in southwestern Petén, the Eb/Cunil/Kanocha prevailed in western Belize and eastern Petén, and the Swasey materials were present in northern Belize (Ball and Tascheck 2003, but see Cheetham 2005; Lopez Varela 2004; Sullivan and Awe 2013). The Mamom or Mamom-related ceramics did not make their ubiquitous presence across the lowlands territory until the second half of the Middle Preclassic period (600-300 B.C.).

Recently, some archaeologists have proposed a fourth pre-Mamom ceramic sphere used by people occupying the northern lowlands, the Ek ceramic complex (Andrews V et al. 2008:3-5). According to Andrews V and colleagues (2008:5), the Ek ceramic complex dates back to 1100-800 B.C. (calibrated in two-sigma), predating the Nabanché ceramic complex that is similar to the Mamom ceramic tradition. Nevertheless, this complex is not fully accepted yet. Ceballos Gallareta and Robles Castellanos (2012:408), for instance, argue that Ek pottery have typological characteristics that are similar to the Joventud tradition and, as consequence, the Ek pottery does not form a different ceramic complex but they are part of the early Nabanché.

Because of the relative paucity and the limited sample of Middle Preclassic

⁵ There is a debate about whether the phrase “Early Preclassic” should be used to describe the time when the first pottery was produced in the Maya lowlands. Archaeologists who argue that the earliest pottery appeared by 1200/1100 B.C. have used the terms “end of Early Preclassic” or “terminal Early Preclassic” (e.g., Garber and Awe 2009; Hammond 1991; Kowsakowski and Pring 1998). Others prefer to avoid these phrases, arguing that the first ceramic manifestations in the Maya lowlands occurred at a time very close to the beginning of the Middle Preclassic, at 1000BC/900bc (e.g., Inomata et al. 2013; Neivens de Estrada 2014). Following Neives de Estrada (2014:196), the phrase “early Middle Preclassic” is used throughout this dissertation to refer to the time frame 1100-600 B.C./ 960-500 b.c. because most of that time falls within the early Middle Preclassic.

buildings, archaeologists claimed that the pre-Mamom and Mamom public architecture was rare and when existent, it was simple. Based on this negative evidence, the early Middle Preclassic populations were both regarded farming villagers with an egalitarian form of political organization (Hansen 1998; Rice 1976; for instance see R. Smith 1955). In fact, during the early 1960s, archaeologists believed that complex societies came into being by about A.D. 300, at the end of the Preclassic era. Fortunately, in the last four decades, research conducted across the Maya lowlands has brought to light new data that, although quantitatively and geographically limited, have modified our understanding about the political organization of the Middle Preclassic Maya societies. Architecture has stood out among the diverse cultural manifestations to study political dynamics through time. Therefore, in this chapter, I present an overview of the discoveries of Middle Preclassic architecture across the Maya lowlands.

2.2 THE MIDDLE PRECLASSIC ARCHITECTURE

2.2.1 Northern Belize: Discovering Middle Preclassic Communities

The region of northern Belize was severely under-explored during the first half of the twentieth century and, even during the 1950s and 1960s, the region only saw a very small amount of archaeological activity (Figure 2.1). As a result, Middle Preclassic occupations were practically unknown in this region. One exception was Haberland (1958), who proposed the presence of Middle Preclassic populations in northern Belize, on the basis of Mamom sherds recovered in the fill of a circular platform at Louisville. Nevertheless, Haberland's claim was disregarded by Bullard (1965) who, based on his excavations at San Estevan in 1962, claimed that the first occupation in northern Belize

dated to the Late Preclassic period (300 B.C.-A.D. 300).



Figure 2.1. Map of Northern Belize showing the sites mentioned in the text.

The rejection of Middle Preclassic occupation in northern Belize changed during the 1970s and 1980s when several archaeological projects undertook excavations in the region. The excavations conducted at Cuello between 1975 and 1993 by the British Museum-Cambridge University Corozal Project were the most significant to reevaluate the traditional view regarding the Middle Preclassic occupation in this region (Hammond et al. 1979; Hammond 1980, 1982, 1991; Hammond and Gerhardt 1990; Hammond et al. 1979, 1991, 1992, 1995).

Explorations at Cuello were focused on the area near the Late Preclassic Platform 34. These excavations revealed the earliest major Preclassic component at the site and permitted the first definition of the pre-Mamom Swasey ceramic complex (Hammond et

al. 1979; Pring 1977). Although the definition of this ceramic tradition has undertaken a long process, nowadays it is usually accepted that Swasey sphere is composed by two different but related ceramic complexes, the Swasey (100BC-800/750BC) and Bladen (800/750BC-650BC; see Andrews V and Hammond 1990; Hammond 1991; Hammond et al. 1979; Kosakowski 1987, Kosakowski and Pring 1991, 1998; Pring 1977). On top of the Swasey-Bladen contexts, archaeologists found contexts with Mamom-related pottery, confirming that Cuello (and northern Belize) was culturally affiliated to the Petén during the late Middle Preclassic period (650-400BC; Hammond 1991; Kosakowski and Pring 1991, 1998).

The early Swasey-Bladen and Lopez Mamom pottery at Cuello were both associated with several consecutive buildings. Based on this data, archaeologists inferred a construction sequence of Preclassic structures (Gerhardt 1988; Gerhardt and Hammond 1991; Hammond et al. 1979; Table 2.1). During the Swasey phase (1000-800/750 B.C.), the earliest construction consisted of a perishable structure resting directly on the paleosol that was replaced by two low round plastered platforms supporting perishable superstructures. At the end of this phase, ancient Cuello inhabitants built a plastered patio that supported low, apsidal plastered platforms with perishable buildings on its north, west and south ends. During the Bladen phase (800/750-650BC), the courtyard was expanded northward and new platforms were built to support perishables superstructures. Gerhardt and Hammond (1991:103) argued based on the overall characteristics of the Swasey and Bladen phase buildings, the lack of caches, and the nature of the trash found during the excavations that the patio group had a residential function.

Table 2. 1. Ceramic complexes from sites of Northern Belize.

MAJOR PERIODS		TIME	CUELLO (Kosakowski & Pring 1998)	COLHA (Iceland 2005)	K'AXOB
PRECLASSIC	PROTO-CLASSIC	300	COCOS CHICANEL	BLOSSOM BLACK	Terminal facet
		200			
		100			Late facet
		AD/BC			
	LATE	100		ONECIMO	Early facet
		200			
	MIDDLE	300	LOPEZ MAMOM	CHIWA Late Facet	Late facet
		400			
		500		Early Facet	CHAAK-K'AX Early facet
		600			
		700	BLADEN	BOLAY	
		800			
	EARLY	900	SWASEY		
		1000			
		1100			
		1200			

During the following Lopez Mamom phase (650-400 B.C.), the buildings beneath Platform 34 underwent successive formal transformations and, by the end of this phase, the first two rectangular platforms were constructed. These platforms were made of large limestone boulders and they supported stone-walled superstructures covered in white plaster. According to Hammond and colleagues (1979:101) these rectangular structures and the patio group as a whole held a public function. They based their argument on the

fact that, around 400 B.C., the platforms underwent a ceremonial destruction—evidence by dismantling of walls and fire—and the courtyard group was infilled. After their destruction, the structures were buried by the large Cocos-Chicanel Platform 34, the focus of the Late Preclassic ceremonial precinct at Cuello (Hammond 1999:55).

The architectural evidence suggested that the population of Cuello remained egalitarian until the end of the late Middle Preclassic period. The site layout has confirmed this statement—domestic architecture was similar across this dispersed village (Hammond 1991). There is evidence, however, that incipient social differentiation could have existed during the Swasey/Bladen phases. Exotic items were found in well-stocked graves (e.g. jade items), whatever the age or sex of the occupant. This could imply that differential access to exotic goods could have been a matter of ascribed rather than achieved status (Hammond 1999:52-53). Nevertheless, if social differentiation was present at Cuello before the end of the Lopez Mamom phase, its manifestation was very modest, especially in the architectural record.

The same can be said about K'axob, where a clear architectural differentiation was detected beginning around 200 B.C. (McAnany 2004:6). Nonetheless, we need to take into consideration that this late expression of social differentiation could have been a consequence of the place of Cuello and K'axob in the settlement pattern hierarchy of northern Belize. These sites could have been at the end of the spectrum of the pattern settlement hierarchy.

2.2.2 Redefining the Middle Preclassic Period: Public and Residential Architecture in Petén, Guatemala

Archaeologists have recognized that, during the early Middle Preclassic, the Petén and the Pasión River regions were occupied by Eb- and Xe-bearing populations respectively (Adams 1971; Cheetham et. al. 2003; Culbert 1977; R. Smith 1955; Willey 1970, 1990). During the late Middle Preclassic, Mamom ceramics made their appearance and spread across the Petén territory (Table 2.2; Figure 2.2). Because of the small sample of Middle Preclassic contexts, the pre-Mamom and Mamom settlements were both assessed as farming villages, whose inhabitants held an egalitarian form of political organization (see Adams 1977). This perspective would change in the following years.



Figure 2.2. Map of the Southern Lowlands showing the principal sites mentioned in the text.

Table 2. 2. Ceramic complexes of sites from Petén and Pasión River region.

MAJOR PERIODS		TIME	UAXACTUN (Smith 1955)	TIKAL	ALTAR DE SACRIFICIOS Adams (1971)	SEIBAL (Willey 1970)	
PROTO-CLASSIC		300	CHICANEL	CIMI	PLANCHA	CANTUT-SE	
		200					
		100		CAUAC			Late facet
		AD/BC		CHUEN			Early facet
		100					
		200					
LATE							
PRECLASSIC		300	MAMOM	TZEC	SAN FELIX	ESCOBA	
		400					
		500			Early facet		
		600		XE		REAL	
		700					
		800					
		900					
		EARLY	1000				
			1100				
			1200				

The publication of a tape-and-compass map of El Mirador by Ian Graham (1967) revealed that this archaeological site contained the largest structures ever known in southern Mesoamerica. More striking was the fact that this site dated back to the Late Preclassic period (Dahlin 1984:18-19). El Mirador data led to claim that complex societies in the southern lowlands developed during the Late Preclassic (300 B.C.-A.D. 300) rather than at the beginning of the Early Classic as it was claimed before the 1960s.

As an attempt of researching the relationship between El Mirador and its satellite sites (e.g., Nakbe, Tintal, Wakna, La Florida, Pedernal, Isla and Xulnal) during the Late Preclassic, in 1989, Hansen (2005) started the “Regional Archaeological Investigations in Northern Peten Project.” Excavations revealed that some of the satellite sites dated back to the Middle Preclassic. Nakbe stood out among those early settlements because of its monumental architecture and continuous occupation spanning from 1000 B.C. to A.D. 150 (Hansen 1991, 1992, 1993, 1998, 2000, 2005). This occupation rendered a unique opportunity to investigate how early architecture evolved through time.

According to the architectural sequence proposed by Hansen (2005), by 1000-800 B.C., the architecture at Nakbe consisted of perishable structures with hard-packed, earthen floors and postholes carved into bedrock. Shortly after, Nakbe inhabitants built low platforms (approximately 50 cm in height) made of roughly shaped, thin, rectangular stones. The platforms supported perishable buildings with *sascab* or hard clay floors. According to Hansen (2005), these early constructions were associated with sparse ceramic materials that seemed to be pre-Mamom, although a full definition of this pottery has not been provided yet.

Between 800 B.C. and 600 B.C., Nakbe became a large village, extending over an area of approximately one square kilometer (Hansen 2002:61). During this time, large domestic platforms (approximately 2-3 m high) were constructed using roughly cut, rectangular stones covered with thin, crude stucco. The summits of these platforms were covered with *sascab* floors or thin plaster floors. Plazas also were constructed using large, roughly shaped stones placed in lineal fashion. Associated with these constructions, there were ceramics that correspond to the Mamom tradition (Hansen 2005:58).

During the late Middle Preclassic (600-350 B.C.), Nakbe underwent major changes in architectural construction styles and techniques (Hansen 1998:62, 2005). Large platforms, ranging between 2 m and 6 m tall, were constructed by placing large amounts of stone fill without mortar on top of previous buildings and covering this dry core with thin stucco floors. The platforms supported large buildings, up to 18 m above the platform surface, which were placed on the edges of the platforms in order to define spatial plazas. These monumental constructions were made of megalithic, well-cut blocks that measured in average 1 meter in length, 50 cm in thickness and 40 cm in width. In order to build the retaining walls, the blocks were placed parallel to the wall line, with a stone set perpendicularly in order to tie the wall to the fill (Hansen 1991:75). Aside these new construction techniques, architectural styles and certain architectural patterns were introduced during this time frame. Apron moldings, *talud* walls, ballcourts, causeways or *sacbes*, and E-group complexes⁶, were all constructed during the late Middle Preclassic (Hansen 1991, 1992, 1998, 2000; López 1993; Morales et al. 2008; Velásquez 1993).

The first archaeological excavations conducted at Altar de Sacrificios and Ceibal, in the Pasión River region, also uncovered complex architecture dating to the late Middle Preclassic. These sites, however, did present evidence of earlier public and domestic constructions (Inomata 2014b; Inomata et al. 2013; L. Smith 1972; Willey 1990).

Ceibal was first occupied at the beginning of the Real phase (1000-750 B.C.) by a Xe-bearing population who settled the highest hills of the site, like Group A (Inomata

⁶ E-Groups consist of an open space or plaza bordered on the west by a platform or pyramid with radial stairways and on the east by an elongated platform with one or three lineal superstructures. At the beginning, these complexes were associated with astronomical functions but since they exhibit a large variation across time and space, they are better interpreted as spaces where rituals concerning the solar cycle were performed (Aimers and Rice 2006).

2014b; Inomata et al. 2015; see also Willey 1990; Figure 2.3). The earliest version of Structure A-24 (Platform Sulul) was built at the onset of the Middle Preclassic, by 1000 B.C. Platform Sulul consisted of a large basal platform measuring 1.3 m in height that was renovated and enlarged around 850-800 B.C. Willey (1990) pointed out that this platform could have served as a residence, but recently, Inomata and colleagues (2015) have concluded that there is not enough evidence to judge whether it functioned as residence or communal building. So far, the earliest evidence of a domestic space dates back to the end of the early Middle Preclassic (800-700 B.C.) and it was found under the East Court, where a small domestic platform (Platform Fernando) was carved out of natural marl. Group Karinel seems to have been occupied around this time. Nevertheless, so far, there is no evidence of domestic occupation dating to 1000-800 B.C. Outside Group A, ceramics dating to 850-700 B.C. seem to have deposited “directly on bedrock without any recognizable traces of contemporaneous house platforms” (Inomata et al. 2015:4272).

During the next Escoba Mamom phase (750-300 B.C.), the population increased and groups near Group A (i.e., Group Karinel) rebuilt some of their residences. Platform Fernando was covered by a larger platform (Platform K’at) that measured 1.6-1.9 m in height and supported multiple superstructures arranged around a patio (Inomata 2014:28; Inomata et al. 2015:4270). These superstructures consisted of perishable buildings with low foundations made of clay or clay and stone (Inomata et al. 2013:468). According to Inomata and colleagues (2015:4270), this platform “appears to have served as a residential complex of the emergent elite.” Structure A-24 was renovated as Platform Ch’och’ was built. This platform supported multiple buildings associated with middens

(Inomata 2014b; Inomata et al. 2013, 2015). Again, it was not possible to assess whether this platform was a residence or public building as evidence was inconclusive.

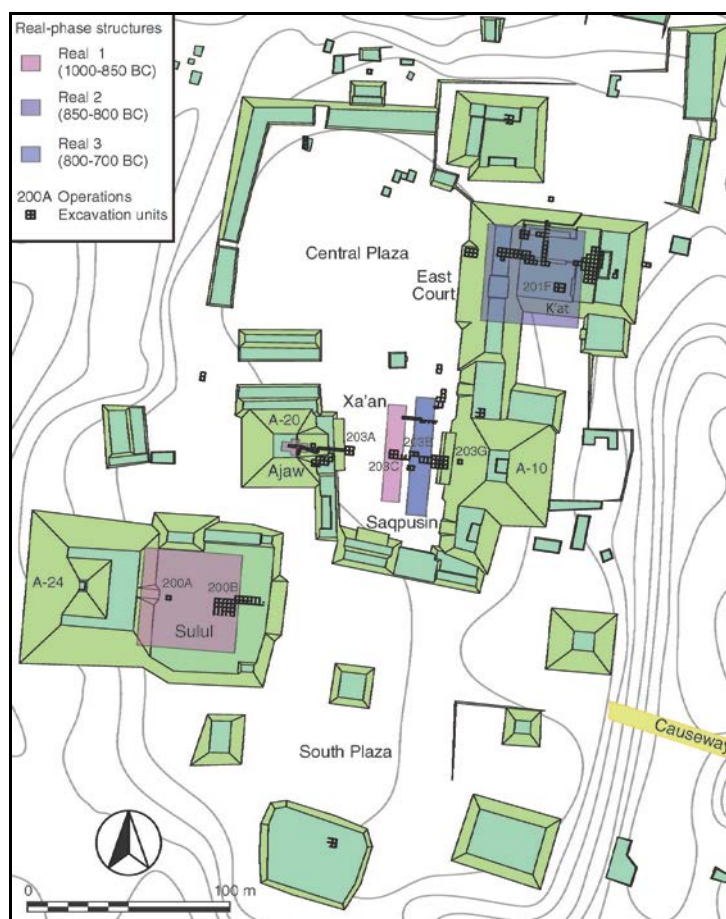


Figure 2.3. Map of Ceibal Group A with the locations of Real-phase structures and excavation units (After Inomata et. al. 2013).

Recent excavations have uncovered conclusive evidence to state that the first public architecture at Ceibal was built by Xe-bearing inhabitants around 950 B.C, before the domestic structures were built in the East Court. The first public buildings followed a spatial arrangement similar to contemporaneous centers in Chiapas and the Gulf Coast, indicating interactions between these groups (Inomata 2014b:20; Inomata et al. 2015; see

Clark and Hansen 2001). Ceibal inhabitants carved a high point of the bedrock and placed black soil with clay on top in order to construct a low platform measuring 2 m in height (Structure Ajaw). This construction was associated with a long platform located 50 m east (Structure Xa'an), which probably measured 42-55 m in length. The eastern platform was also carved out of natural marl. Its front part was defined by two steps, while its back wall was 1 m high and was reinforced with limestone blocks (Inomata et al. 2015). By scraping off the space between the two platforms, the early Ceibal residents also created a leveled plaza, whose floor consisted of the exposed whitish-yellow marl.

This architectural complex seems to represent the earliest E Group in the Maya lowlands, a space where communal rituals were performed throughout the Middle Preclassic (Inomata 2014; Inomata et al. 2013, 2015). This ritual activity is suggested by a series of caches consisting of greenstone axes and other items that were deposited along the east-west axis of this assemblage (Inomata 2014b; Inomata et al. 2015). The E Group complex underwent several renovations. By 850 B.C., the western platform was transformed into the first pyramidal building, reaching a height of 3-5 m. As Brown (2009) has pointed out, the pyramidal form is usually associated with elite strategies to restrict the access to ceremonial places to most community members. Consequently, the pyramid at Ceibal can be suggesting the presence of an emerging elite and, therefore incipient social inequality by at least 850 B.C. The dimensions of this pyramidal building would continue increasing and, by the end of the Real phase, it stood 6-8 m above the plaza surface. The plaza was expanded twice and, as result, the eastern long platforms were buried and constructed farther east in two different moments.

Unlike Ceibal, other sites in the Pasión River region were settled by 800-700 B.C.,

including Altar de Sacrificios, Itzan, El Caobal and Punta Chimino (Inomata 2014). Based on the ceramic evidence, it was established that the early population at Altar de Sacrificios concentrated around Groups B and C. Architectural evidence dating to this early phase consisted of postholes carved into the ground, suggesting the presence of perishable buildings placed directly on the original ground surface (L. Smith 1972:118).

During the following San Felix phase (700BC-300 B.C.), the Altar de Sacrificios residents inhabited perishable structures built on top of low platforms made of clay and tamped earthen floors. Around 500 B.C., the first version of Group B came into being, which consisted of a small plaza surrounded by platforms on its south, west, east and north sides. Two of these platforms measured between 1.65 m and 5 m high. The construction technique used to build these platforms was quite unique (L. Smith 1972:115; although see Berlin 1953). The retaining walls of the platforms consisted of a batter made of lime-encrusted river mussel shells, which were carefully set in horizontal rows using clay as mortar. The walls were faced with a thick layer of mortar made of ground shells. Occasionally, red-stone blocks were used on stairways, either as steps or on the sides to reinforce the stairways. The architectural characteristics and the dimensions of Group B platforms have led to suggest that this court hold a special function other than residential (L. Smith 1972:72-73, 119).

Archaeological research conducted at Cival, in central Petén, also has brought to light a modest-size E Group constructed by 800-700 B.C. This complex consisted of a radial platform (1-2 m high) that faced a low platform on the east (Figure 2.4). Like the early platforms at Ceibal, the eastern platform at Cival was carved out of a natural rise in the bedrock. The Cival early residents also deposited caches beneath the plaza floor

associated with the eastern structure. The first cache consisted of five jars, five upright celts and eleven jade pebbles placed in a three-level cruciform cut into the bedrock. In the second cache, the Cival inhabitants buried a large and defaced stela across the center line of the eastern platform (Bauer 2006; Estrada-Belli 2012:80).

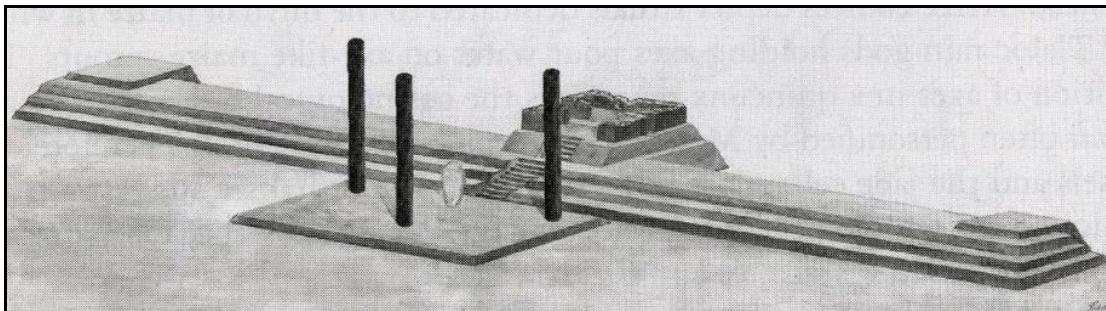


Figure 2.4. Rendering of E Group of Cival. The low rectangular platform was built during the Late Preclassic to elevate Stela 2 (After Estrada-Belli 2011:81, Figure 4.9).

In summary, archaeological excavations conducted in sites located in the Petén have provided relevant data to challenge the old perspective about the emergence of social complexity in the Maya lowlands. Based on current data, we can claim that public architecture was already being constructed by 850/800 B.C. at Ceibal and Cival in the form of E-group complexes. E Group assemblages were the earliest examples of formal plazas, and most likely they were settings for the performance of public rituals or other public activities (Estrada-Belli 2011:74; Inomata 2014b; Inomata et al. 2013). It is for this reason that the size of the plaza associated with the E Groups was crucial. Residents of Cival, El Mundo Perdido Group at Tikal and El Palmar put a lot of effort to maintain the dimensions of the plazas associated with their respective E Groups, even though these complexes underwent several construction phases from the early Middle Preclassic (Doyle et al. 2012; Laporte and Fialko 1995). The construction of E Groups in both

central Petén and Pasion River regions, along with their associated caches, conveys that populations bearing Eb and Xe ceramic traditions were interacting and sharing ideas about architectural patterns and ideologies.

During the late Middle Preclassic, the E Groups spread across the Petén territory. Nakbe and Güiro/Wakna in the Mirador Basin, El Palmar in the Valle de Buenavista, Tikal and Cival in the central Petén and Ceibal in the Río Pasi6n region all had E Group complexes associated with Mamom or Mamom-like ceramics (Estrada-Belli 2011; Hansen 1992; Inomata et al. 2013; Laporte and Fialko 1995; Morales et al. 2008). By this time, several sites across the Petén exhibited monumental architecture, sophisticated construction techniques and a variety of architectural forms, which signals the development of complex societies, perhaps in the form of complex chiefdoms.

Because of the early emergence of monumental public architecture and political complexity, the southern lowlands were considered by archaeologists to be the core of the Maya area as late as the 1980s. The lack of evidence for complex Middle Preclassic sites in the northern Maya lowlands strengthened this biased position. Such sites were not investigated because they were presumed not to exist.

2.2.3 No More a Periphery: The Northern Maya Lowlands

From the point of view of the traditional model stated in the second half of the 20th century, the northern lowlands were a peripheral area that was slightly inhabited during the Middle Preclassic with dispersed and small farming hamlets characterized by a segmentary tribal level of social organization (Figure 2.5). Complex societies appeared until the Late Preclassic (350 B.C.-A.D. 150) as a result of influence coming from the

southern Maya lowlands (Ball 1977). This model was corroborated by research conducted at Dzibilchaltún and Komchén, archaeological sites located in northern Yucatan (Andrews V et al. 1980; Andrews V 1981: 320; 1986: 41).



Figure 2.5. Map of the Northern Lowlands with the sites mentioned in the text.

Explorations carried out by the Dzibilchaltún project uncovered evidence suggesting that, during the Middle Preclassic, the Mirador Group was the center of a village, whose surrounding area consisted of small villages characterized by weak sociocultural integration (Andrews IV and Andrews V 1980; Andrews V 1981: 320; 1986: 41). The architectural evidence at the Mirador Group consisted of rectangular platforms with domestic function and some large architecture made of large cut blocks. During the Late Preclassic, Komchén had a substantial monumental core with some buildings having a public function (Andrews V et al. 1980). Structure 500, for example, consisted of a basal platform measuring 22 m along each side and 2.5 m high. It supported a 3-meters

tall superstructure (Andrews V 1981). The size and complexity of the site suggested that Komchén was at the top of a three-tiered regional settlement hierarchy (Ringle 1985:226).

Since the work of Andrews V in the Komchén area, the perspective of the nature of the Middle Preclassic occupations in the northern lowlands has been challenged. Data coming from several projects in the northern lowlands have revealed temporal parallels with emerging complexity in other parts of the Maya area and Mesoamerica. Archaeologically speaking, these occupations are defined by the early phase of the Nabanché ceramic tradition (800 B.C.-300 B.C.), regionally distinct from but similar to the Uaxactun Mamom ceramic complex.

Several sites in the Puuc region, for example, have reported late Middle Preclassic constructions beneath the Classic buildings (e.g., Huntichmul, Kiuic and Labná [Gallareta Negrón et al. 2002; May Ciau et al. 2006]). Most interestingly, explorations have discovered sites with only late Middle Preclassic occupations and complex architectural patterns, such as Paso del Macho. This middle rank site consisted of a 30-meters-by-45-meters plaza surrounded by twelve buildings. A triadic platform formed the western end of the compound while the opposite side consisted of a ball court (Gallareta Negrón and Ringle 2004; May Ciau et al. 2006). Paso del Macho architectural arrangement was very similar to that reported for the Preclassic site of Benatunas, another middle rank site located in northwestern Yucatan (Anderson 2005; Andrews and Robles Castellanos 2004).

Xocnaceh, another Puuc site, also had buildings arranged in a triadic pattern. These buildings were part of the site acropolis designated Group 1. Group 1 consisted of a basal platform that measured approximately 150 m along each side and stood 8.5 m above the surface. The basal platform supported eight structures that defined an open

space, the Gran Plaza. The buildings arranged into the triadic group were among those eight structures. The triadic group buildings have been considered the most important structures at the acropolis not only because of their arrangement but also because the tallest of them rose more than 20 m above ground level. The acropolis of Xonaceh has been considered the largest late Middle Preclassic structure known in the northern lowlands (Gallareta Negrón and Ringle 2004).

Late Middle Preclassic occupation has been also documented at another site located in the northern foothills of the Sierrita Puuc, the site of Poxilá. The architectural core of Poxilá consisted of several platforms and low mounds scattered in a radius of 600 m. The main construction of the site, Structure 1, has been dated almost exclusively to the late Middle Preclassic. Structure 1 consisted of a large 100-meters-by-90-meters basal platform that stood 2.5 m above the ground level. This basal platform was crowned by large structure on its northern side. This superstructure measured 40 m by 80 m and it rose an additional 10 m above the basal platform surface (Figure 2.6). The construction techniques and architectural decoration of Structure 1 were similar to those described for Xocnaceh, which may mean that both sites were part of the same cultural sphere (Robles Castellanos et al. 2006).

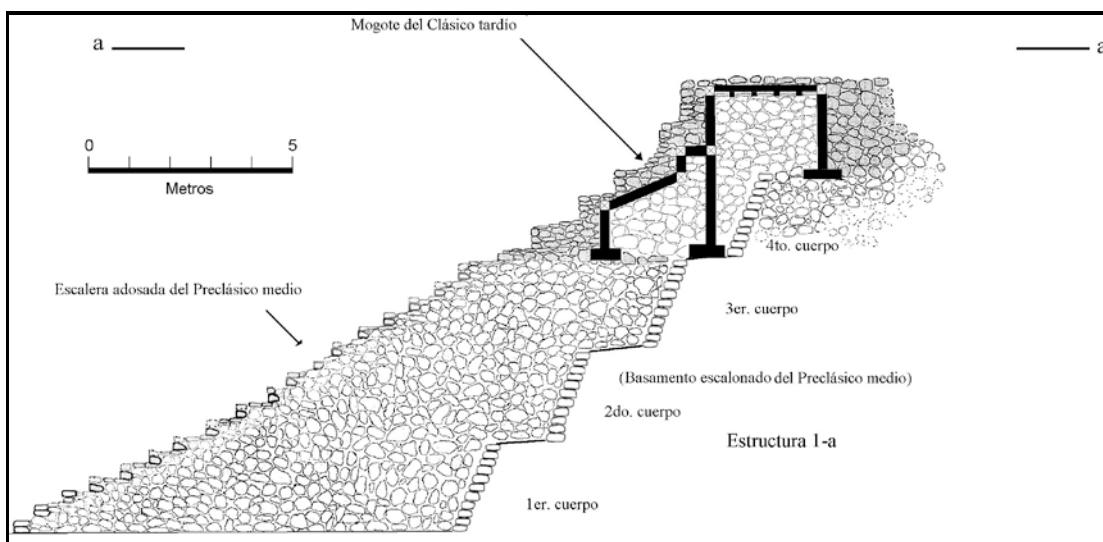


Figure 2.6. Cross-section of Structure 1 of Poxilá (After Robles Castellanos et al. 2006).

In the northeast sub-region, excavations at Yaxuná have revealed that many of the structures integrated into the site core, such as 5E-19 and 6E-30 Groups, have Middle Preclassic constructions. The 5E-19 Group was a basal platform supporting a six-meter-tall pyramid and two small flanking structures, while 6E-30 Group could have been a high-status residential group. Even Sacbe 6, which runs almost north from the 6E-30 Group, might be dated to the Middle Preclassic period (Stanton and Ardren 2005:217).

In the northwestern Yucatan, surveys conducted by the Proyecto Costa Maya have helped advance in our understanding of this zone of the northern lowlands (Robles Castellanos and Andrews 2000, 2001, 2003). The Costa Maya Project's team discovered 116 sites that were occupied during the Middle Preclassic period. Those sites were arranged in a three-tiered regional hierarchy of hamlets with a few scattered mounds, middle ranked sites and large settlements with formal architecture around plazas (Andrews and Robles Castellanos 2004:8). Twenty four of those sites had a ball court with a standard north-south alignment. Most of the ball courts were located near the

centers of second-tier settlements, often near small acropolis, although ball courts were also found in one first- and one third-tier settlement (Anderson 2010, 2012; Andrews and Robles Castellanos 2004:8).

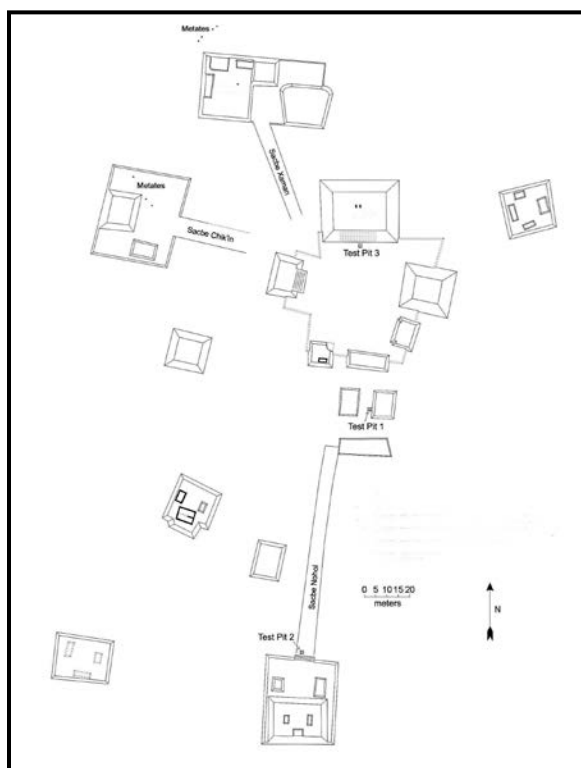


Figure 2.7. Architectural core of Xtobó (After Anderson 2005).

Xtobó was one of the two sites belonging to the top tier of settlements in the region (Figure 2.7). Its center consisted of a well-organized plaza flanked by two eight-meter-tall mounds. The small ball court of the site was located immediately south of the plaza. Radiating out of the plaza were five causeways leading to high-status residential buildings, a pyramid, and two triadic groups (Anderson 2010, 2011). Xtobó shared the place of a regional center with Komchén, which lately has been redefined as a Middle Preclassic site by Andrews V and colleagues (2008). While sites like Xocnaceh, Xtobó

and Poxilá were at the top of the three-tiered settlement hierarchy in their respective regions, Xamán Susulá was representative of the next level (Peniche May 2010, 2012a).

Xamán Susulá was a middle ranked site that was first occupied during the late Middle Preclassic, but the construction peak was at some point during the Middle to Late Preclassic transition. The architectural arrangement of Xamán Susulá was very special and it represents a unique case in northern Yucatan and elsewhere in the Maya lowlands. The site core consisted of an eastern open plaza defined by six structures that was connected to a large, western basal platform by a 74-meters-by-7.5-meters *sacbe* or causeway. A key-hole shape round structure was located at the middle point of the northern edge of the *sacbe*. The most interesting construction of Xamán Susulá was Structure 1714, located on the western basal platform of the architectural core (Figure 2.8).



Figure 2.8. Architectural core of Xamán Susulá (from Google Earth).

During the late Middle Preclassic, Structure 1714 consisted of two independent units (Figure 2.9). In its early stage, the eastern unit consisted of a basal platform that supported two rectangular platforms with rounded corners on its northeastern and

northwestern edges. Later, a small apsidal platform was added in the eastern side of the platform. This apsidal platform was modified twice. It was first converted into a rectangular building with rounded corners and later into a rectangular building with squared corners. West of this platform, two subsequent building foundations were discovered, but they were not totally explored. During the Middle to Late Preclassic transition (~400 B.C.) the basal platform and the western structures were integrated to form a larger basal platform that supported a room holding a throne-like bench. The central door of this building was facing towards the *sacbé* and the eastern plaza.

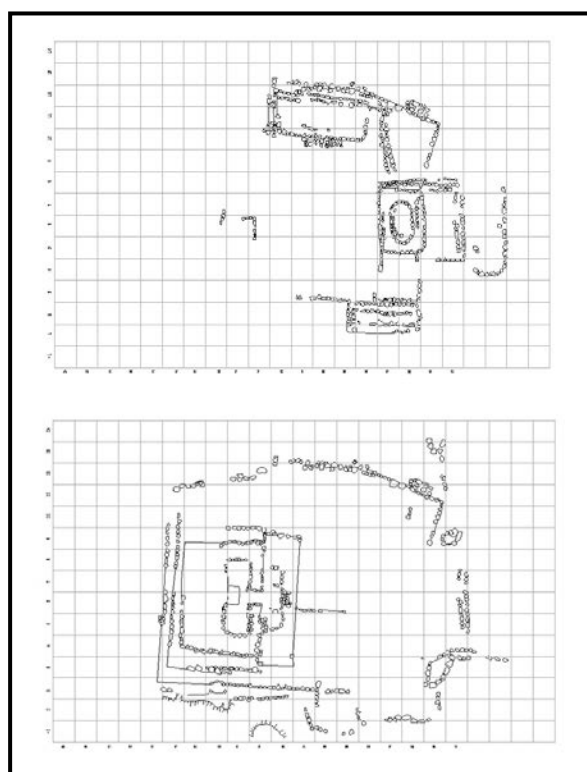


Figure 2.9. Structure 1714 of Xamán Susulá. The upper image is the earliest construction stage, while the bottom image corresponds to the building constructed during the Middle Preclassic – Late Preclassic transition (After Peniche May 2012a).

In brief, the current data suggest that, unlike the view of the traditional model, the

northern lowlands was occupied at some point during the early Middle Preclassic. By the end of the late Middle Preclassic, settlements varied in complexity indicating the presence of complex chiefdoms. Xtobó and Komchén represented the top-tier of a three-tiered settlement pattern hierarchy, while sites like Paso del Macho in the Puuc and Xamán Susulá in the northwestern Yucatan were some of the several sites that occupied the second-tier. The end of the spectrum in the settlement pattern hierarchy was occupied by a myriad of sites, such as the small settlements located around Candel (Uriarte Torres 2010).

Like the northern lowlands, the Belize Valley also has been considered as a peripheral region but, unlike the northern lowlands, the Belize Valley has a longer history of research of the Middle Preclassic. Interestingly, the Belize Valley can be considered a unique region of the Maya lowlands because of its Middle Preclassic ceramic traditions.

2.3 THE BELIZE VALLEY DURING THE MIDDLE PRECLASSIC: A NON-MAMOM BEARING POPULATION IN THE MAYA LOWLANDS?

In contrast to northern Belize and northern lowlands, archaeologists have been aware of the Middle Preclassic occupation in the Belize Valley (Figure 2.10) since the first half of the twentieth century when excavations were conducted at Baking Pot, Benque Viejo or Xunantunich, Nohoch Ek and San José (Coe and Coe 1956; Ricketson 1929; Thompson 1939, 1942). Like other regions, however, there was no interest in investigating Middle Preclassic populations, because they were considered egalitarian societies. In the 1950s, the Belize Valley Archaeological Project directed by Gordon R. Willey conducted their excavations at the site of Barton Ramie and established the first

regional ceramic sequence for the Belize Valley (Willey et al. 1965; Gifford 1976). This sequence started with the Jenney Creek ceramic complex, whose early facet was considered pre-Mamom, while the late facet was temporally and formally related to the Uaxactun Mamom ceramic complex. The Barton Ramie investigations—that included the exploration of domestic architecture and the site layout during the Middle Preclassic—confirmed the model of egalitarian political organization.



Figure 2.10. Map of the Belize Valley showing the sites mentioned in the text.

The temporal, ceramic and political models proposed by Willey's project remained unchallenged by almost 30 years. The situation changed when investigations conducted at Cahal Pech during the late 1980s uncovered a lengthy occupational

sequence, whose earliest contexts produced early Middle Preclassic pottery named Cunil (Awe 1992; Awe et al. 1990; Sullivan et al. 2009). This discovery attracted the interest of archaeologists, who were concerned with the first settled populations in the Belize Valley. Several projects at Cahal Pech and Blackman Eddy planned excavations with the goal of defining and understanding the temporal parameters of the Cunil ceramic complex and their relationship to other equally early assemblages (e.g., Eb, Xe, and Swasey-Bladen). Likewise, those projects sought to investigate the architectural sequence of buildings, ritual behavior and inter-regional interaction as they evidenced the rise of social inequality (Ball and Taschek 2003; Brown 2007; Garber, Cochran and Awe. 2007; Powis and Cheetham 2007).

Aside from Cunil contexts, archaeologists working on the Belize Valley also uncovered contexts associated with ceramics similar to the Jenney Creek complex of Barton Ramie (Gifford 1976). This ceramic complex has been named Kanluk at Cahal Pech (Awe 1992). The Kanluk-phase ceramics have been dated to 1100/1000-300 B.C. (Awe 1992) and, in consequence, they are partially contemporaneous with Eb, Xe, and Swasey-Bladen assemblages and the later Mamom tradition. The Jenney Creek/Kanluk ceramic materials, nevertheless, have resulted quite different from those uncovered in other regions of the Maya area.

2.3.1 The Middle Preclassic Ceramic Tradition in the Belize Valley

Early excavations conducted at different sites throughout the Belize Valley apparently confirmed the existence of a Mamom ceramic tradition as defined at Uaxactun (Coe and Coe 1956; Thompson 1939, 1942; Willey et al. 1965). Gifford (1976; Willey et

al. 1965:27, 324) stated that he had identified a Mamom-like ceramic complex at Barton Ramie that he called Jenney Creek. Because subsequent ceramic complexes of Barton Ramie were equivalent to those of Uaxactun, Gifford (1976) argued that the Belize Valley was culturally part of the southern Classic Maya lowlands. Willey and Gifford strengthened this argument stating that the major Belizean sites participated in many Classic southern lowlands traditions—vaulted architecture, carved and dated stelae, hieroglyphics, etc.—but these traditions appeared peripheral to that of the northeastern Petén due to the size of the monumental architecture.

Gifford (in Willey et al. 1965:325) claimed that there were specific ceramic type relationships between Uaxactun Mamom types and Barton Ramie types. Gifford recognized that there were dissimilarities between the Uaxactun and Barton Ramie assemblages but he stated that those dissimilarities were of a technological order and reflected regional differences. The Jocote Orange-brown, Sayab-Daub Striated and Palma-Daub types were used as examples. The Jocote Orange-brown type was reported as unique to the Jenney Creek ceramic complex, while Sayab-Daub Striated and Palma-Daub—major types at Uaxactun—were minor elements in the Barton Ramie assemblage. Because Sayab-Daub Striated and Palma-Daub were uncovered in circumstances that suggested a late positioning in the Jenney Creek ceramic complex, Gifford (in Willey et al. 1965:327) proposed the division of Jenney Creek complex into two facets. From this perspective, the early facet was related to the Xe sphere and, therefore, dated slightly earlier than the Mamom ceramic complex of Uaxactun, which was equivalent to the late facet of the Jenney Creek ceramic complex.

The so-called “regional differences” between Mamom types of Uaxactun and

Jenney Creek types of Barton Ramie led to question the close relationship between those ceramic complexes. Ball and Taschek (2003:188, 191) have disagreed with the idea that the Jenney Creek complex was affiliated to the Mamom tradition. These archaeologists argue that Mamom types (e.g., Joventud Red, Chunhinta Black and Pital Cream) were not abundant in the Belize Valley assemblage of the Middle Preclassic. Rather Mamom ceramics were “a distinctive and culturally important but nonetheless secondary minority set” that represented the local circulation of exotic vessels produced elsewhere (Ball and Taschek 2003:196). The fingerprint of the Belize Valley region was a set of locally manufactured pottery represented by the domestic Jocote group and a sophisticated component composed by the Mars Orange Ware and local imitations of Mamom types. These local imitations were diagnostic types of the late facet of the Jenney Creek complex (Ball and Tascheck 2003:196).

Ceramic material uncovered from several sites (e.g., Blackman Eddy, Cahal Pech, Chan, Pacbitun, Xunantunich, Buenavista del Cayo) have confirmed the predominance of the Jocote and Savana groups and the minority of Mamom types in the Belize Valley (see Chapter 5). Further analyses also have proposed that Jocote and Savana groups developed out from Cunil pottery (Sullivan and Awe 2013:166). The addition of Mamom types into the Jenney Creek assemblage is now considered as the main attribute to distinguish between the early and late facets of this ceramic complex (Table 2.3).

Table 2. 3. Ceramic complexes from sites of the Belize Valley.

MAJOR PERIODS	TIME	XUNANTUNICH (LeCount et al. 2002)	BARTON RAMIE (Gifford 1965)	CAHAL PECH	BLACKMAN EDDY (Brown & Garber 2005)	PACBITUN (Le Count et al. 2002)
			HERMITAGE			
PROTO-CLASSIC	300	PEK'KAT	FLORAL PARK	BARTON CREEK	BARTON CREEK	KU
	200					
	100					
	AD/B C		MOUND HOPE			
LATE	100	OK'INAL	BARTON CREEK			PUC
	200					
PRECLASSIC	300	NOHOL	JENNEY CREEK	KANLUK	JENNEY CREEK	MAI
	400		Late facet			
	500		Early facet	Early facet	Early facet	
	600					
	700					
	800	MUYAL		CUNIL	KANOCHA	
	900					
EARLY	1000					
	1100					
	1200					

2.3.2 Digging up and Interpreting Architecture: The Built Environment throughout the Jenney Creek phase

During their excavations at Nohoch Ek in 1949, Coe and Coe (1956) exposed the first Middle Preclassic architecture in the Belize Valley. This building consisted of a 45-cm high platform with a plastered surface and a small masonry step. This architecture

was apparently associated with Mamom-like pottery, although the described ceramic seems to correspond to the Savana ceramic group. Coe and Coe (1956:374) concluded that even though a Middle Preclassic platform had been discovered it was not possible to claim that “this construction represents the emergence of organized ceremonialism with full-time specialization and social construction.” The architectural evidence recovered at Barton Ramie during the 1960s led to a similar conclusion.

At Barton Ramie, the earliest evidence of architectural vestiges reported dated to the Jenney Creek phase (Willey et al. 1965) and consisted mainly of “occupations” (meaning locations where perishable structures were built directly on the original ground surface) and three low platforms. This evidence suggested that Middle Preclassic occupation in the Belize Valley was egalitarian. Nevertheless, investigations conducted at some Belize Valley sites (e.g. Cahal Pech, Blackman Eddy, and Xunantunich) in the last three decades have changed those interpretations. These recent explorations have exposed public architecture dating to the Middle Preclassic suggesting the existence of social inequality since this early time.

Excavations carried out on Structure B-4 at Cahal Pech during the late 1980s provided a quite detailed and lengthy stratigraphic sequence in which buildings were increasing in complexity (Awe 1992; Cheetham 1996, 1998; Healy et al. 2004; Figure 2.11). The first construction phases dated to the Cunil phase (1100/1000-900 B.C.) and consisted of domestic, circular platforms supporting superstructures made of perishable materials. The final Cunil construction consisted of a rectangular building made of perishable materials, whose exterior walls were plastered and finished with stripes of red paint. This pole-and-thatch building rested on a 20-cm tall platform made of stones that

were also faced with plaster. During the following Kanluk phase (900-350 B.C.), the inhabitants of Structure B-4 constructed large basal platforms with plastered surfaces that supported superstructures made of perishable materials. Based on their morphological characteristics, it has been proposed that the Kanluk constructions did not hold a domestic function. Rather they were public spaces.

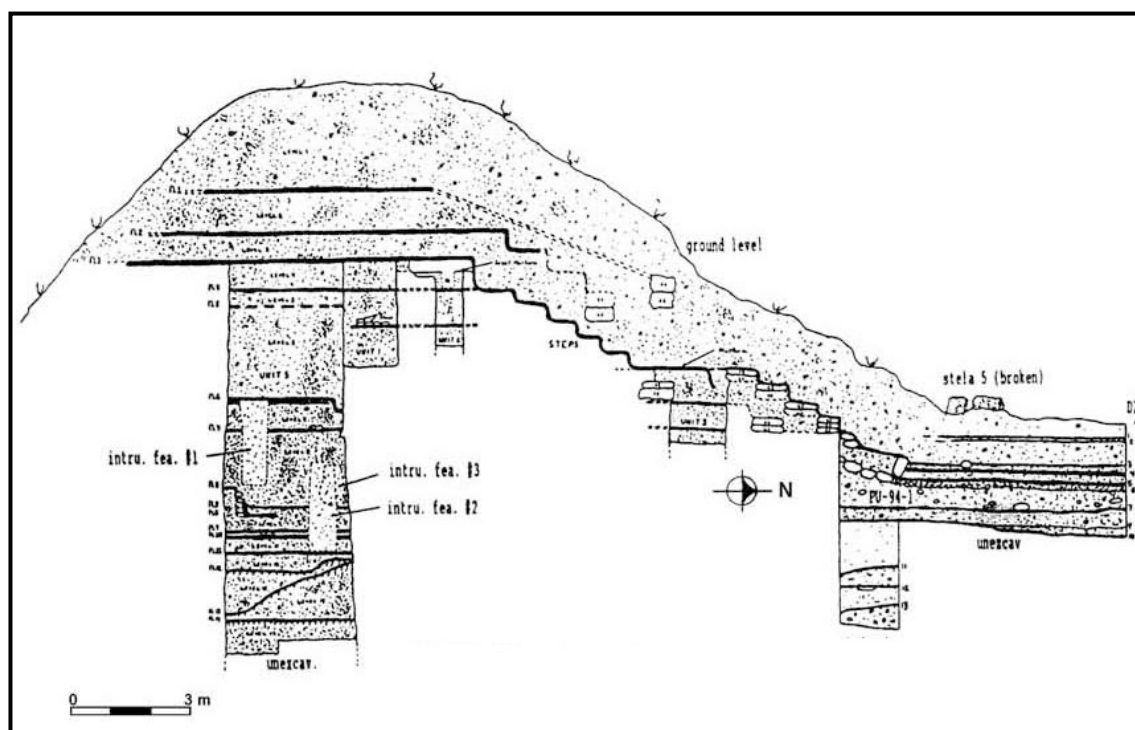


Figure 2.11. Construction sequence of Structure B-4 in Cahal Pech (After Awe 1992).

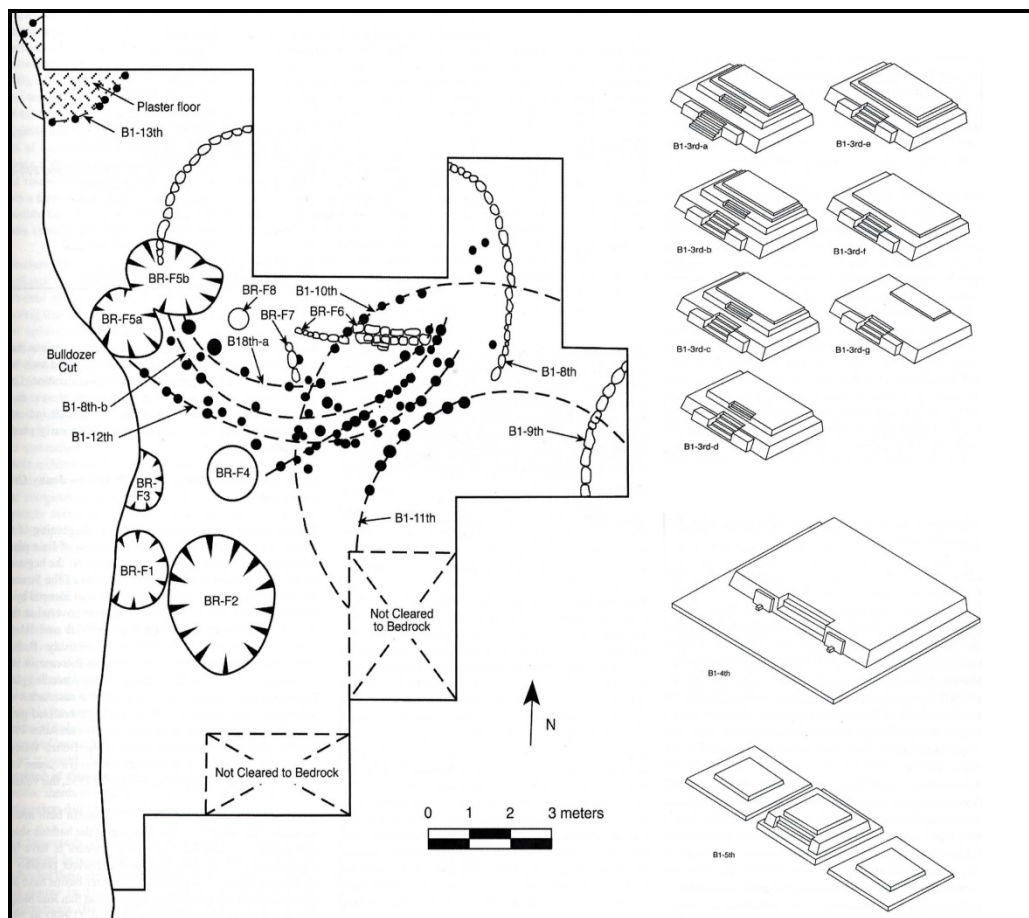


Figure 2.12. Substructures beneath Structure B-1 at Blackman Eddy. The image at the left corresponds to the Kanocha constructions, while the right image illustrates the Jenney Creek substructures (After Brown and Garber 2005a).

Excavations conducted at Structure B1 of Blackman Eddy have also revealed a construction history spanning from 1100 B.C. to A.D. 900 (Brown and Garber 2005:39-40; Garber et al. 2002, 2004a). The construction sequence started around 1100 B.C. with a series of bedrock-level occupations that were evident through a series of postholes cut into bedrock (Figure 2.12). These occupations have been interpreted as circular constructions with a domestic function. Low apsidal platforms with a tamped earthen floors and perishable superstructures were also constructed in a later time.

Around 900 B.C., there were important architectural changes represented by the

extensive use of plaster and trimmed block masonry, the construction of public architecture, and the common occurrence of dedicatory and termination deposits. The first public buildings consisted of two consecutive low rectangular platforms covered in thick plaster. A plaster-lined, bathtub shaped basin was built into the summit of the earliest rectangular platform, while the other building supported a circular platform (Brown and Garber 2005a:43, 2005b:57; Garber et al. 2004:37). Later, the rectangular platforms were transformed into a linear triadic complex consisting of a central platform flanked by two lower platforms. While the central platform stood 1.48 m above the associated plaza surface, the eastern and western platforms were 68 cm in height. The entire complex was covered by a layer of hard plaster. Openness and unrestricted nature of these early public buildings, along with large deposits interpreted as communal feasting remains, suggested that they functioned as special ceremonial locations and integrative features within the community (Brown and Garber 2005a:44-45; Garber et al. 2004).

By the late Jenney Creek phase, there was another shift in the architecture. The ancient inhabitants constructed a single tiered rectangular high platform with an inset staircase and an extended basal platform. Flanking the staircase was a fragmented stucco mask facade. The building beneath Structure B-1 was again modified when a large, rectangular platform with outset platforms flanking an inset staircase was built. Large monolithic cut blocks were used to construct this building. This structure was modified three times during the Middle Preclassic by adding superstructural platforms. The last of these modifications introduced the pyramidal architectural style and a shift in ritual behavior, represented by a sub-floor cache. According to Brown and Garber (2005b:59),

both the pyramidal form and sub-floors caches deposits indicate that the public building became a restricted space only used by elite members of the society.

Although investigations at Xunantunich are still ongoing, archaeologists from the Mopan Valley Preclassic Project have discovered that the construction of public architecture at Group E started as early as the Middle Preclassic (Brown 2010, 2013:58; Brown et al. 2011, 2013:139-141). Group E consisted of a sloping plaza framed by two pyramids at its western and eastern sides (Structures E-1 and E-2). The two earliest phases of the eastern structure came into being during the Middle Preclassic. The earliest phase has not been fully exposed. Nevertheless, archaeologists think it was represented by a low and broad platform that was rectangular in shape. This structure was completely covered by the next construction phase. The new construction consisted of a two-tiered superstructure set on a low broad basal platform with inset corners. The central staircase of this structure was inset into the basal platform in its lowermost portion, while the midsection was outset from the upper two-tiered platform. In order to construct this pyramidal building, the ancient inhabitants of Group E used large trimmed stones embedded with white marl. The form of the Structure E-2, along with its association with the western structure, resembles the eastern building of an E-Group (Figure 2.13).

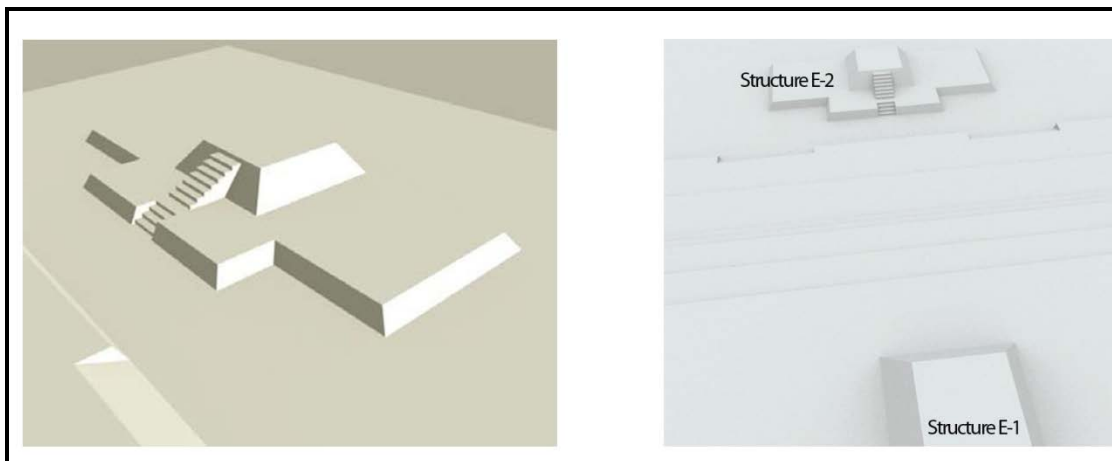


Figure 2.13. Group E of Xunantunich. The left image corresponds to the eastern structure of Group E, while the image at the right represents the western and eastern buildings that bordered the plaza (After Brown 2013:3; Brown et al. 2013:139).

Just in front of the staircase of the eastern pyramid, there were a series of postholes in the plaza forming a small, round feature that could represent the remains of a wooden altar. During the excavations, it was noticed that several of these postholes were covered with plaster, suggesting that the wooden feature was erected and then removed several times, with the resulting postholes patched. The presence of this perishable altar would reinforce the hypothesis that Group E assemblage was used as a public, ceremonial space (Estrada-Belli 2011; Inomata 2014b).

Aside from the two pyramids, Group E also contained a flat topped platform measuring 100 m by 115 m and 13 m high on its tallest side. This massive platform was built taking advantage of a natural hill. This massive platform could represent one of the largest Middle Preclassic structures in the Maya lowlands (Brown 2013:58; Brown et al. 2011).

It is worthwhile to mention that Xunantunich Group E investigations have not

discovered a construction sequence as long as the sequences recorded at Blackman Eddy and Cahal Pech. Even though Cunil pottery has been uncovered at Group E, these materials were not associated with architecture. Cunil architecture could have been made of perishable materials, destroyed, or not yet excavated. Based on the available data, however, archaeologists have suggested that Xunantunich Group E area was occupied at some point during the Jenney Creek phase. Research conducted at Barton Ramie, Pacbitun and Chan have corroborated data coming from Xunantunich Group E, revealing that Belize Valley sites were not settled at the same time. Research at those sites has provided information coming from residential architecture rather than public spaces.

Excavations carried out at Plaza B of Pacbitun—a site located at the southern periphery of the Belize River Valley, only 3-4 kilometers away in the Pine Ridge region of the Maya Mountains—have proved that this site was founded during the early Middle Preclassic. Twelve Middle Preclassic structures have been identified below Plaza B surface (Powis 2009, 2010; Powis and Healy 2012). All of these platforms were rectangular in shape, had hard-pack marl floors and were built using roughly cut stones (Figure 2.14). At least one structure measured approximately 8 m by 5.25 m (Figure 2.15). The only difference between the early and late Middle Preclassic platforms was their height. The platforms dating to the early Middle Preclassic were two-courses high, while the late Middle Preclassic platforms were three-courses tall. Based on postholes discovered in some buildings, it has been suggested that these Middle Preclassic platforms supported buildings made of perishable materials.

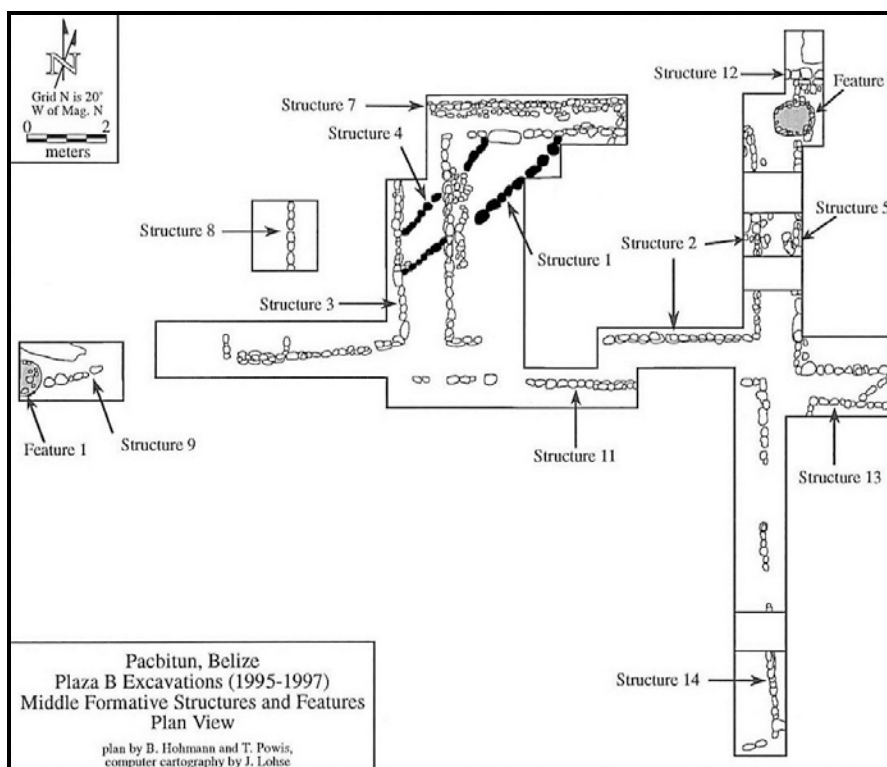


Figure 2.14. Middle Preclassic structures beneath Plaza B, in Pacbitun (Powis 2009:10).

Apparently, these platforms all likely served domestic functions as it was indicated by the presence of common domestic refuse both inside and surrounding these platforms. The spatial distribution of the domestic platforms dating to the late Middle Preclassic is interesting. These platforms were placed parallel to one another and were separated by one-meter alleyway. Based on the close proximity, the common extramural areas and the associated domestic refuse, Powis (2009) has pointed out that these platforms were organized as a domestic patio group with several structures situated around an open plaza or patio.



Figure 2.15. Sub-structure B-2 of Pacbitun. This structure dates to the late Middle Preclassic structures and is considered as a domestic platform (Powis 2010:14).

Apparently, these platforms all likely served domestic functions as it was indicated by the presence of common domestic refuse both inside and surrounding these platforms. The spatial distribution of the domestic platforms dating to the late Middle Preclassic is interesting. These platforms were placed parallel to one another and were separated by one-meter alleyway. Based on the close proximity, the common extramural areas and the associated domestic refuse, Powis (2009) has pointed out that these platforms were organized as a domestic patio group with several structures situated around an open plaza or patio.

Powis (2009) has suggested that an egalitarian form of political organization prevailed at Pacbitun during the early Middle Preclassic (900-600 B.C.), which shifted to a more hierarchical system during the second half of this period, when shell bead production increased, as well as long distance exchange. Another line of evidence to

support this hypothesis consists of a massive public building unearthed below Plaza A. This building has been named as “El Quemado” or “Q” as it exhibits marks of intensive burning on large percentage of its surface (Davis and Powis 2015; Micheletti and Powis 2015; Figure 2.16).



Figure 2. 16. El Quemado from west (After Davis and Powis 2015:94, Figure 4).

So far, El Quemado measures 25 m east-west by 12 m north-south and stands approximately 2.5 m tall. It is worth mentioning, however, that the building has not been fully exposed as its northern side rests beneath a Classic building (Structure 3). Apparently, the building summit was an open space that did not support any perishable building as excavations have not revealed evidence of postholes. The summit was reached through staircases located on the three exposed sides—east, west and south. It is believed that a fourth staircase was located in the hidden northern side. If this hypothesis is correct, it would mean that El Quemado displayed a radial shape. The building was

likely adorned with stucco masks on at least the three exposed sides. Unfortunately, the masks were so badly preserved that only the armatures were recorded during the excavations. Based on the evidence recovered during the excavations, it has been established that El Quemado building was constructed in a single construction phase around 700 B.C. It was abandoned by 400 B.C when it was completely covered by a thick layer of muck.

The architectural traits of El Quemado indicate that this building held a public function (Davis and Powis 2015; Micheletti and Powis 2015). The specific nature of this public function has not been established yet as its relationship with other architecture in Plaza A is unknown as yet. Davis and Powis (2015) discuss three hypotheses. First, the features of El Quemado resemble the Structure E-VII-Sub at Uaxactun, a radial structure adorned with masks that served as the western building of the Uaxactun E-Group. Based on these similarities, El Quemado could have been the western structure to an early E-Group. The second hypothesis states that El Quemado would be one of the E-Group eastern structures. The third hypothesis points out that El Quemado also could have been a stand-alone temple and an earlier version of Structure 3, located in the northern side of Plaza A.

Chan was also occupied during the Middle Preclassic, but unlike Xunantunich and Pacbitun, its first occupation dated to the second half of this period, around 650 B.C. (Robin et al. 2012a, 2012b). Aside from the time of its foundation, Chan have also provided valuable and unique information regarding the spatial arrangement and political organization of a small settlement. The site core of Chan settlement during the late Middle Preclassic was placed at a locally high promontory and consisted of a largely

open space bordered, on the north and south ends, by two low domestic platforms (25 cm and 20 cm in height, respectively). No public architecture was built during this time but communal ritual activities were carried out in the central plaza (Robin 2012c). A series of five caches and a burial were placed in the center of Chan plaza as part of those ritual performances (Kosakowski et al. 2012). Although the characteristics of the non-leaders' residences are not known, the Chan archaeological team could determine that the residences of that population were clustered around the site core.

No site existed in isolation. Rather, settlements were part of a larger sociopolitical network of interacting sites in which their privileged groups or individuals competed for control over limited resources in order to wield “power over” their fellow countrymen and other communities (Brown 2008). Therefore, in order to study questions related to the nature and dynamic of political complexity, researchers must understand the regional political landscape.

2.3.3 The Belize Valley from a Regional Perspective

What do we know about the relationship among sites in the Belize Valley during the Middle Preclassic period? Brown (2008) has stated that, during this period, the Belize Valley sites were arranged in a three-tiered settlement pattern hierarchy. Nevertheless, this period encompasses 600 years during which the dynamics of interaction and the strategies that the factional parties used to acquire, maintain and enhanced their “power over” could have changed. In order to solve this issue, it is necessary to rethink the question stated above.

Based on data from different sites, currently, we know that the initial colonization

of the Belize Valley started as early as 1100/1000 B.C., when people using Cunil/Kanocha ceramic founded their settlements in high hilltops. Actuncan, Blackman Eddy, and Cahal Pech were among those early sites (Awe 1992; Brown 2010; Brown and Garber 2005a, 2005b; Mixter 2012). These sites participated in long-distance networks as it is suggested by the presence of exotic items and vessels with incised pan-Mesoamerican motifs recovered at Blackman Eddy and Cahal Pech (see Chapter 5). At Cahal Pech, those exotic items and vessels with pan-Mesoameric motifs were mainly localized in the Cunil substructures of Structure B-4. The spatial distribution of exotic objects and iconography, as well as the differential elaborateness of the Cunil residences at Cahal Pech, signals that some incipient social differentiation was present at this early time. Nonetheless, based on the material and architectural manifestations, the inhabitants of the Belize Valley during this phase are considered to have been egalitarian (Cheetham 1998).

During the early Middle Preclassic period (900-600 B.C.) population grew steadily and began to disperse throughout the Belize Valley. Population, nevertheless, focused on the alluvial bottoms of the valley (Fedick 1989). Sites like Buena Vista del Cayo, Pacbitun and El Pilar were first settled during this time (Ball and Taschek 2004; Ford 2004; Powis 2009). The political dynamics in the regional level are not well understood yet. Nevertheless, the appearance of public buildings at sites like Cahal Pech and Blackman Eddy would suggest that the political organization underwent a change. The first local elites would have appeared during this time (but see Powis 2009).

During the late Middle Preclassic period (600-300 B.C.), the population continued growing and, as a result, there was an extensive occupation of the Belize Valley. Aside

the valley bottoms, people settled in the surrounding higher elevations with well-drained soils (Fedick 1989). Actuncan, Baking Pot, Barton Ramie, Buena Vista del Cayo, Cahal Pech, Chan, Nohoch Ek, Pacbitun, El Pilar, Xunantunich's Group E, and other sites, exhibited evidence of occupation during this time (Awe 1992; Ball and Taschek 2004; Brown 2009; Coe and Coe 1956; LeCount and Keller 2011; Powis 2009; Robin et al. 2012a; Willey et al. 1965). Some settlements developed around public buildings (e.g., Xunantunich Group E, Pacbitun, Cahal Pech and Blackman Eddy), which were highly variable in terms of the amount of labor invested during their construction. Other sites were isolated farmsteads with no public architecture (e.g., Chan and Nohoch Ek).

This difference among the sites suggests that it was likely during this time when the three-tiered hierarchy of settlements was established (Brown 2008). It is highly plausible that the incipient social differentiation present during the early half of the Middle Preclassic increased during the next 300 years leading to the emergence of social hierarchy.

The social mechanisms that led to this change in the regional and local political organization, however, are still poorly understood. Brown and Garber (2005a) have stated that communal feasting rituals sponsored by certain members of the society and performed on public structures played an important role in the shift of political dynamics occurring during the Middle Preclassic period—from egalitarian to hierarchical political organization. Nevertheless, as they have argued other social mechanisms must have been used by the leaders and emergent elites to compete for prestige, authority and “power over”.

Beyond the Belize Valley, we know based on the architectural remains that an

array of political changes was also occurring in other Maya lowland regions. Apparently, these regions were culturally affiliated during the late Middle Preclassic as they all recorded the presence of Mamom or Mamom-like pottery. As it was mentioned above, the Belize Valley region stood out as an exception. In this eastern region, the ceramic hallmarks were the Mars Orange ware and Jocote group, while the percentage of Mamom ceramics in the ceramic assemblage was usually small (Ball and Tascheck 2003). Based on this ceramic evidence we can point out that, although Belize Valley populations participated in the lowland Maya interaction network, they could have not been culturally affiliated to the people living in other regions of the Maya lowlands. Nevertheless, architectural evidence seems to suggest a different position since the Belize Valley and other Maya lowland regions shared architectural forms in both public (e.g. E-Group) and domestic buildings, as it can be inferred from the evidence presented above.

Several questions rise based on the previous local and regional background. These questions are concerned with the range of social mechanisms that were in play in the Middle Preclassic Belize Valley through which, elites maintain and enhance their “power over” those non-elite people. In addition, I also examine the interplay between Belize Valley and the territory occupied by Mamom-bearing populations. The pre-Hispanic Maya center of Cahal Pech is a case in point where these questions can be investigated. Cahal Pech is one of the few sites in the region with a lengthy, continuous, and well-documented occupation (1100/1000 B.C.-A.D. 1000) (Awe personal communication 2012), offering the opportunity to document long trajectories of social change—from egalitarian to state society, including the crucial transitional political formation: the chiefdom (Awe 2008; Ball and Taschek 2003; Cheetham 1998).

CHAPTER 3.

CAHAL PECH: A LONG-LIVED MAYA CENTER IN THE BELIZE VALLEY

3.1 INTRODUCTION

Cahal Pech is an archaeological site located in the outskirts of the modern town of San Ignacio (Cayo District) and approximately 2 km south of the convergence of the Macal and Mopan Rivers. In pre-Columbian times, this close access to the Macal and Mopan Rivers and their interfluvial bottomlands provided a strategic position for farming and exchanging goods and ideas. Perhaps because of this strategic location, Cahal Pech had a long-lived occupation spanning from the beginning of the Middle Preclassic (1100/1000-350 B.C.) to the Terminal Classic (A.D. 900-1000). It was during the Late Classic (A.D. 600-900) when the site reached its florescence peak. During this time, the site encompassed an approximate area of 10km²; with the central precinct covering approximately 1.5 hectares (Figure 3.1).

Built on the crest of a steep hill located 270 m above sea level, the Cahal Pech central precinct consists of an acropolis composed of at least 34 structures (including temple-pyramids, range structures, ball courts, etc.), which are mostly arranged around seven plazas (Awe 1992; Healy et al. 2004). These plazas are set in an east-west axis and are arranged in such a way that they provide very restricted access to the site core. In fact, there are only two areas to enter the central precinct, located to the northeast and southwest ends of Plaza B. Plaza B also constitutes the largest plaza (approximately 50m by 30m) and the earliest and longest-lived locus of architectural built around 1100/1000 B.C. (Awe 1992:206, 2008; Healy and Awe 1995:1999; Healy et al. 2004; Figure 3.2).

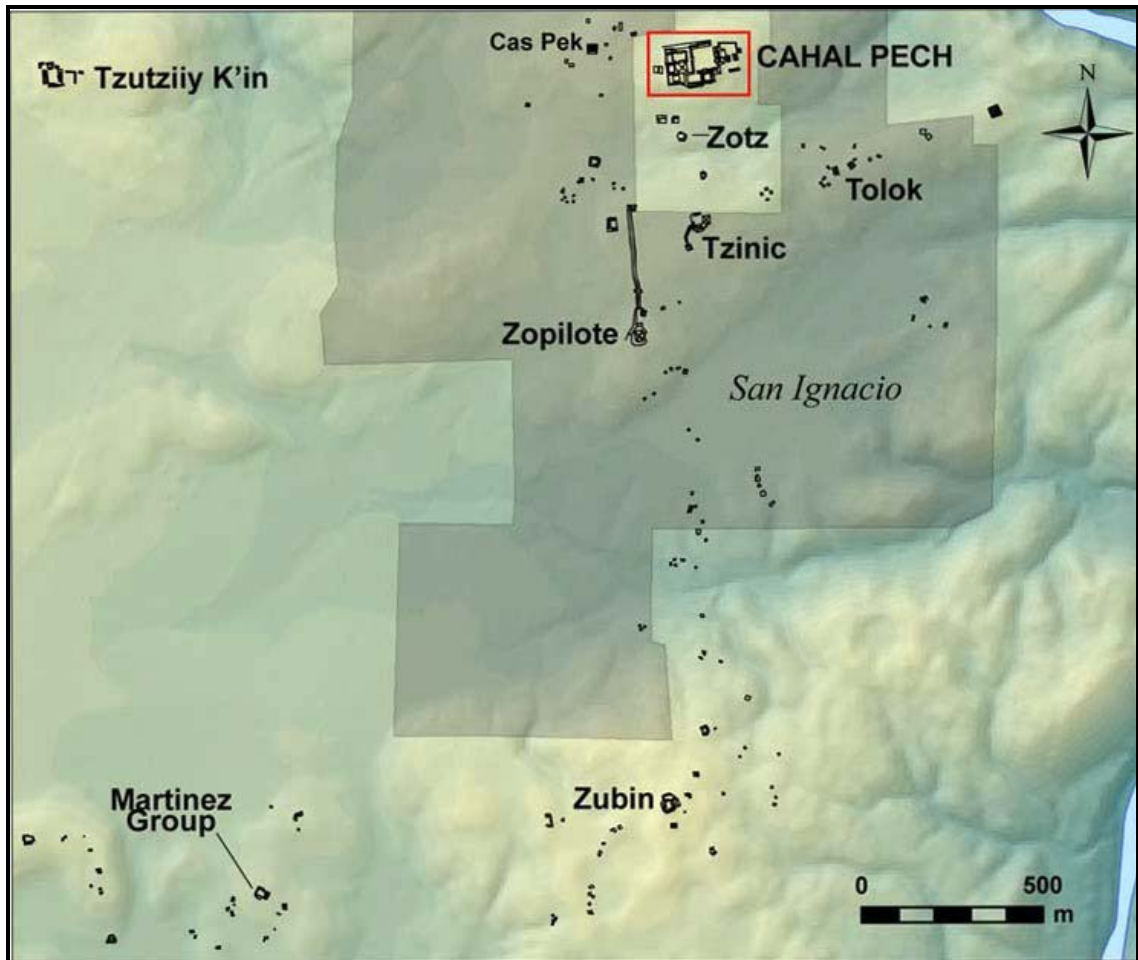


Figure 3.1. Map of Cahal Pech showing the relationship between the site core and known peripheral settlements (Ebert et al. 2016:4).

In the sustaining area of the central precinct, there are a number of large settlement clusters (e.g., Tzinic, Cas Peck, Melhado, Cayo Y and Tolok), minor centers (e.g., Zubin), plazuela groups (e.g., K'ik, Zotz, Pepeng, Chechem, Nax Che and Figueroa), residential units, isolated house-mounds, and a *sacbe* termini complex (i.e., Zopilote). These peripheral groups are usually located within one kilometer of the site core, except for Zubin and Cayo Y, which are situated approximately 2 km south of the central precinct (Figure 3.1; Awe 1992; Powis 1996). Some of these settlement groups (e.g., Cas Pek, Tolok, Tzinic, Zopilote, Zotz, and Zubin) were occupied as early as the

late facet of the Kanluk period (600-350 B.C.), when the population was growing in the entire Belize Valley and elsewhere in the Maya lowlands.

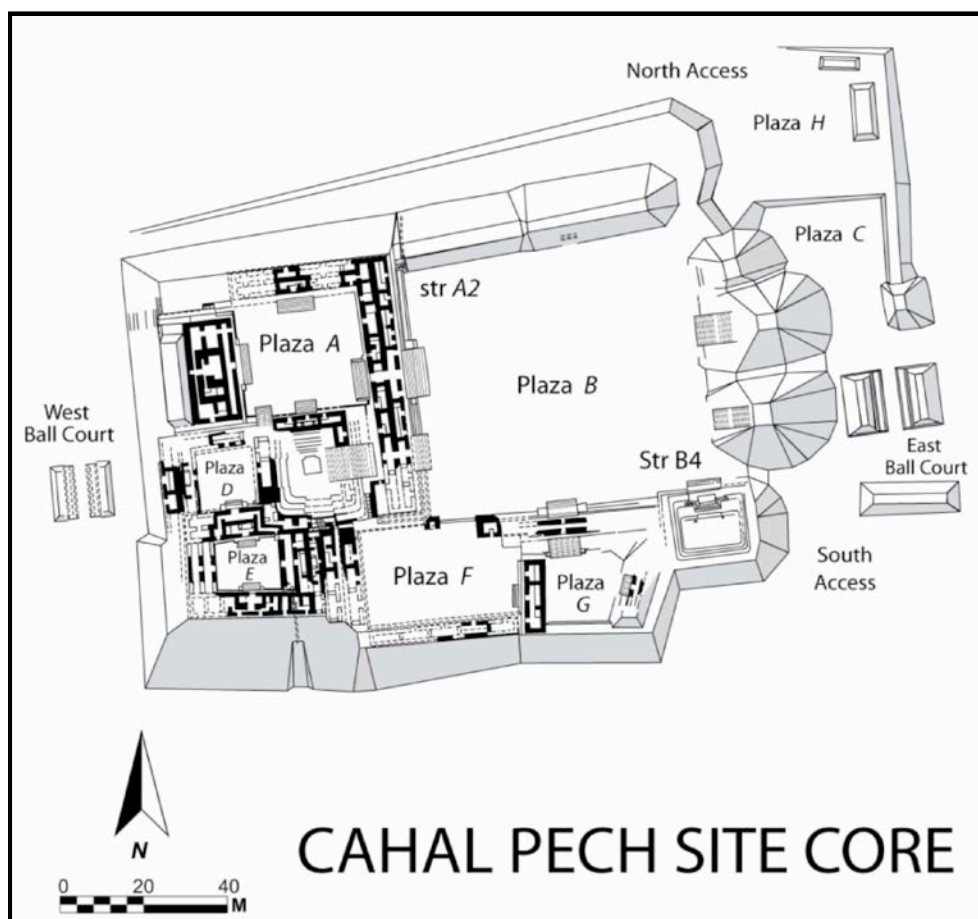


Figure 3.2. Cahal Pech site core (Map courtesy of the BVAR project).

Because of the close location of Cahal Pech to San Ignacio town and its early occupation, this site has been subject of visits and investigations over the last sixty years. The following section consists of a historical account of such visits and investigations.

3.2 ARCHAEOLOGICAL RESEARCH IN CAHAL PECH

The first published record of Cahal Pech goes back to the late 1930's when Thompson's (1939:278-282 in Awe 1992:56) *Index of Maya sites in British Honduras*. In this report, Cahal Pech is listed under the name of El Cayo. The following report of the site dates to the 1950s, when Linton Satterthwaite of the University Museum of Pennsylvania conducted some preliminary mapping and excavated Plazas B and C in the site center (Awe 1992). A few years later, in the mid-1950s, Gordon R. Willey and colleagues (1965:313, 577-579) of Harvard University visited Cahal Pech as part of their regional survey. They provided a small description of the site classifying it as a major ceremonial center. In addition, Willey along with William R. Bullard (1956) investigated a small architectural group located approximately one kilometer north of the central precinct. This group was named Melhado and was interpreted as part of the sustaining area of Cahal Pech.

In 1969, the commissioner of Belizean Archaeology Peter Schmidt visited the site in order to assess the damage caused by looters. As part of his visit, Schmidt conducted a small salvage excavation in Structure B-1 (on the eastern end of Plaza B), where he excavated a Late Classic elite tomb (Awe 1992). After Schmidt, Cahal Pech was practically "abandoned" by the archaeologists, with the exception of Joe Ball and Jennifer Taschek from San Diego State University (SDSU). As part of the SDSU Mopan-Macal Triangle Archaeological Project, Ball and Taschek visited the site in 1986 and 1987 and prepared a tape and compass plan of the Cahal Pech site core. Nevertheless, no archaeological research was conducted at the site over two decades, during which Cahal Pech was continuously the subject of looting (Awe 1992).

Because of the looting and the continuous expansion of San Ignacio town, from 1988 to 1991, Jaime J. Awe was commissioned by the Belize Tourism Board to direct vertical and extensive excavations in the seven plazas composing the acropolis (Awe 1992). Also during this time and commissioned by the Belize Tourism Board, Ball and Taschek excavated and restored many structures in Plazas A, B, D and E (Ball 1993:49-51). These excavations and restoration directed by Awe and Ball were conducted with the twofold goal of clarifying the diachronic development of the site and turning it into a national park reservation (Awe 1992; Ball 1993:49-51). The site periphery, however, continued being endangered by looters and by the continuous expansion of San Ignacio town.

As an attempt to salvage information of those endangered areas, the Belize Valley Reconnaissance Project (hereafter BVAR), directed by Jaime J. Awe, mapped the periphery and started a four-year program (from 1991 to 1994) to excavate the major architectural groups located outside of the central precinct (Awe et al. 1992a, 1992b; Cheetham et al. 1993a, 1993b, 1994; Conlon 1992; Iannone 1993, 1994, 1995; Powis 1992, 1993, 1994, 1996; Sunahara and Awe 1994). The peripheral groups with Preclassic occupation (e.g., Tolok and Cas Pek) were further investigated by the Belize Valley Maya Project (hereafter BVMP) directed by Paul Healy and Jaime J. Awe (Lee 1996; Lee and Awe 1995; Powis and Hohman 1995). The BVMP project also concentrated its efforts on the acropolis, particularly Plaza B. Ten test pits were conducted across this courtyard—nine of these test pits measured 1.5 m by 1.5 m, while one was 5 m by 5 m—with the goal of assessing the Cunil and Kanluk occupations across Plaza B (Cheetham 1995, 1996; Figure 3.3).

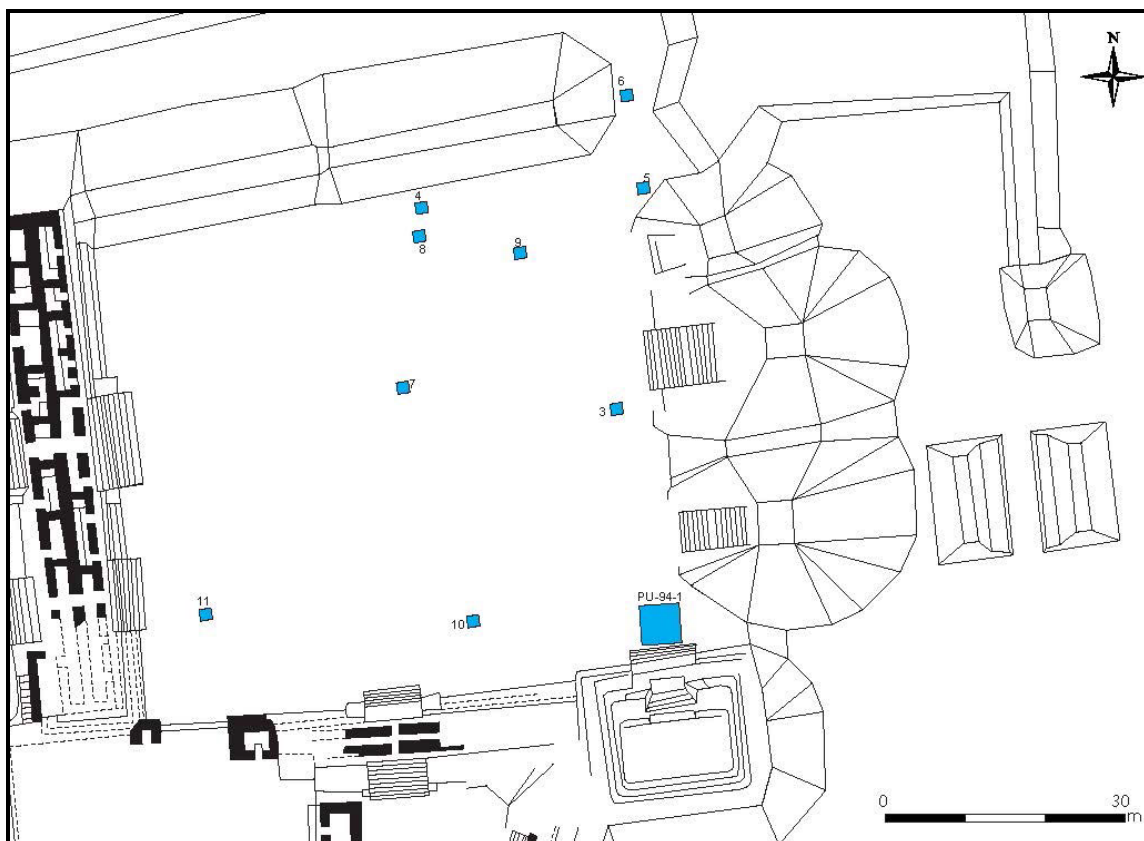


Figure 3.3. Cahal Pech site core showing the test pits conducted by Cheetham in 1995 (Modified from Cheetham 1996).

In 2004, the Belize Valley Archaeological Project (hereafter BVAP) started its archaeological activities in Plaza B in order to further study the early Cunil population. The main objectives of this project, directed by James Garber of Texas State University, San Marcos and Jaime J. Awe of the Belize Institute of Archaeology, were to clarify the utilization of the natural hilltop, achieve a more comprehensive view of the Preclassic architectural variability and fully assess activity areas, ritual activities and community organization during the Cunil phase (1100/1000-900 B.C.). In order to accomplish these goals, a north-south trench (52m by 1m) was excavated over six field seasons—from 2004 to 2009. Several extensions were placed east and west of the trench to explore some

architectural features (Garber et al. 2005, 2006, 2007, 2008, 2009, 2010; Horn 2015; Figure 3.4). As result of the north-south trench excavated on Plaza B, archaeologists exposed an amazing sequence of Cunil and Kanluk architecture. Sherman Horn (2015) of Tulane University wrote his dissertation about the architectural and other material culture uncovered during the BVAP excavations.



at the site. The objectives of these excavations consist of elucidating the status and complexity of this Maya center, from its establishment at the beginning of the Middle Preclassic to its subsequent abandonment in the Terminal Classic period (Conlon 2013; Douglas 2013; Ishihara-Brito and Awe 2013; Ishihara-Brito et al. 2013; Peniche May 2012b, 2013, 2014b, 2015a, 2015b; Peniche May and Beardall 2015; C. Pritchard 2013; J. Pritchard 2013; J. Pritchard et al. 2012; Santasilia 2012a, 2012b, 2013a, 2013b, 2013c, 2014). The following section aims to describe what is known about the early occupations of Cahal Pech, particularly during the Middle Preclassic period (1100/1000-350 B.C.).

3.3 THE EARLIEST OCCUPATIONS IN CAHAL PECH: THE CUNIL AND KANLUK PHASES

3.3.1 The Earliest Locus of Occupation: Plaza B during the Cunil Phase (1100/1000-900 B.C.)

The multiple investigations conducted both in the acropolis and peripheral areas have identified Plaza B as the earliest locus of occupation in Cahal Pech. This early population settled in the natural hill by 1100/1000 B.C.—a time known as the Cunil phase in this upper Belize Valley site (Healy and Awe 1995). Although eight residential groups may have composed the Cunil village (Cheetham 1996), as yet, only three areas have been partially explored, which are located on the southeastern, south-central and north-central sections of Plaza B⁷. These architectural clusters seem to be separated by

⁷ The north-central and south-central sections were mostly identified by the trench excavated by the BVAP. The northern section comprises the area explored by Operations 1a, 1b, 1c, 1e, 1k and 1g and their east and west extensions, while the southern section consists of Operations 1r, 1s, 1t, 1u and 1v.

approximately 15 m space—perhaps the crest of the natural hill—in which none or few architectural features were registered (Garber et al. 2005, 2006, 2007, 2008, 2009, 2010).

The Northern Area of Plaza B

In the north section, the bedrock was modified by digging three depressions interpreted as a midden, a place to deposit a cache, and a posthole (Horn 2015). These features were later covered by a black, organic-rich soil horizon. In the following construction phase, three surfaces were created on top of the paleosol: a hard, white marl floor abutting a low cobbled platform and a soft white marl surface to the east (Patio Floor 5; Horn 2015:183, Figure 6.4). In the northwest corner of Plaza B, the paleosol was removed from the bedrock and two sequential floors possibly made of plaster (Floors 8 and 7) were laid down. Interestingly, a natural dip in the bedrock was cleared and used as refuse disposal. South of this section, a tamped gray marl floor was built to support a straight alignment of roughly shaped stones that may have been the basal molding of a perishable superstructure, which could have been either circular or apsidal in shape (Horn 2015).

The Southern Area of Plaza B

The south-central end of Plaza B showed a high rate of construction activity. The first architectural feature in this section was represented by the shaping of bedrock into a small stairway cut into the southern hillside. This stairway connected the naturally lower area to the south with the raised surface. The north side of the uppermost step was cut into a steep-angled V feature, which may have served as drain to divert water (Horn

2015). Like in the north central section, these features were covered by paleosol. During the next construction phase, a sequence of stratified surfaces was constructed, which included, from bottom to top, a tamped gray marl floor, two superimposed cobbled surfaces, and a thick gray marl floor. With the construction of these floors, the lower area of the hillside was raised and leveled with, and above, the top of the bedrock stairs (Horn 2015).

The southeastern side of Plaza B, likely the oldest occupied area at the courtyard, also showed evidence of construction activity during the Cunil phase (Figure 3.5; Awe 1992; Ishihara-Brito and Awe 2013:125-126). The first occupation in this area is associated with the date of 1280-980 cal B.C. (calibrated at 2σ ; Table 3.1; Ebert et al. 2016:12, Table 4; see also Awe 1992:1992, Table 1; Healy and Awe 1995:1999, Table 1). It consisted of a low platform with a tamped marl floor (Structure B4-1st), which was created by scraping and leveling the original surface of the hill. Although the remains of a superstructure have not been found to date, it is likely that this platform supported a construction made of perishable materials (Ishihara-Brito and Awe 2013:125-126).

Table 3.1. ¹⁴C age determinations from Cahal Pech site core and peripheral groups (after Awe 1992:206, Table 1; Ebert et al 2016: Table 4; Healy and Awe 1995: 199, Table 1). ¹ Str. B-4 substructures followed the designation assigned by Healy et al. 2004 and Ishihara-Brito and Awe 2013.

^a Denotes radiometric measurement

^b Denotes AMS ¹⁴C measurement

Site	Context ¹	Ceramic phase	Lab #	Conventional ¹⁴ C age (BP)	Radiocarbon age	Calibrated yr BC/AD (2 σ)
Tolok	Str. 1 bedrock	LF Kanluk	Beta-77199 ^a	2220±100	270±100b.c	535BC-AD1
Cas Pech	Str. C Level 11	LF Kanluk	Beta-77203 ^b	2230±50	280±50b.c	400-185BC
Tolok	Str. 14	LF Kanluk	Beta-77201 ^b	2270±60	420±60b.c	755-265BC
Cahal Pech	Str. B-4/8	LF Kanluk	Beta-40863 ^a	2470±90	520±90b.c.	795-405BC
Cahal Pech	Str. B-4/5	EF Kanluk	Beta-40864 ^a	2720±60	770±60b.c.	1000-800BC
Cahal Pech	Str. B-4/4	Cunil	Beta-77205 ^b	2800±50	850±50b.c	1110-830BC
Cahal Pech	Str. B-4/4	Cunil	Beta-40865 ^a	2740±70	790±70b.c.	1285-500BC
Cahal Pech	Str. B-4/3	Cunil	Beta-56765 ^a	2730±140	780±140b.c.	1055-800BC
Cahal Pech	Str. B-4/3	Cunil	Beta-77204 ^a	2710±120	706±120b.c	975-800BC
Cahal Pech	Str. B-4/1	Cunil	Beta-77207 ^b	2930±50	980±50b.c	1280-980BC

painted with wide vertical red bands (Structure B4-4th). Interestingly, on top of the raised platform and perhaps inside of the superstructure, there was an oval-shaped hearth lined with stones. West of this building, there was a cobblestone floor, likely serving as the associated plaza surface (Ishihara-Brito and Awe 2013:125-126). Structure B-4/4th has been associated with the dates of 1285-500 B.C. and 1110-830 cal B.C. (calibrated at 2 σ ; Table 3.1; Ebert et al. 2016:12, Table 4; see also Awe 1992:1992, Table 1; Healy and Awe 1995:1999, Table 1).

As Cheetham (1996, 1998) has stated, the Cunil residences varied in their degree of elaborateness and artifact content. The north-central buildings, for instance, lacked plaster floors, recessed building interiors, and painted exterior walls and had a small percentage of wares with pan-Mesoamerican motifs (e.g., avian serpent, kan-cross, cleft-head and lightning) often referred to as ‘Olmec motifs.’ Despite this, the difference among these habitation units was not sharp (Cheetham 1998; Healy et al. 2004).

3.3.2 Occupation of Cahal Pech during the Early Facet of the Kanluk Phase (900-600 B.C.)

Cheetham (1996) has hypothesized that, at the beginning of the early facet of the Kanluk phase, the south and west sides of Plaza B were leveled and plastered in order to form the first formal plaza, which was only bordered by Structure B-4. With these modifications, the function of the courtyard switched from residential to public. Further evidence, nonetheless, does not corroborate this hypothesis.

The Northern Section of Plaza B

It has been recently established that the north-central section of Plaza B witnessed a high rate of construction activity (Horn 2015). At the beginning of the Kanluk phase, two cobbled platforms (Platforms R and P) and their associated patio floors made of gray marl (Patio Floor 5 and 4, respectively) were constructed (Horn 2015:193, Figure 6.10). At least, Platform R was apsidal in shape. In the following phase, the inhabitants of Plaza B built three subsequent patio surfaces (Patio Floors 1, 2 and 3). Although Patio Floor 1 could have been associated with Platform P, Patio Floor 2 provided a surface to construct another cobbled platform (Platform L/1st). This platform and its associated patio floor were covered by another patio surface and platform delimited by a single course of stones (Platform L; Horn 2015:197, Figure 6.11). By the end of the early facet of the Kanluk phase, a rounded platform faced with roughly cut rectangular stones was built in the northwest area (Horn 2015:263, Figure 6.35).

After this construction moment, the northern area witnessed a change in the built environment as a massive rectangular building, Platform B, was built. The retaining walls of this low platform measured 17.5 m on each side, and consisted of roughly cut limestone blocks placed directly on top of bedrock. Its surface was composed of cobbles and tamped marl (Garber, Cochran and Awe. 2007:170; Horn 2015:295, Figure 6.40). It was aligned 22 degrees west of north. Platform B was built to support residential structures. Two platforms rested on this basal platform. Platform N was slightly rounded or apsidal and it was faced with two courses of roughly cut, angular stones. Platform A was a cobbled surface built over the northeast corner of Platform B. Based on available data, Horn (2015) states that Platform B and its superstructural platforms continued to be

used through the late facet of the Kanluk phase until they were covered by a Late Preclassic Plaza Floor.

Besides its massive dimensions, Platform B is considered unique because the excavation beneath its corners provided unique ritual deposits (Figure 3.6). Beneath the southeast corner, a crypt resting directly on bedrock was encountered. In the crypt, the Cahal Pech residents placed a headless body and a Sapporero Red: Variety Unspecified bowl, which contained a human skull and six greenstone beads. In the northeast corner, another cache was found consisting of a cluster of 13 greenstones immediately above a headless figurine, which in turn was on top of three slate bars. The cache found in the northwestern corner was a layered deposit comprised by 13 obsidian flakes, a black head ceramic figurine and three elongated river-rolled pebbles. In the southwestern corner there was a large Kanluk phase ceramic figurine head with serrated ears. This set of ritual deposits have been interpreted as the remains of a ritual circuit associated with the death and resurrection of an important individual (Garber, Cochran and Awe. 2007:173; Garber and Awe 2008:187-188). According to this interpretation, the sequence of this circuit is as follows:

"It starts in the SE corner where the deceased's head and body are buried in separate crypts. A living form figurine head is then buried in the SW corner. Next in the sequence is the NW corner where the ancestor, shown in death form, is taken to the Lying-Down-Sky, First Three Stone Place symbolized by the 13 obsidians and 3 river stones. The deceased is being prepared for resurrection. This takes place in the NE corner, where he is shown resurrected as the axis mundi at the Three -Stone-Place where the sky has been raised (Garber and Awe 2008:189)."

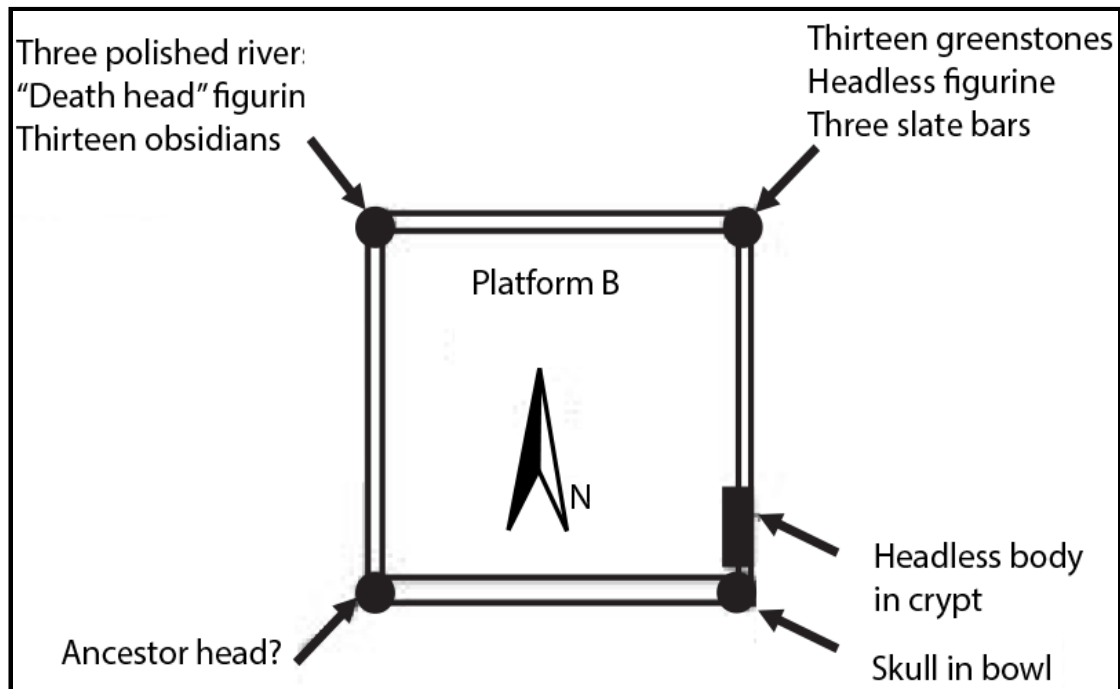


Figure 3.6. Platform B and its associated ritual deposits (Modified after Garber and Awe 2008:187).

The Southern Area of Plaza B

Construction activity also was accounted in the southern area of Plaza B during the early facet of the Kanluk phase (Horn 2015). At the beginning of the early facet, a floor made of gray marl extended over the earlier surfaces above the bedrock steps ending in a ramp-like feature. In addition, a raised platform was built on top of the exposed paleosol by using gray marl. This platform supported a superstructure with a slopping access-way to the west and a foundation consisting of a single course of small, roughly cut stones. The superstructure was associated with a patio floor made of small pebbles in a tan marl matrix. These constructions were covered in the following phase, when Platform H and its associated tamped-marl patio floor were built. This structure extended eastwards and it was located about 4m north of the apsidal structure Plaza B/8th-

A. Platform H was a rectangular building whose foundation consisted of large slabs (Horn 2015:246, Figure 6.26). In the following phase, Platform H was covered by a large platform that was faced with an arc of roughly cut limestone slabs and cobbles (2009:Platform 1). Garber and colleagues describe this structure as displaying a round form. However, Horn (2015:252, Figure 6.28) depicts it as apsidal in shape. This rounded structure continued being in use through the late facet of the Kanluk phase.

During the early facet of the Kanluk phase, Structure B-4 located in the southeast corner of Plaza B also underwent a high rate of construction activity (Awe 1992:134-136, 1994; Ishihara-Brito and Awe 2013:125-126). Structure B-4/5th consisted of a 0.7 meter-high rectilinear structure built above a basal platform, which were aligned some 8 degrees west of north. The retaining walls of this raised building were constructed using roughly cut stones that were mortared together and then covered with plaster. Postholes on the floor of the basal platform and the raised building, plus several daub fragments, indicate that both surfaces supported wattle-and-daub buildings (Awe 1992:134-136, 1994; Ishihara-Brito and Awe 2013:125-126). This structure was associated with the date of 1000-800 cal B.C. (calibrated at 2 σ ; Ebert et al. 2016:12, Table 4; see also Awe 1992:1992, Table 1; Healy and Awe 1995:1999, Table 1).

In the next episode, Structure B4-5th was encased by a larger platform (Structure B4-6th) that reached a height of 1.1 m and expanded the built area by at least 1.8 m northwards. In the next construction phase, represented by Structure B4-7th, the overall form on the building was altered, providing the basic architectural template that would be mirrored in subsequent phases. Structure B4-7th consisted of a basal platform that stood approximately 1.5m in height. The summit of this plastered platform was reached through

a staircase located on its northern side. This platform supported a pair of structures on its western and eastern edges, which were identified through their foundations consisting of a single course of roughly-cut stones. At least, the eastern building was apsidal in shape (Awe 1992:134-136, 1994; Ishihara-Brito and Awe 2013:125-126).

In addition, two consecutive buildings may have been constructed 100 m south of the site core—in the locus of Structure A-1 of the Zopilote group⁸ (Figure 3.7; Cheetham 2004). Unlike the architectural clusters in Plaza B, the Structure A-1 consecutive buildings stood by themselves in the Zopilote area and were approximately 2 m in height. This is an impressive height if we consider that the largest construction at the site core—Structure B-4—reached only 1.5 m by the end of the early facet of the Kanluk phase (900-600 B.C.). Like some structures in Plaza B, the Structure A-1 consecutive buildings supported constructions made of perishable materials and the earliest building was constructed on top of bedrock. The formal characteristics of Structure A-1 and the fact that it stood by itself in the Zopilote area suggest that this building likely had public/ceremonial functions during this early time.

⁸ Structure A-1 construction episodes were initially assigned to the second half of the Kanluk phase based on the associated pottery (Cheetham et al. 1993a, 1993b). It was not until Cheetham's publication in 2004 that these construction phases were re-assigned to the early facet.

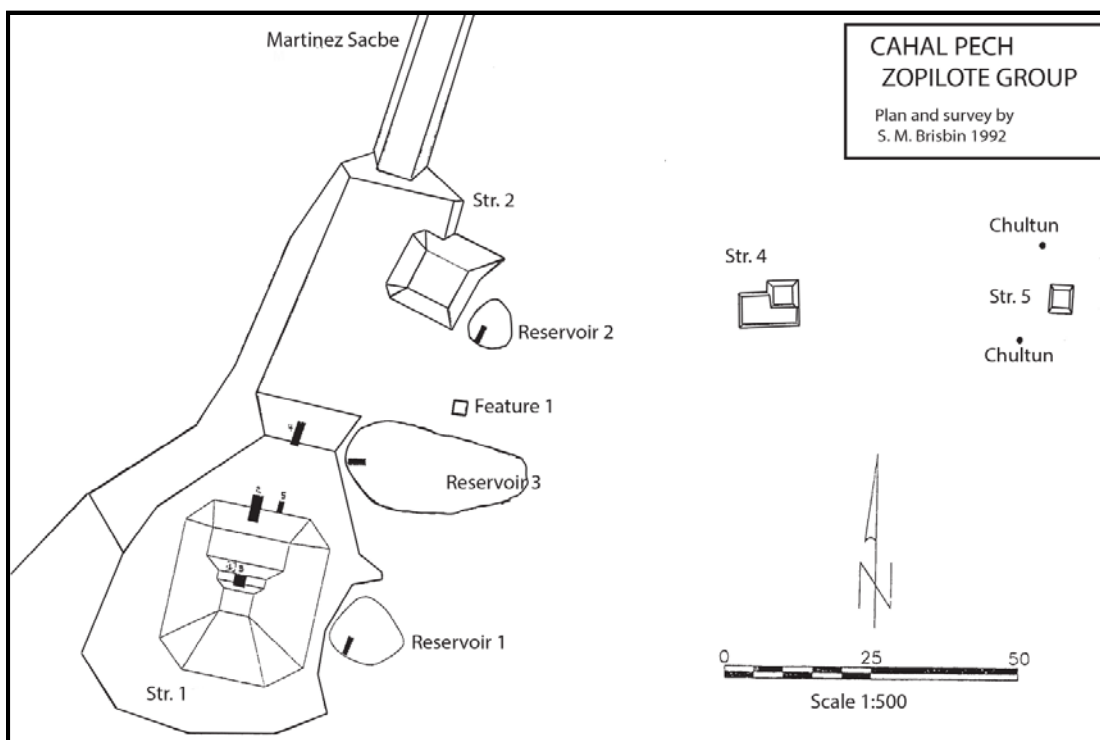


Figure 3.7. Isometric plan of Zopilote Group (Modified after Cheetham et al. 1993b:157).

3.3.3 The Precinct of Cahal Pech during the Late Facet of the Kanluk Phase (600-350 B.C.)

During the late facet of the Kanluk phase, the central precinct underwent a higher construction activity in comparison with previous times, although the construction activity stopped in the northern section. The eastern edge went through its first occupation with the construction of two consecutive low platforms in the locus of Structure B-2. The first of these platforms was constructed just above bedrock and consisted on a single course of roughly cut stones (Awe 1992).

Structure B-4

Structure B-4 became a monumental building during the second part of the Kanluk phase (Figure 3.4). Structure B4-8th, for instance, stood approximately 2 m above

the plaza floor. The summit of the Structure B4-8th basal platform supported another low platform, which in turn held a circular building. The retaining walls of this circular superstructure were made of well-cut limestone blocks that were mortared together. At the base of the raised platform there was a landing with four steps descending down to a shorter landing and a single step before reaching the plaza floor. At the base of the bottommost step on the plaza floor, a posthole (32-38 cm in diameter) was observed, which had been capped by stones. Structure B-4/8th was associated with a date of 795-405 cal B.C. (calibrated at 2 σ ; Table 3.1; Ebert et al. 2016:12, Table 4; see also Awe 1992:1992, Table 1; Healy and Awe 1995:1999, Table 1).

In the next phase constructed dating to the Kanluk-Barton Creek transition, Structure B4-9th stood approximately 2.5 m above its associated plaza floor. Like the previous phases, Structure B4-9th held a low platform at its summit with two series of steps that led down to the courtyard. At the level of the summit platform, atop the upper landing, there was an inset corner that continued in a westerly direction (Awe 1992: 136-137; Ishihara-Brito and Awe 2013:126-127).

The Population Expands on the Hill

Other areas of the central precinct (e.g., Plaza A, Plaza C, Plaza F and Plaza G) were settled at some point during the Kanluk phase as an attempt to enlarge the usable summit of the hill (e.g., Audet 2001; Awe 1992; Awe and Schwanke 2006; Peniche May 2015a, 2015b). Nevertheless, because these areas have been mostly excavated in test pits and because these early cultural materials are deeply buried by plaza construction, the information about the formal characteristics of the architecture is limited, as well as the

specific dating of the architectural sequence (meaning the assignment to either the early- or late-facet of the Kanluk phase).

Perhaps the exception is the round platform exposed during the excavations at the Eastern Ball Court alley. This round platform was 5 m in diameter and was made of a single course of roughly cut stones (Santasilia 2013b:58). Most likely, this building was associated with other structures, although these have not been found as yet. Plaza G was also settled at some point during the late facet of the Kanluk phase (Peniche May 2015a). This occupation was represented by Structure G-Plaza/1st. This structure consisted of a single course wall, was 15 cm in height and was aligned east-west (Audet 2001). The locus of Structure F-2 was also occupied during the Kanluk phase, although whether this occupation started during the early or late facet is uncertain (Audet 2001). Nevertheless, the characteristics of the architecture suggest that the Structure F-2 locus was occupied at some point during the late facet of the Kanluk phase (600-300 B.C.). The first construction episode—Structure F-2/1st—consisted of a 50-cm-high platform that was built directly above bedrock using river cobbles and limestone blocks, which were covered in a thick layer of plaster. This early platform was completely encased during the next construction episode represented by Structure F-2/2nd. This construction consisted of a platform made of large limestone blocks that were coated by a thick layer of stucco. This platform increased the dimensions of Structure F-2 because it reached 85 cm above bedrock and expanded at least 2.5 m on the western side.

3.3.4 The Population Continues Growing: The Kanluk-phase Occupation in the Periphery

Along with the increasing population and the growing construction activity in the core of Cahal Pech, several settlements in the periphery were also occupied during the second part of the Kanluk phase (600-350 B.C.). These peripheral groups were mainly located in the southern periphery (e.g., Tzinic, Zopilote, Zotz and Zubin), although two groups were settled west and east of the central precinct (e.g., Cas Peck and Tolok) (Awe et al. 1992a, 1992b; Cheetham 2004; Cheetham et al. 1993a, 1993b; Conlon 1992; Iannone 1995; Lee 1996; Lee and Awe 1995; Powis 1992, 1993, 1994, 1996; Powis and Hohman 1995; Sunahara and Awe 1994).

Cas Peck Group (Western Periphery)

Cas Pek architectural group is located approximately 150m west of the Cahal Pech acropolis (Figure 3.8). This group was first settled during the late facet of the Kanluk phase in the location of Structure 1. Four construction episodes were assigned to the late facet of the Kanluk phase based on their associated pottery (Cheetham et. al. 1993a; Lee 1996; Lee and Awe 1995).

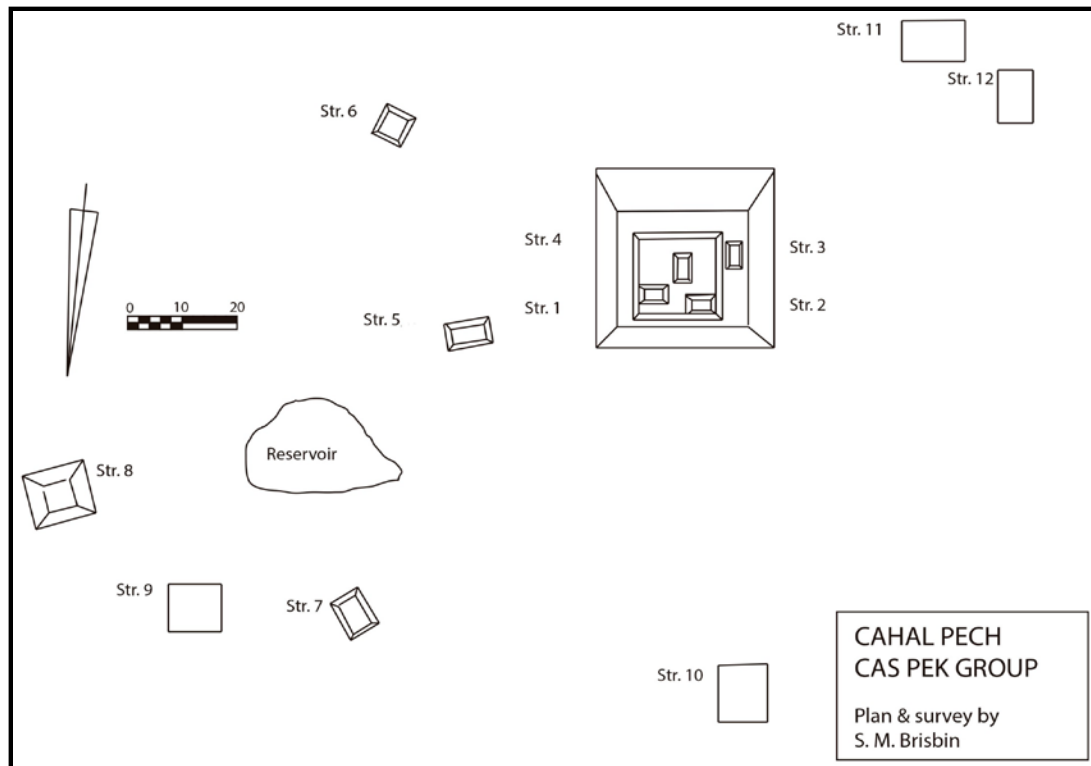


Figure 3.8. Isometric plan of Cas Pek group (Modified after Lee 1996:78).

The first construction in this area consisted of a small and single-course platform located above bedrock. Small, roughly shaped limestone blocks were used in order to build its retaining wall, while tamped marl served as the platform surface. Unfortunately, this platform was partially exposed, so its total dimensions were not established. In the next construction phase, Structure A was completely encased by Structure B, a large and low platform measuring 8 m (north-south) by 9 m (east-west). Structure B consisted of a single course wall made of small, roughly cut stones, which rested on bedrock on its western edge and fill in its northern half. Like Structure A, tamped marl served as the surface of this platform. Interestingly, associated with the southwestern section of this building, there was an oval depression carved into bedrock that appears to have been originally encircled by roughly-cut stones (Lee and Awe 1995). The function of this

bedrock feature is unknown but it could have functioned as a hearth that was later filled with ceramic waste.

During the following episode, Structure B underwent a modification, in which a small platform (Structure C) was directly constructed above its southwestern section. Like previous buildings, the retaining wall of Structure C also consisted of a single course of roughly-cut stones that rested on a thin, well-packed marl floor laid directly over the original floor of Structure B (Lee 1996; Lee and Awe 1995). The moment of construction of Structure C has been assigned to 400-185 B.C. (Ebert et al. 2016; Healy and Awe 1995), during the transition between the Kanluk and Barton Creek phases.

Tolok Group (Eastern Periphery)

Tolok is an architectural group located 500m southeast of the site core. Like Cas Pek it was first settled during the late facet of the Kanluk phase (Figure 3.9), although investigations have shown that only some areas of this group had occupations dating to this time. Structure 1 was one of these structures, but this occupation has not been well documented except for a midden discovered above bedrock dated to 535 B.C.-A.D. 1 (Awe 1992; Ebert et al. 2016; Healy and Awe 1995). This midden consisted mainly of pottery, figurines, lithic tools and debitage, freshwater bivalves (*Nephronaias ortmanni*), jute shells (*Pachychilus glaphyrus*), bony fish (*Osteichthyes*), white-tail deer (*Odocoileus virginianus*), obsidian, conch shell and greenstone (Powis 1992:39-40). In contrast, the small southern patio composed by Structures 4, 5, 6 and 7 provided a greater volume of interesting evidence for late-Kanluk occupation (Powis 1993, 1994, 1996; Powis and Hohman 1995).

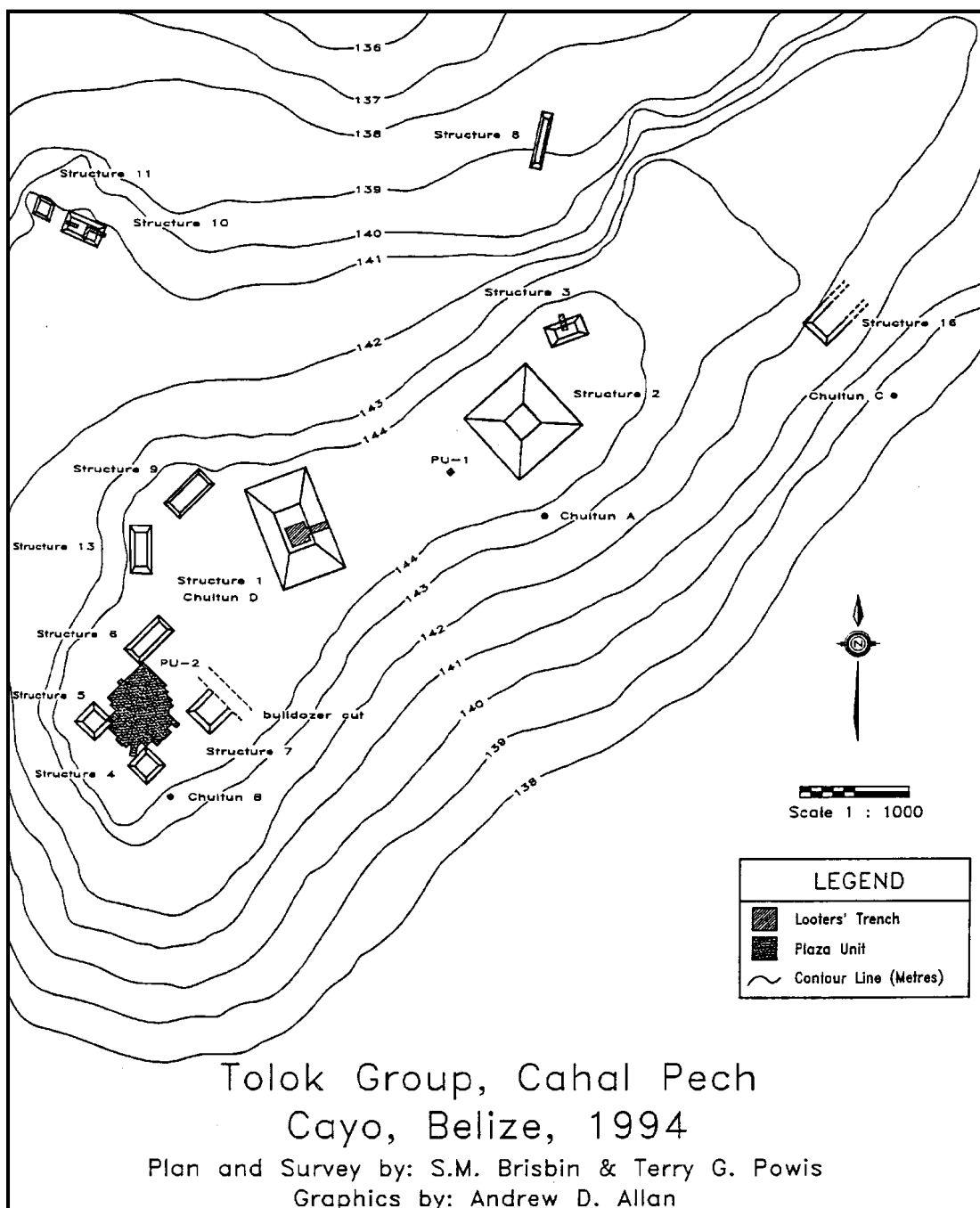


Figure 3.9. Isometric plan of the Tolok Group (Powis and Hohman 1996: 47).

The earliest construction identified in the southern group consisted of a round platform designated Structure 15 (Figure 3.10). Structure 15 measured 5.5 m in diameter and 40 cm in height. Its retaining wall consisted of five courses of cut stones that rested on a surface made of compacted soil, marl and small ballast. The surface of this round platform was covered by a 6cm thick plastered floor. Structure 15 was associated with a rectangular or square enclosed patio, which was constructed off the northwest end facing the site core.

At some moment during the late facet of the Kanluk phase, the cluster patio underwent some modifications. The plastered patio associated with Structure 15 was expanded and two new low platforms (one course high) were constructed on the southwest and northeast sides of the extended patio. Structure 15 was abandoned and partially dismantled. Directly over the top of the remains of Structure 15, a larger round platform named Structure 14 was built (Powis 1993: 98-102). The construction of this round structure has been dated to 755-265 cal B.C. (calibrated at 2σ ; Ebert et al. 2016:12, Table 4; see also Awe 1992:1992, Table 1; Healy and Awe 1995:1999, Table 1), late in the second part of the Kanluk phase.

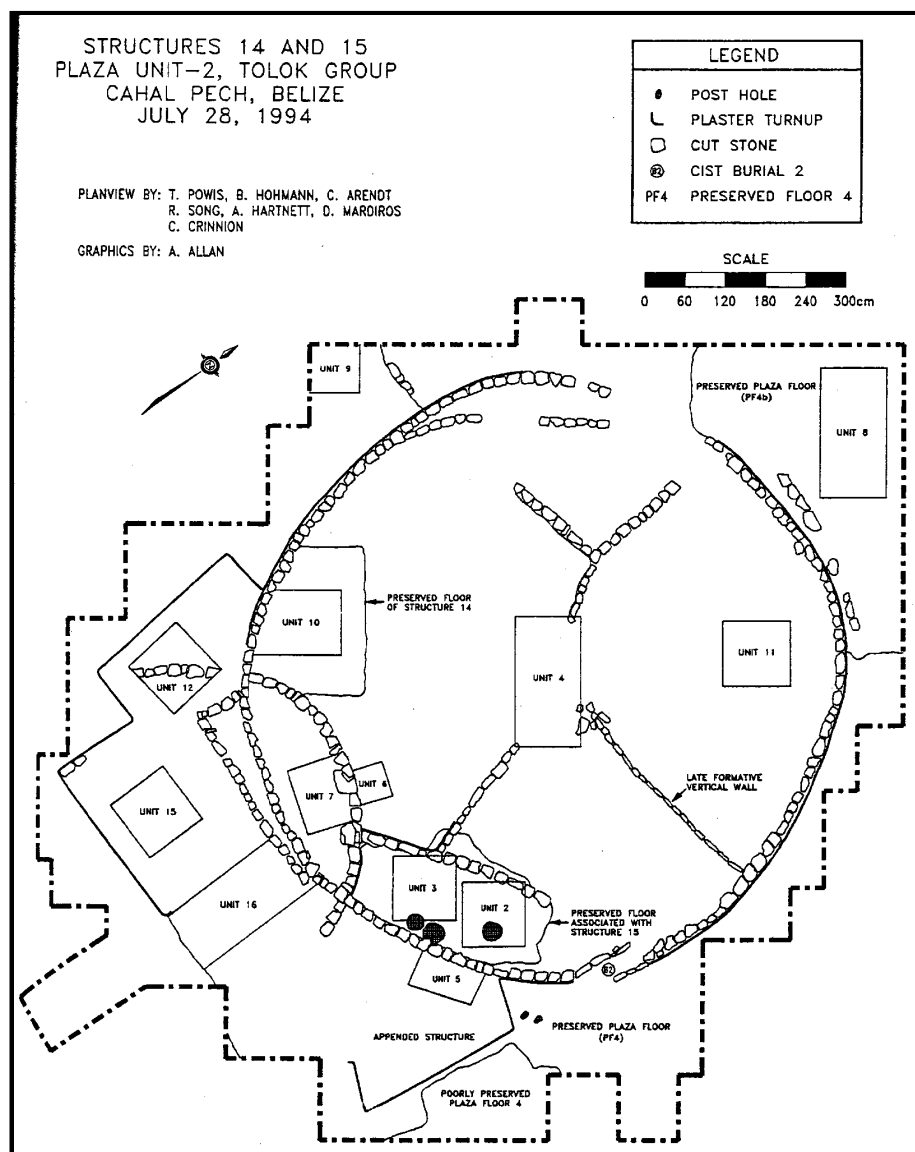


Figure 3.10. Plan view of Structures 14 and 15 in the Tolok group (Powis and Hohman 1995:65).

Structure 14 measured 9.5 m in diameter and 55 cm in height. Its retaining walls, erected on top of a later plaza floor, consisted of nine courses of cut stones covered with a thick layer of stucco. The platform sloped inward from the base to the summit of the structure, which was covered with a thick layer of stucco. This plaster floor abutted the third course of its retaining wall, suggesting that a low masonry wall located above the

floor encircled the building platform. Discernible features associated with Structure 14 were nine possible postholes ranging from 9 to 19 cm in diameter. These postholes were located along the plaza floor only a few centimeters away from the platform. Three larger postholes—approximately 30 cm in diameter—were found on a section of a well-preserved plastered floor located near the eastern projection. A further analysis of these postholes, nevertheless, suggested that only two postholes were genuine. Based on this evidence, Powis (1996:195) rejects the possibility that a perishable building was erected over Structure 14 pointing out that it was likely an exposed platform.

In addition, an appended structure was partially attached on the eastern side of the round platform. This appended building was made of earthen material covered with a thick coat of lime plaster and measured approximately 2.5 m long, 0.80-1 m width and 35 cm high. The function of this appended building is still uncertain. It has been suggested, nonetheless, that it may have served as an ancillary building of Structure 14. If so, Structure 14 was a keyhole-shaped round structure. Based on seven Late Preclassic and Classic intrusive burials found buried in Structure 14, it has been proposed that the keyhole shaped platform served as a focus of either domestic- or community-oriented rituals performed to establish solidarity for both family and community members (Powis 1996).

Tzinic Group (Southern Periphery)

The Tzinic group was located approximately 450 m to the south of the Cahal Pech site core. The earliest evidence for occupation was assigned to the late facet of the Kanluk phase and was found beneath Structure 6. This occupation was represented by plastered platform raised 8 to 10 cm above bedrock (Conlon 1992:76; Figure 3.11).

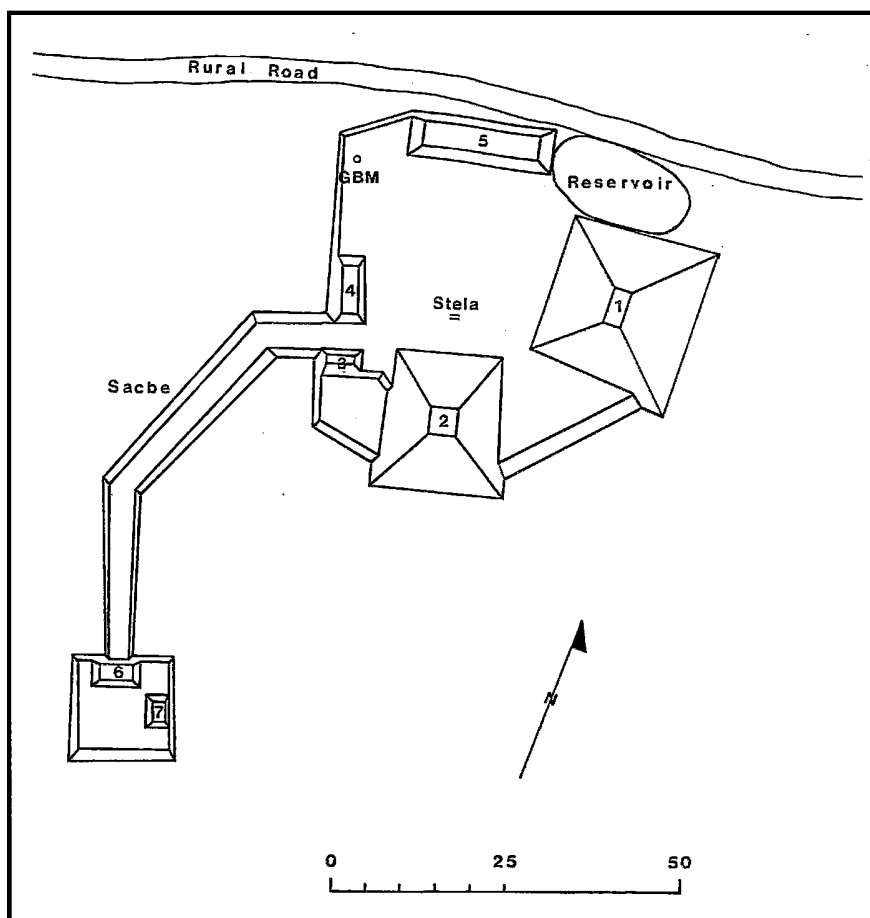


Figure 3.11. Isometric plan of the Tzinic group (Conlon 1992: 70).

Zopilote Group (Southern Periphery)

As mentioned earlier, the Zopilote group is located 100 m south of the Cahal Pech site core. This group may have been settled during the early facet of the Kanluk phase in the location of Structure A-1. During the second part of the Kanluk phase, the early-Kanluk buildings were enclosed by a larger building that stood approximately 4m tall. By the end of the Kanluk phase, Structure A-1 was expanded to 5.5 m in height and was associated with a formal plaza and, perhaps, a stela. Once again, Structure A-1 was the only construction present in the Zopilote group and likely fulfilled public functions (Cheetham 2004).

Zotz Group (Southern Periphery)

Zotz is a formal patio cluster located approximately 100 m south of the site core. The late Kanluk occupation is located beneath Structure 2—at the eastern perimeter of the patio group—and is indicated by the presence of two construction phases. The first construction phase consisted of a platform made of plaster, clay and marl and laid directly above the old ground surface.

The second episode was represented by a low platform (three courses high) that rested on a plastered patio floor and was aligned north-south. The platform supported a round structure, which averaged 1.2 m in height and tapered slightly to an upper diameter of 3.6 m (Figure 3.12). The retaining walls were made of cut limestone blocks set in mortar and plastered with a thick layer of plaster on the exterior face. The summit of the circular construction was also capped by a thick plaster floor and was accessed through an elliptical outset stairway located on the west side. The circular building likely lacked of a superstructure since no postholes or remains of a masonry superstructure were detected above its floor. The plastered floor did show evidence of *copal* residues on fire-clouded sections, indicating that incense was being burnt on the structure (Awe et al. 1992a).

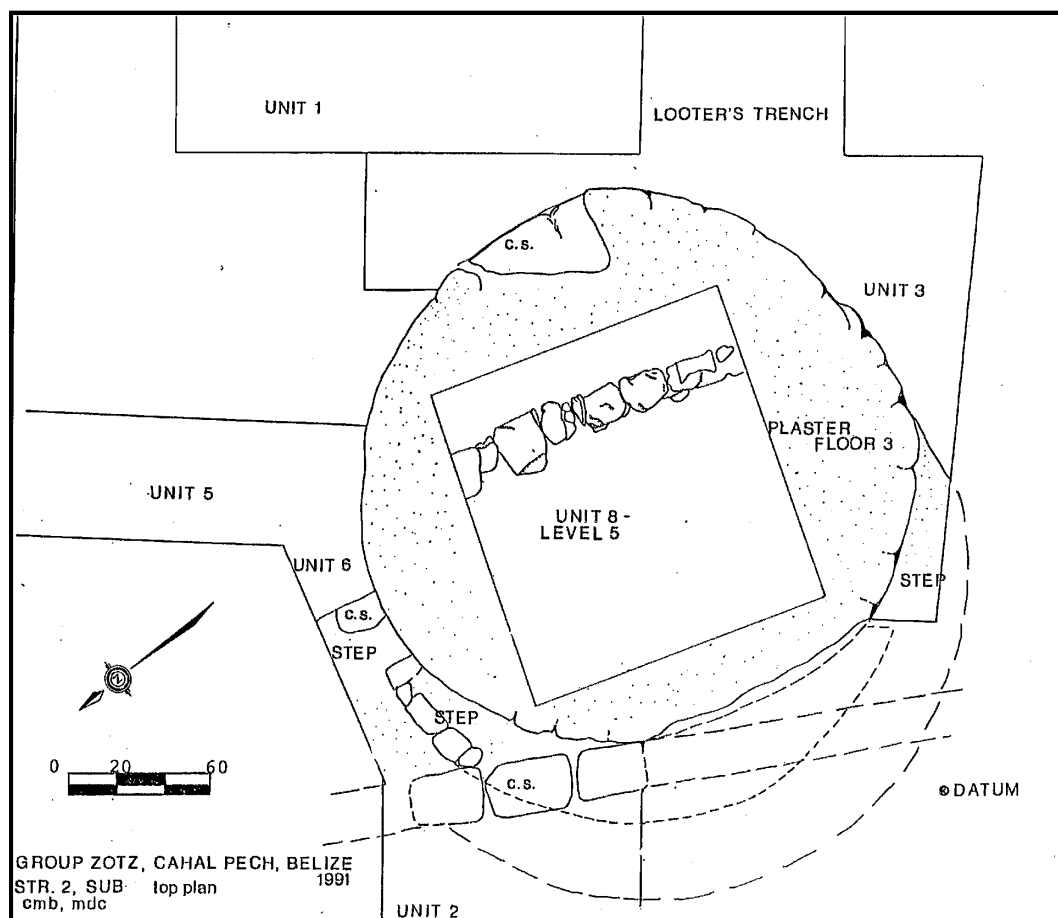


Figure 3.12. Plan view of the round structure in the Zotz group (Awe et al. 1992a: 122).

Zubin Group (Southern Periphery)

The Zubin architectural group is located 2km south from the Cahal Pech acropolis and was also occupied at some point during late Kanluk phase, although the group layout during this time was quite different from the Classic configuration (Figure 3.13). Evidence of late-Kanluk occupation in Plaza A has proven to be scarce. This occupation was only exposed beneath Structure 1 and was represented by some late Kanluk ceramics mixed with the paleosol. In Plaza B, late Kanluk activity was discovered beneath Structure B-8. The earliest activity at the Structure B-8 locus consisted of the use of a limestone or *sascab* quarry. By the end of the Kanluk phase, the quarry was covered with

a thick plaza floor that was built at the same level than an unquarried area of the bedrock outcrop. Both the eastern plaza floor and western bedrock functioned as the living surface of a low platform. This platform consisted of a single course retaining wall and rested directly on the plaza floor (Iannone 1994).

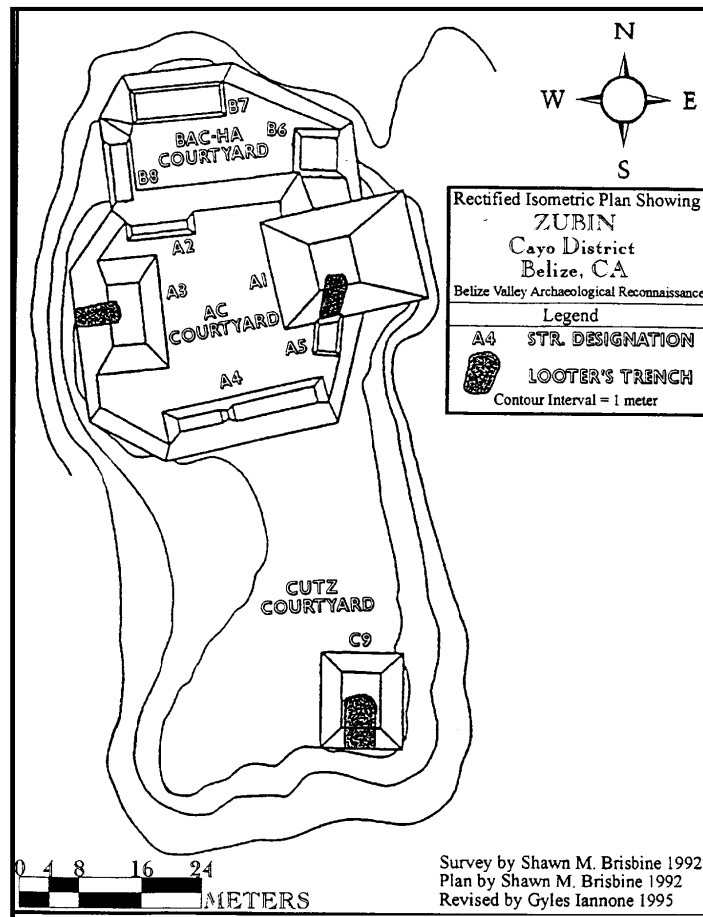


Figure 3.13. Isometric plan of the Zubin group (Iannone 1995:66).

The Zubin population, nevertheless, was centered on the Cuz platform—a patio with a single pyramidal structure named Structure C-9. Three construction phases assigned to the second half of the Middle Preclassic period have been identified. The first construction phase, Structure C9-8th, consisted of an apsidal structure with a three-course

retaining wall (40 cm in height) made of roughly-dressed rectilinear limestone blocks. The stones that made of the courses were separated by approximately 5 cm thick layers of very dark, organic sediments. Similar sediment was used to build the patio surface on which the apsidal platform was built. The platform, on the other hand, was finished using a thin layer of tamped, gray-green clay. This Kanluk apsidal platform was identified as a ceremonial structure since it lacked of grinding implements and obsidian artifacts (Iannone 1995, 1996).

The following phase was represented by another apsidal platform, Structure C9-7th, whose construction technique was similar to the previous building. The retaining walls of Structure C9-7th were made of roughly cut, boulder-sized rectilinear limestone stones that were separated by 4 cm lenses of very dark, organic-rich sediments. These walls were resting on the same plaza surface that Structure C9-8th. Structure C9-7th, nevertheless, was slightly higher than the previous apsidal platform—it was four courses and 44 cm in height. Structure C9-7th had a three-course staircase with a roughly east-west orientation that was attached on the southern side of the platform. It was also plastered. Because of the relative complexity of this building and the paucity of domestic artifacts (e.g., *manos* and *metates*), this apsidal platform has been identified as a building with increased ritual activity (Iannone 1995, 1996).

Structure C9-6th represents the next construction episode, in which a steep-sided pyramidal structure with an axial stair was constructed. This pyramid raised 80 cm above the original plaza surface of Structure C9-8th. Interestingly, this structure was associated with two caches. One of these caches was found in the stair fill and consisted of two jadeite beads resembling human teeth. The other cache consisted of a figurine body

fragment and a large figurine head discovered in the fill of Structure C9-6th, directly in front of the earlier Structure C9-7th. In addition to the figurine cache, a burial (Burial C9-B/1) was placed directly on top of the earlier upper platform surface of Structure C9-7th. According to Iannone (1995), both cache and burial were closely connected with the termination of Structure C9-7th as well as the expanded ritual activity at this locus, which was centered on ancestor veneration. In the following construction phase, in which the steep-sided pyramid increased approximately 40 cm in height, the transformation of the Structure C9 locus into a sacred space dedicated to the ritualized veneration of ancestors was confirmed.

3.3.5 What is not known about Cahal Pech

The myriad of excavations conducted in both the site core and periphery have established that Cahal Pech was first settled by 1100/1000 B.C., a time in which the founders modified the southern part of the natural hill (southern section of the Classic-period Plaza B) to build their apsidal residences made of perishable materials. Throughout the following three hundred years, as the population increased, other sectors of the natural crest were occupied with houses. Some residences had foundations made of roughly-cut stones and rested on low platforms made of tamped marl or cobbles. By the end of the phase, at least one residence stood out with its plastered surfaces and painted walls (Structure B-4/4th). This architectural evidence suggests that the Cunil households held an egalitarian form of political organization. Nonetheless, an incipient social differentiation could have been present by the end of the Cunil phase (1100/1000-900 B.C.), the time when Structure B-4/4th was built and its residents enjoyed a differential

access to certain exotic goods, like the vessels with incised pan-Mesoamerican motifs (see Cheetham 1998; Garber and Awe 2006).

During the next three hundred years (900-600 B.C.), the early Kanluk-phase residents were still occupying the southern and northern sections of the natural hill (on the locus of the Classic-period Plaza B). The inhabitants of the northern section built six platforms on or near bedrock during three different construction episodes. It is likely that these platforms supported perishable superstructures that functioned as residences, but because these constructions were only partially excavated through a trench, it is not possible to fully assess their functions. The only exception is Platform B. During the construction of this tamped-marl platform, the people of Cahal Pech buried five caches beneath its corners. These caches, associated with ancestor veneration, suggest that Platform B may have held some public functions, although we cannot completely reject a domestic use (Horn 2015:588-591).

Platforms constructed in the southern section may have also supported perishable buildings with domestic functions. The three consecutive Structure B-4 buildings stood out with their increasing dimensions, complexity and quality of construction materials. Most likely, the Structure B-4 buildings were public spaces dedicated to the veneration of the ancestral founders of Cahal Pech. Perhaps Structure A-1 at the Zopilote group had a similar function, although it is unclear why a single building was constructed 100 m south of the central precinct and whether it was truly constructed during the first part of the Kanluk phase. The presence of a complex public architecture, like Structure B-4 at the site core and perhaps Structure A-1 at Zopilote, suggests that some political changes occurred inside the Cahal Pech community throughout this facet of the Kanluk phase. For

instance, social differentiation may have become more pronounced. Nevertheless, the political organization during this time and its dynamics are not yet well understood.

During the second half of the Kanluk phase (600-300 B.C.), the original loci of occupation continued to be modified. Likely as a consequence of growing population, areas located east and south of the original occupations were settled for the first time. These constructions varied in form, dimensions, and construction techniques suggesting that their functions and status were likely different. The round platform exposed in the Eastern Ball Court likely functioned as a household public space (see Hendon 2000:299-300), while Structure F-2 was either the residence of a "privileged" household or a small public building. Even though Structure F-2 could have had a public function, the primary public building on the site core continued being Structure B-4, which continuously increased in its dimensions and quality of construction materials, suggesting how important it was to the Cahal Pech community. Nonetheless, the public building on Zopilote (Structure A-1) was larger than Structure B-4, leading us to wonder what its role was among the late-Kanluk residents of Cahal Pech.

Areas outside of the central precinct also were settled during this second part of the Kanluk phase. The calibrated dates obtained from Middle Preclassic contexts of Cahal Pech indicate that the occupations in the periphery occurred late in the second facet (Table 3.1; Awe 1992:1992, Table 1; Ebert et al. 2016:12, Table 4; Healy and Awe 1995:1999, Table 1). Most of these new settlements were located in the southern periphery, although some groups were also east and west of the central precinct. The architecture of these groups presented clear differences in scale, form, function, and complexity. Tamped-earth platforms, plastered platforms supporting apsidal or rectilinear

structures, circular buildings and pyramid-like structures were constructed in the peripheral settlements. Most of these constructions were public buildings, but some may have had private functions. It is worthwhile to mention that the occurrence of population growth, increasing construction activity and the appearance of new architectural forms, along with some material changes (e.g., technological changes in the obsidian artifacts, specialized production of shell beads, and increased presence of hand-made figurines) have been used as evidence of increasing complexity, in which a chiefdom-like system could have emerged (Awe and Healy 1994; Hohman 2002; Zweig 2010).

In spite of the accomplishments in the understanding of the early occupations of Cahal Pech, it is still necessary to clarify (1) how the emerging elites at Cahal Pech manipulated the physical landscape and the political economy to wield power over non-elites in either a network or corporate system (Blanton et al. 1996), and (2) how these political dynamics changed throughout the Kanluk phase. In order to investigate these concerns, I argue that it is crucial to carry out a comparative study of public and residential structures in terms of its prominence, form, accessibility, function, and associated activities (see Chapter 1). Data collected in prior investigations of the Cahal Pech central precinct, however, is insufficient for the purpose of comparing different types of social spaces. Therefore, I conducted large-block excavations in Plaza B—the earliest and longest-lived locus of architectural construction—with the objective of locating early- and late-Kanluk architecture and associated artifacts that can be used to test the following hypotheses.

3.4 REVEALING OR CONCEALING ELITES: MIDDLE RANGE THEORY

3.4.1 Hypothesis 1: “Elites Revealed”

If the political economy at Cahal Pech at some point of the Middle Preclassic (1100/1000-350 B.C.) was that of a network system in which elites promoted and emphasized social and economic differences (Blanton et al. 1996), then we should expect to find clear differentiation between elite and non-elite residential structures in terms of prominence, form, function, and associated activities (e.g., attached specialization, long-distance exchange, and consumption of prestige goods⁹). Moreover, we should expect to find a resemblance between public architecture and elite residences. The material correlates of Hypothesis 1 are mentioned in Chapter 1 and they are summarized in Table 3.2.

If this hypothesis is corroborated, then, Cahal Pech elites lived in buildings that differentiate them from the rest of the population. The chief inhabited the most prominent residence as a way to claim his power and status. The elite residential buildings were located in such a way that they had easy access to the public structures, spaces in which those Cahal Pech political actors performed rituals aimed to venerate their ancestors—perhaps considered to be the ancestors of the entire population. In those rituals, elites displayed and consumed their wealth, which included goods that were produced or imported to Cahal Pech for their exclusive use. The Cahal Pech chief and other elites spent time creating and maintaining relationships with elites of other centers. It was through these relationships that they obtained prestige goods. They also patronized the

⁹ In the Belize Valley, pottery belonging to the Mars Orange and Rio Nuevo Glossy paste-wares (Ball and Taschek 2003), as well as, greenstone items, obsidian tools, marine shell ornaments and figurines are some examples of prestige items (Awe 1992).

local manufacture of goods. Through the control of exchange relationships and local production of prestige goods, elites limited the possibility that other sectors of the population had access to these economic resources and thus access to power over non-elite. Non-elites had power to control most of the aspects of their life, but they needed elites to communicate with the community ancestors, and for their exclusive access to certain prestige goods necessary for significant rituals.

Table 3.2. Hypothesis 1: Network political economic strategy and their material correlates.

MATERIAL CORRELATES		HYPOTHESIS 1: EXCLUSIONARY STRATEGY		
	Architecture	Elite residence	Public building	Non-elite residence
Prominence	Visibility Centrality	High High	High	Low Low
Form	Scale	Large	Large	Small
	Size	High	High-Monumental	Low
	Quality of materials	High	High	Small
	Permanence Decoration	Individual focused	Individual focused	
Function	Complexity of layout	High	High	Low
	Plan	High	High	Low
	Restricted access	High: Residential	High: ritual / profane	Low: Residential, ritual
Specialization		Economic power		
Prestige goods				
Ceramic	Local (Mars Orange system)	Presence - elite consumption		Absence
	Foreign (SBM Tradition)	Presence - elite consumption		Absence
	Obsidian & greenstone items	Presence		Absence
	Marine shell ornaments	Presence		
Craft specialization		Attached specialization - prestige goods		
Ceramic	Mars Orange system	Presence		Presence
	Jocote system			Presence
	Obsidian	Presence		
Lithic formal tools		Presence		
Marine shell items		Presence		
Ritual goods		Individually focused & ostentatious		
Figurines		Presence - elite consumption		Domestic
Ceramic	Local (Mars Orange system)			
	Foreign (SBM Tradition)			

3.4.2 Hypothesis 2: “Elites Concealed”

If Cahal Pech had a corporate political economy at some point during the Middle Preclassic (1100/1000-350 B.C.) in which elites attempted to promote integration and mask social inequality (Blanton et al. 1996), then we should expect to find a similarity between elite and non-elite residential structures in certain aspects of prominence, form, and function, as well as associated activities. Additionally, we should expect to see evidence of increased investment in public/communal structures that would serve to integrate the whole community. The material correlates of Hypothesis 2 are described in Chapter 1 and they are summarized in Table 3.3.

If Hypothesis 2 is corroborated, then, Cahal Pech elites employed their power over the population to build monumental ritual spaces, in which they performed rituals centered on themes with an egalitarian ethos such as fertility, or other theme related to agricultural production. This is because elites had certain control over production or distribution of subsistence goods. Because elites attempted to hide intense social differentiation, they lived in residences that were not too different from the rest of the population or if they were, it was impossible to discern where the chief inhabited. Moreover, in order to increase the apparent egalitarian ethos, elites did not accumulate or display wealth. In fact, they allowed prestige goods to be distributed among the population. Thus, although elites maintained external relationships with other elites, this was not a key issue for maintenance of their power over the rest of the population. In addition, elites used feasting events as a means of redistribution and, most importantly, as a way to reinforce the idea of egalitarianism.

Table 3.3. Hypothesis 2: Corporate political economic strategy and their material correlates.

MATERIAL CORRELATES		HYPOTHESIS 2: CORPORATE STRATEGY		
	Architecture	Elite residence	Non-elite residence	Public building
Prominence	Visibility Centrality	Low to High	None	High
Form	Scale	Large	Small	Large, monumental
	Size	Low	Low	High-Monumental
	Height	Small to High	Small	High
	Permanence Decoration			Ritual motifs
Plan	Quality of materials	Low	Low	High
	Complexity of layout	Low	Low	High
Function	Restricted access	Low	Low	Low
	Specialization	Low: Residential, ritual	Low: Residential, ritual	High: Ritual
		Ideological power		
Prestige goods				
Ceramic	Local (Mars Orange system)	No spatial variability		
	Foreign (SBM Tradition)			
	Obsidian & greenstone items			
	Marine shell ornaments			
Craft specialization		Specialization focused on ritual or basic goods		
Ceramic	Mars Orange system	Presence	Presence	Communal rituals
	Jocote system	Presence	Presence	
Lithic formal tools	Obsidian	No spatial variability		Communal rituals
Marine shell items				Communal rituals
Ritual goods		Communal focused	Domestic	Communal focused
Figurines		Presence -domestic rituals		Communal rituals
Ceramic	Local (Mars Orange system)			Communal rituals
	Foreign (SBM Tradition)			Communal rituals

3.4.3 Hypothesis 3: “No Chiefdoms yet”

If the political formation prevailing at Cahal Pech during the Middle Preclassic (1100/1000-350 B.C.) corresponded to an unranked society, in which social inequality was not yet institutionalized, then we should not find any differences in residential structures and access to resources. In addition, there will be a lack of variety in public buildings. This must be considered as a null hypothesis.

The material correlates of this hypothesis include residences with no differential patterning in terms of prominence, scale or form. The egalitarian ethos of unranked societies disallows the expression of social difference of households and public architecture should be restricted to men’s houses (Blake 1991; Flannery and Marcus 2005). Although these public buildings may not differ structurally from ordinary residences, they tend to be larger than average residential units because they accommodate large numbers of people (Blake 1991). In addition, the activities conducted in a men’s house differ considerably from those carried out in residences since all the activities will be male-focused (Blake 1991). Access to these buildings is not restricted. Prestige goods might be present but there is not any significant patterning in the spatial distribution.

If Hypothesis 3 is corroborated, then, the ancient inhabitants of Cahal Pech during the Middle Preclassic (1100/1000-350 B.C.) were egalitarian, and therefore, they lived in residences with a lack of pattern differentiation. In addition, their public buildings were restricted to the presence of men’s houses, to which any man that had gone through an initiation ritual had access.

Finally, while these hypotheses present contrasting political dynamics, it needs to

be considered that the data may likely be a combination of material correlates since the political economies of the dual-processual model are the opposite extremes of an overlapping continuum of political practices (Blanton et al. 1996). In the event that emerging elites were using both strategies at once, I would expect the material and artifactual correlates of the different hypotheses presented below to manifest in spatially separate contexts. For example, while some elite contexts might show evidence of emerging social differentiation in architectural form and related activities, others might display broader similarities to non-elite contexts. In addition, it must be acknowledged that data may reveal evidence of shifting political dynamics through time because it is highly probable that the strategies of social control used by chiefdom elites changed throughout the Middle Preclassic period (1100/1000-350 B.C.).

CHAPTER 4.

CONCEALED BY PLAZA FLOORS: THE MIDDLE PRECLASSIC BUILDING PROGRAMS

4.1 INTRODUCTION

The proposed hypotheses are oriented to clarify how emerging elites at Cahal Pech manipulated the physical landscape and the political economy to acquire, enhance, and wield power over non-elites in either a network or corporate system (Blanton et al. 1996). The evidence used to test this thesis focuses on the comparison of domestic and public structures and associated artifacts that provide insights about the nature of social spaces during the course of the Cunil and Kanluk phases (1100/100-300 B.C.). I decided to conduct large block excavations at Plaza B, area that was the earliest Cahal Pech core. I also choose Plaza B as the area to be explored because it has yielded promising data in terms of Middle Preclassic architecture and materials (Chapter 3; Awe 1992; Cheetham 1995, 1996; Garber et al. 2005, 2006, 2007, 2008, 2009, 2010).

During the summer of 2011, I supervised the excavation of two test pits in Structure B-2 (EU B-2/1 and B-2/2) on the eastern side of Plaza B in order to determine the construction sequence of this structure (Peniche May 2012b). Preliminary analysis of the recovered artifacts indicated that the earlier construction phases of Structure B-2 dated to the Kanluk phase (900-300 B.C.). I also supervised the excavation of three exploratory units that were placed on the eastern and southern sections of Plaza B (CHP-PB-PU-13, CHP-PB-PU-14 and CHP-PB-PU-15) with the goal of locating additional Middle Preclassic architecture. As a result, previously unknown substructures dating to

the Kanluk phase (900-300 B.C.) were exposed on the southern section of Plaza B, which significantly altered earlier models about the extent and intensity of construction during this phase.

To further explore these findings, in the course of the 2012 and 2013 field seasons, I continued excavating the southern side of Plaza B, uncovering a complex architectural sequence that extends from the Cunil (1100/1000-900 B.C.) to the Spanish Lookout phase (A.D. 900-1000; Peniche May 2013, 2014a, 2014b, 2015b). Comparison of data from these structures with domestic and public contexts from the site periphery and acropolis described in the previous chapter constitute the basis of this research (Awe 1992; Cheetham 1995, 1996, 2004; Cheetham et al. 1993a, 1993b, 1994; Garber et al. 2005, 2006, 2007, 2008, 2009, 2010; Iannone 1993, 1994, 1995, 1996; Ishihara-Brito and Awe 2013; Lee 1996; Lee and Awe 1995; Powis 1996; Powis and Hohman 1995).

4.2 METHODOLOGY

Over a period of three field seasons (2011-2013), I supervised large-block excavations on the southern section of Plaza B, immediately adjacent to Structure B-5. The explored area enclosed 36m east-west by 12 m north-south. In order to facilitate spatial control, the excavation units measured 3 m by 3 m, although the dimensions of units occasionally were reduced or increased depending on the excavation needs. The location of each unit was also determined by the excavation needs. New units were opened as required to expose architectural remains. Overall, 25 excavation units were excavated, encompassing a total area of 186.5 m² (Figures 4.1 and 4.2). The excavation units were labeled using the abbreviation of the site, abbreviation of the excavated

area/structure, abbreviation of plaza unit, and a sequential number (e.g., CHP-PB-PU-17). Most of the units were excavated deep enough to expose Kanluk architecture. Six units were dug until bedrock or sterile soil were exposed (EU CHP-PB-PU-16, CHP-PB-PU-17, CHP-PB-PU-19), CHP-PB-PU-31, CHP-PB-PU-33, and CHP-PB-PU-35). All excavation units were oriented 15° west of the magnetic north.

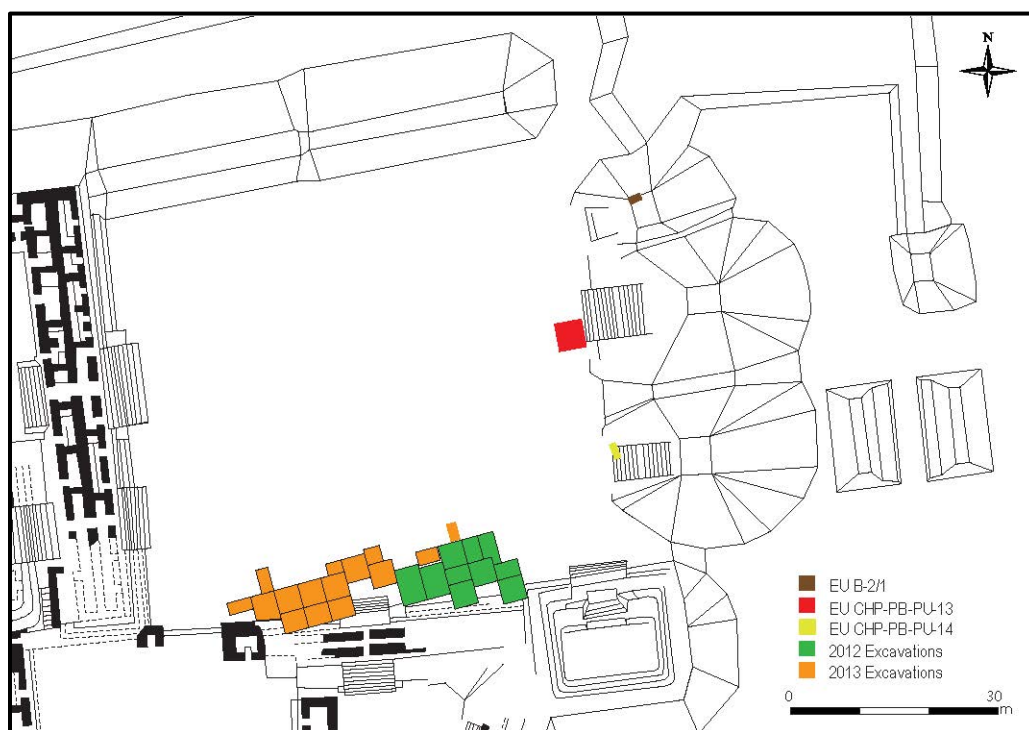


Figure 4.1. Location of 2011-2013 excavation units placed on Structure B-2 and Plaza B.

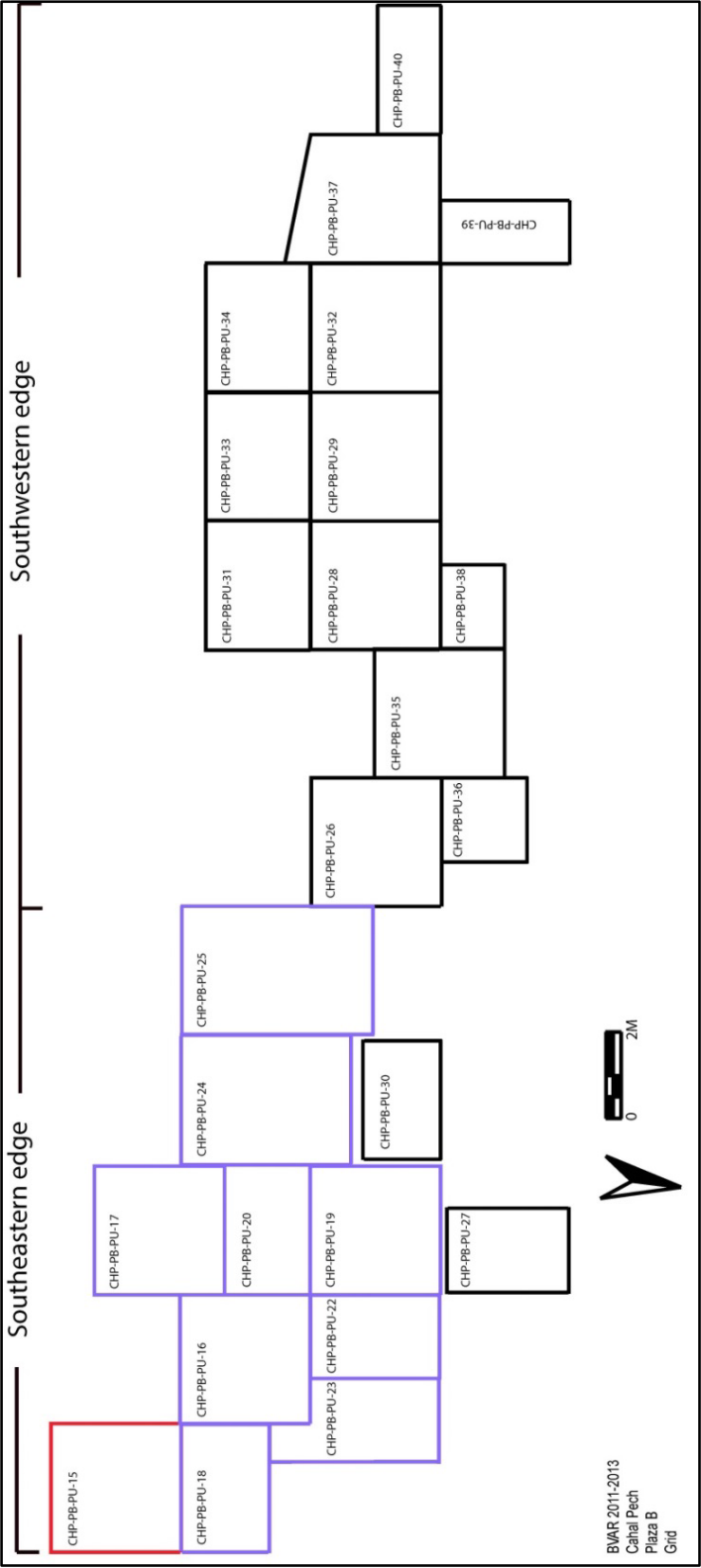


Figure 4.2. Location and nomenclature of excavation units opened in 2011 (red), 2012 (blue) and 2013 (black).

Excavations were conducted using cultural levels. Context registration followed standards established by the Belize Valley Archaeological Reconnaissance project (see BVAR Supervisor's Manual n.d.). All matrixes were screened through ¼ inch mesh. The archaeological artifacts recovered during the excavation and screening activities were immediately separated by raw material (e.g., pottery, *jute* shell, other faunal remains, chert, obsidian, ground stone, figurines, human bone, marine shell artifacts, etcetera). Then they were collected, bagged and labeled based on excavation unit, level, lot and context. Lot numbers were assigned based on the excavated area/structure, followed by a sequential series of numbers (e.g., PL-B-12). Additionally, a series of forms created by the BVAR project were filled out during the excavation process in order to inventory artifacts, special finds and photographs, as well as to register contextual data about each lot (see Appendix 1).

As a result of the excavations, an architectural sequence spanning from the Cunil (1100/1000-900 B.C.) to the Spanish Lookout phases (A.D. 900-1000) was exposed (Peniche May 2012b, 2013, 2014a, 2014b; Figure 4.3). In this chapter, I describe the complex sequence of Cunil and Kanluk buildings exposed beneath Plaza B (Peniche May 2013, 2014a, 2014b). It is worth noting that the relative chronology of the buildings was assigned based on ceramic evidence (see Chapter 5).

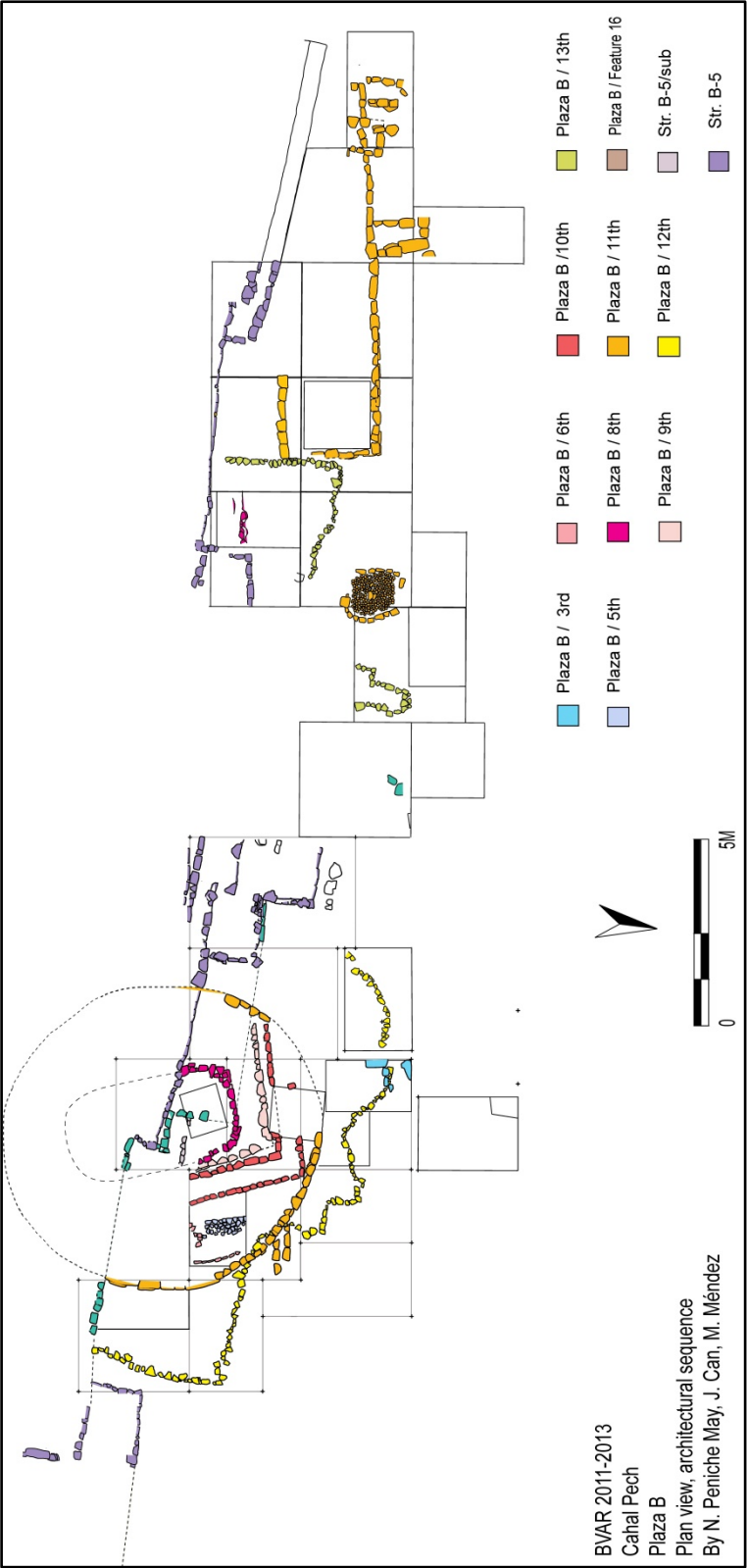


Figure 4.3. Plan view of the construction sequence exposed beneath Plaza B.

4.3 THE ARCHITECTURAL SEQUENCE BENEATH PLAZA B: THE CUNIL PHASE (1100/1000-900 B.C.)

4.3.1 Construction Phase Plaza B/1st

The first evidence of occupation on the southern section of Plaza B is represented by the construction phase Plaza B/1st. This phase was exposed in EU CHP-PB-PU-16, CHP-PB-PU-17 and CHP-PB-PU-19, all units located in the eastern section of the excavated area. This phase consisted of a surface made of tamped marl, Plaza B/Floor 20, which was made by scraping and leveling the original surface of the hill (Figure 4.4).

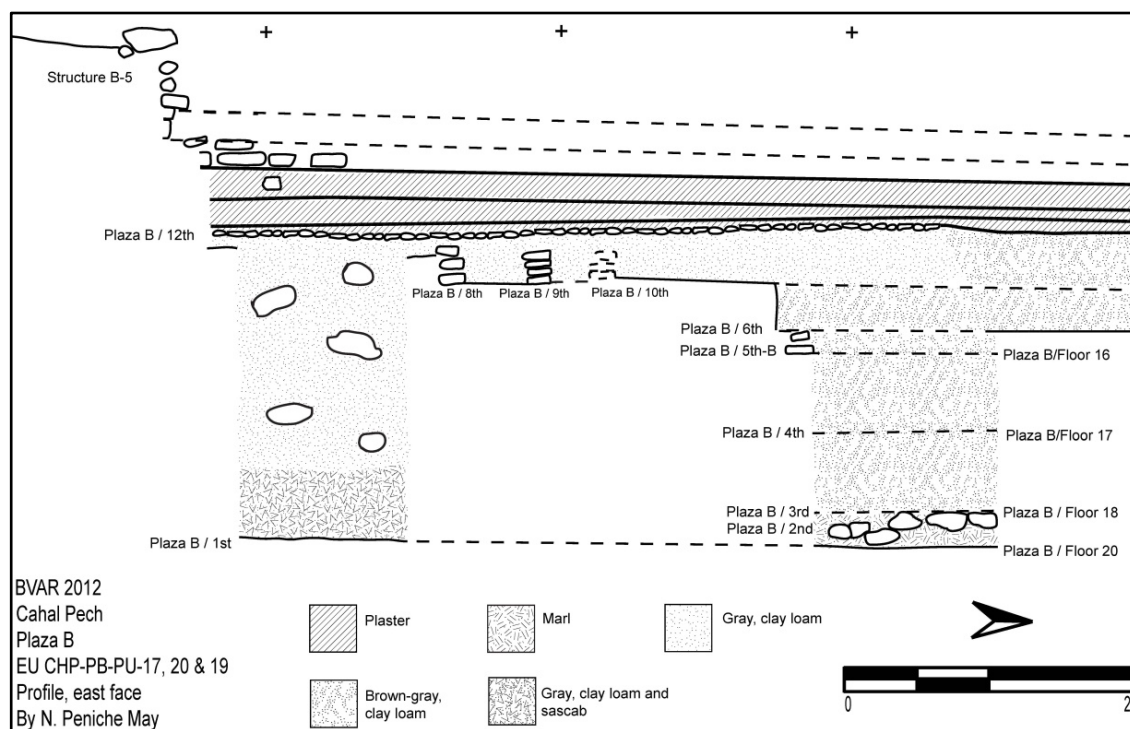


Figure 4.4. North-south profile of EU CHP-PB-PU-17, CHP-PB-PU-20 and CHP-PB-PU-19. This profile illustrates several construction phases dating to the Cunil phase (Plaza B/1st, Plaza B/2nd, Plaza B/3rd, Plaza B/4th and Plaza B/5th).

Cheetham (1996:16) reported this tamped-marl floor during the excavation of his Unit 10. This surface was associated with a line of cut stones and a single post hole cut into the ground (Structure U10-1). This early building was only partially exposed and, because of this, its dimensions and shape were not established. Based on the available evidence, nevertheless, Cheetham concluded that the tamped-marl surface was likely the flooring of a perishable structure constructed directly on the ground (Figure 4.5).

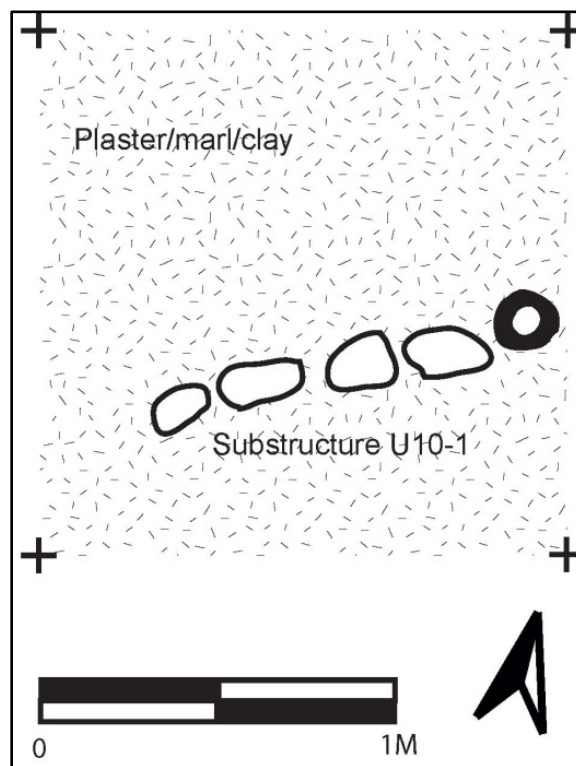


Figure 4.5. Substructure U10-1 and its associated tamped-marl floor (redrawn from Cheetham 1996:23, Figure 8.3e).

The construction techniques used to build Structure Plaza B/1st and the neighboring Structure B-4/1st were similar. In order to build them, the original ground surface was scrapped and leveled. Modification of the original ground surface or bedrock

by the earliest inhabitants of Plaza B conforms with the pattern observed in the initial occupations of Cahal Pech and other Maya lowland sites, such as Altar de Sacrificios, Barton Ramie, Blackman Eddy, Ceibal, Cival, Cuello, Komchen, the Mirador Group at Dzibilchaltun, Nakbé, and the Yaxha-Sacnab Basin. In most of these sites, the earliest buildings were constructed directly on bedrock or the original ground surface and were made of perishable materials. These early constructions were apsidal or circular in shape and presumably held domestic functions (Andrews V 1981; Gerhardt and Hammond 1991; Hansen 1998; Powis 1996; Willey et al. 1965; Rice 1976; Ringle and Andrews V 1988; Smith 1972).

4.3.2 Construction Phase Plaza B/2nd

The following construction phase (Plaza B/2nd) was represented by an alignment running north-south, which was placed on top of the tamped marl surface Plaza B/Floor 20 (Figure 4.4). In order to construct this alignment, untrimmed limestone blocks were used, which rose approximately 20 cm above Plaza B/Floor 20. The alignment could represent the remains of an early low platform that may have supported a perishable building with a tamped marl surface (Plaza B/ Floor 19). Like the previous construction phase, its shape and dimensions were not determined because it was only partially exposed.

The ceramic uncovered at the interior of this feature consisted of unslipped body sherds and vessel fragments of the Cocoyol and Uck groups, indicating that Plaza B/2nd dates back to the Cunil phase. It is worth mentioning that some Savana sherds were observed in this context but it is likely that they were misidentified or washed out from

the baulks during the intensive rains, because the next construction phase only contained sherds of the Cunil ceramic complex.

4.3.3 Construction Phase Plaza B/3rd

During the subsequent phase (Plaza B/3rd), the platform Plaza B/2nd was completely covered by a 30 cm thick layer of clay-like marl creating a new surface—Plaza B/Floor 18 (Figure 4.4). This new raised surface may have functioned as the patio of a structure that has not yet been located. During this phase, the slope of the natural hill was modified by constructing three steps. The two lower steps were carved into the bedrock and covered with tamped marl/*sascab*, while the third step was built by adding a roughly cut stone. These steps lead onto the leveled surface of the hilltop, exposed in CHP-PB-PU-27 (Figure 4.6). A similar Cunil feature, in which the slope was cut to build a step, was identified westwards, in the south central section (Garber et al. 2008; Horn 2015). To date, however, it is not possible to determine whether both bedrock modifications occurred as part of the same construction activity. Based on the unslipped body sherds and fragments of Cocoyol and Uck groups, we can state that the construction of Plaza B/Floor 18 and the modification of the slope took place during the Cunil phase.

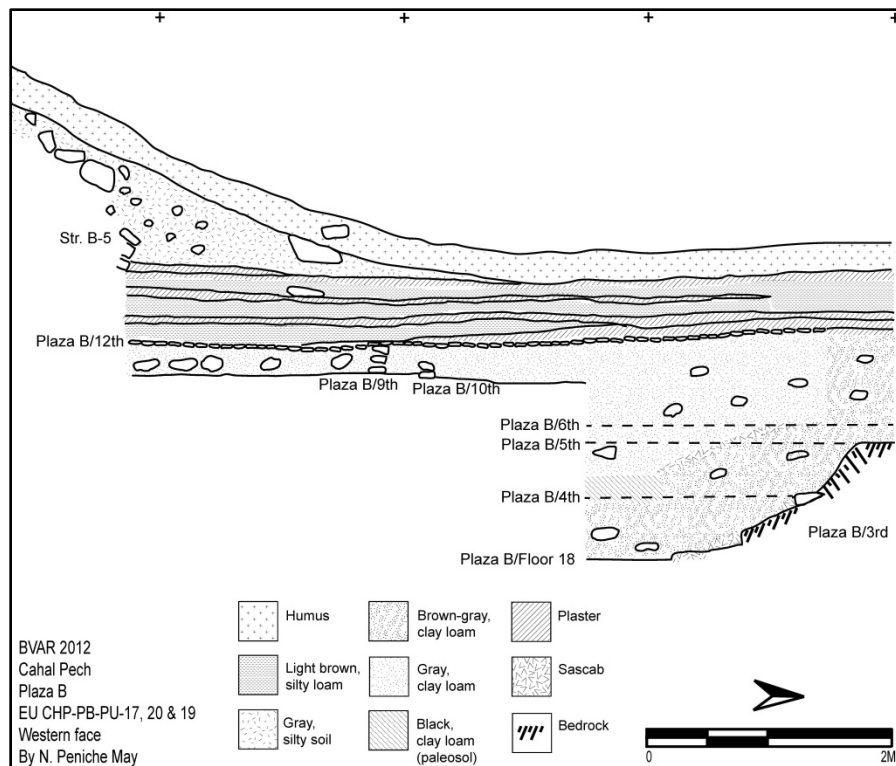


Figure 4.6. Profile of the construction phase Plaza B/3rd represented by Plaza B/Floor 18 and the modified bedrock. Plaza B/4th, Plaza B/5th and Plaza B/6th also are represented, although they were not directly observed on the profile.

4.3.4 Construction Phase Plaza B/4th

The following construction phase is represented by Plaza B/4th (Figures 4.4 and 4.6). During this phase, the constructed area was elevated approximately 50 cm by depositing sandy clay fill mixed with few yellow stones. Subsequently, another tamped earth surface (Plaza B/Floor 17) was constructed. Plaza B/Floor 17 was likely the same surface as the tamped earth/marl/plaster Floor 9 reported by Cheetham (1996). Floor 9 was interpreted as a patio surface surrounding a cobbled platform (Substructure U10-2). Although only 0.30m² of its north side were exposed, this platform was considered to be apsidal or circular in shape (Figure 4.7).

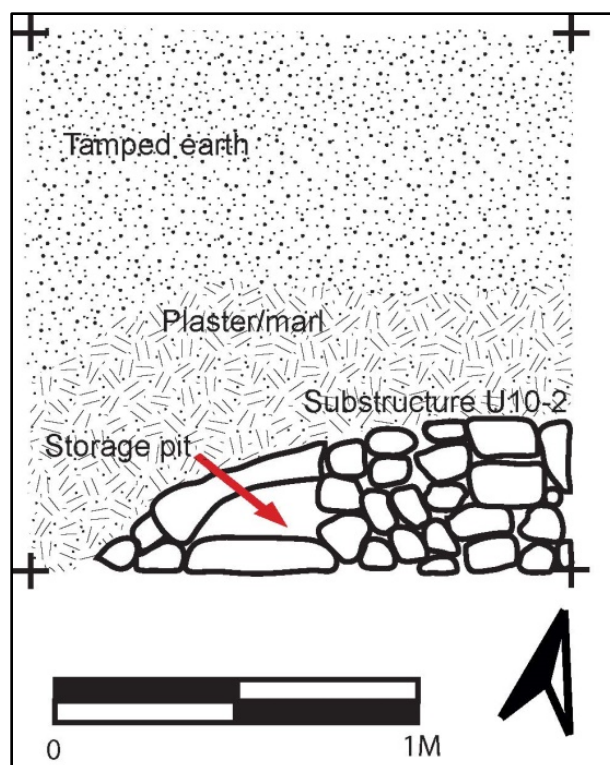


Figure 4.7. Structure U10-2 and its associated patio (redrawn from Cheetham 1996:23, Figure 8.3d).

Ceramic evidence from CHP-PB-PU-16 suggests that this phase was constructed during the Cunil-Kanluk transition. In addition to unslipped sherds, we recovered fragments of Cocoyol and Uck ceramic groups, as well as a few sherds of Savana and Unnamed Brown-black groups (N=14, 9.7%).

It is worth mentioning that the early construction phases were located in the eastern section of the excavated area (EU CHP-PB-PU-16 and CHP-PB-PU-19). Although it is plausible that the western section also was used during Cunil times for several purposes, it was not until the construction phase Plaza B/5th that we have evidence of activity in the western section.

4.4 THE ARCHITECTURAL SEQUENCE BENEATH PLAZA B: THE EARLY FACET OF THE KANLUK PHASE (900-600 B.C.)

4.4.1 Construction Phase Plaza B/5th

In the following construction phase, Plaza B/5th, another tamped earth surface with small yellow stones (Plaza B/Floor 16), was built in the eastern section. With this surface, the constructed area was elevated another 50 cm, reaching the summit of the original hill (Figures 4.6 and 4.8). Plaza B/Floor 16 likely functioned as the base of two low platforms, Plaza B/5th-A and Plaza B/5th-B. These platforms were partially exposed because they were only uncovered in two test pits and were dismantled during pre-Columbian times. Consequently, the morphological characteristics of the platforms were not established.

Plaza B/5th-A was documented by a wall running east-west. This wall consisted of two parallel rows of roughly-shaped stones, one course in height. The double wall measured 50 cm in thickness and rose only 10 cm above Plaza B/Floor 16 (Figure 4.9). Plaza B/5th-A seems to be similar to the superstructure of Structure B4-3rd (Awe 1992). If so, Plaza B/5th-A could have been apsidal in shape.

Plaza B/5th-B consisted of a double course of roughly cut stones facing north. This wall rose at least 15 cm above the tamped-earth surface (Figure 4.4). Although we do not have evidence to corroborate this hypothesis (except for the elevations), it is likely that Cheetham's (1996) Floor 8, a cobbled surface, corresponds to the interior flooring of Plaza B/5th-B. Evidence of this cobbled surface, nonetheless, was not found during our excavations.

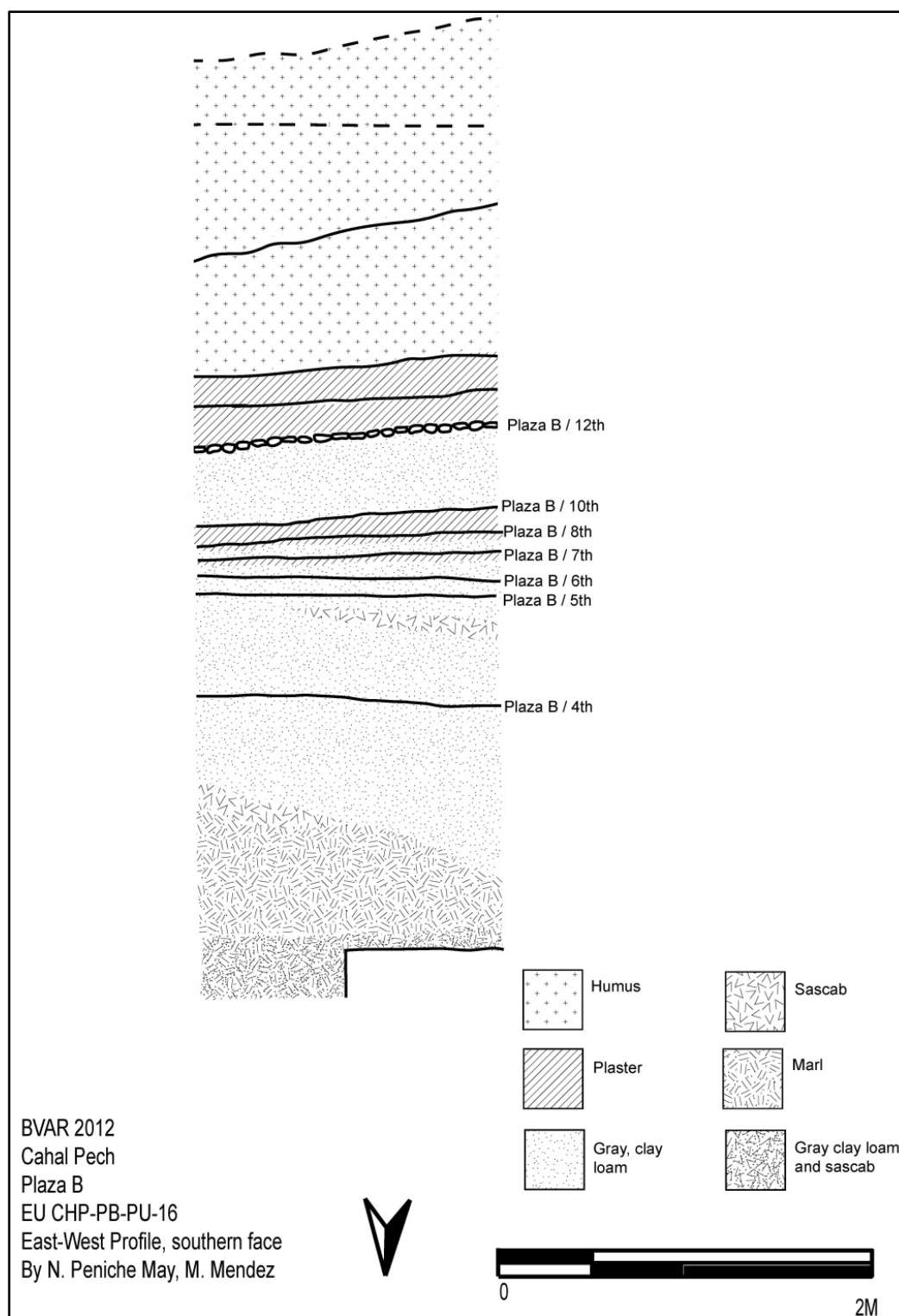


Figure 4.8. East-west profile of EU CHP-PB-PU-16.

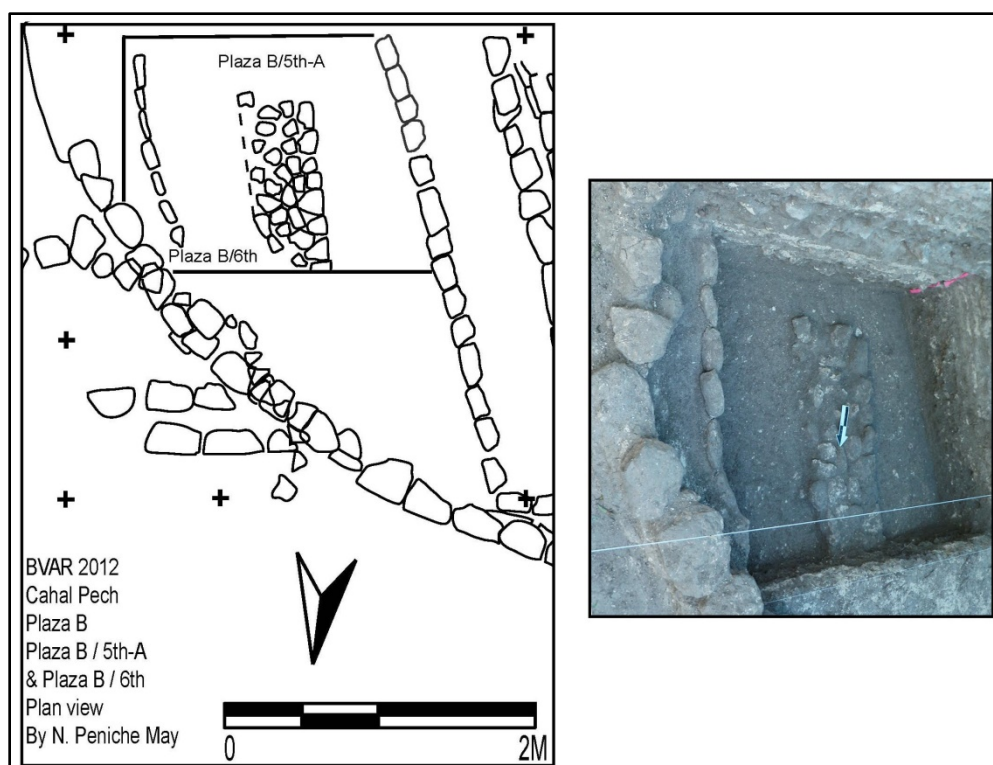


Figure 4.9. Plan view of EU CHP-PB-PU-16 showing Plaza B/5th-A and Plaza B/6th.

The western section of the excavated area also may have been occupied during this construction phase. This occupation was represented by a group of roughly dressed stones that could have been the remains of a substructural platform—Plaza B/5th-C. Because this stone alignment was only located at the southeastern corner of EU CHP-PB-PU-35, the formal characteristics of Plaza B-5th-C were not established.

The construction phase Plaza B/5th was predominantly associated with ceramic materials classified as unslipped sherds, Cocoyol and Uck ceramic groups, but also counted with a presence of Savana and Unnamed Brown-black sherds. This ceramic data suggests that Plaza B/5th-A, Plaza B/5th-B and Plaza B/5th-C were likely built at the beginning of the Kanluk phase.

4.4.2 Construction Phase Plaza B/6th

At the beginning of the Kanluk phase, the low platforms Plaza B/5th-A and Plaza B/5th-B were completely covered by Plaza B/Floor 15, another tamped earth surface (Figures 4.4, 4.6 and 4.8). Resting on the southeastern section of this floor (EU CHP-PB-PU-16), there was a semi-circular alignment composed of small slabs that were set upright up into Plaza B/Floor 15 (Plaza B/6th; Figure 4.8). Because of the limited dimensions of the unit where this small-slab feature was found, its dimensions and morphological characteristics were not established (Figure 4.10).



Figure 4.10. Construction phase Plaza B/6th. The small-slab alignment was exposed during the excavations of EU CHP-PB-PU-16. The stones that made of this feature were set upright up into Plaza B/Floor 15.

Sidrys and Andersen (1978) exposed a similar feature during the excavations of the round building Structure F-2 of Chan Chen, in Northern Belize. They reported twenty-eight small stones that were set upright up into the original plaster of the round

platform. The small slabs were forming a semi-circular pattern and, interspersed between them, there were some holes. This feature was interpreted as “the remains of a very low masonry wall” (Sidrys and Andersen 1978:647-648, Figure 10) that served as base of a wood-and-thatch superstructure built upon the surface of the round platform.

Based on the similarity between the Cahal Pech and Chan Chen features, it is suggested that the small-slab feature exposed at Plaza B functioned as a low wall of a perishable building whose plan is not defined yet. This low wall was likely constructed during the early facet of the Kanluk phase. Beneath Plaza B/Floor 15, we recovered sherds of Jocote, Savana, and Unnamed Brown-black ceramic groups. The Cocoyol ceramic group was poorly represented.

4.4.3 Construction Phase Plaza B/7th

Construction phase Plaza B/7th was only exposed at EU CHP-PB-PU-16. It consisted of Plaza B/Floor 14, a soft, unpolished, and chalky surface located 10 cm above the previous tamped earth surface (Figure 4.8). Plaza B/Floor 14 was made of either tamped marl or tamped lime. It was soft, unpolished, and chalky. The north-south alignment made of small slabs constituted the eastern limit of this surface. Nevertheless, the architecture associated with this plaster-like surface was not found during our excavations. The ceramic materials that predominated beneath the construction fill of this floor were classified as Savana and Jocote. Unnamed Brown-black, Cocoyol, Uck, Unnamed Black, Joventud, and Sayab ceramic groups counted with a minor presence.

4.4.4 Construction Phase Plaza B/8th

Construction phase Plaza B/8th represents the next modification of the area. During this phase, the surface of the eastern section was raised approximately 10 cm (Figure 4.8). Gray-brown, sandy clay was used to achieve this purpose. On top of this fill, the substructural platform Plaza B/8th-A—designated as Feature 19 during the excavation process—was constructed. Because this substructure lays partially beneath the Classic-period Structure B-5, our excavations only exposed its northern section and for this reason, its total dimensions were not be established. Nevertheless, we have enough data to make an educated guess about some of its morphological characteristics.

The substructural platform Plaza B/8th-A was likely apsidal in shape. The longest axis of Plaza B/8th-A ran north-south, suggesting that the structure may have faced east, towards the early Kanluk manifestations of Structure B-4. Regarding its east-west axis or width dimension, it measured approximately 2.60 m (Figure 4.11).

Earlier constructions at Structure B-4 (Awe 1992) and contemporaneous buildings at Cuello (Gerhardt and Hammond 1991), Colha (Potter et al. 1984), Xaman Susulá (Peniche May 2012a), and in the Socunusco zone (Clark and Blake 1994) also were apsidal in shape. These buildings have been interpreted as having a domestic function, indicating the “antiquity and homogeneity of this form” and establishing “a predictable pattern of early residence architecture” (Hansen 1998:55).

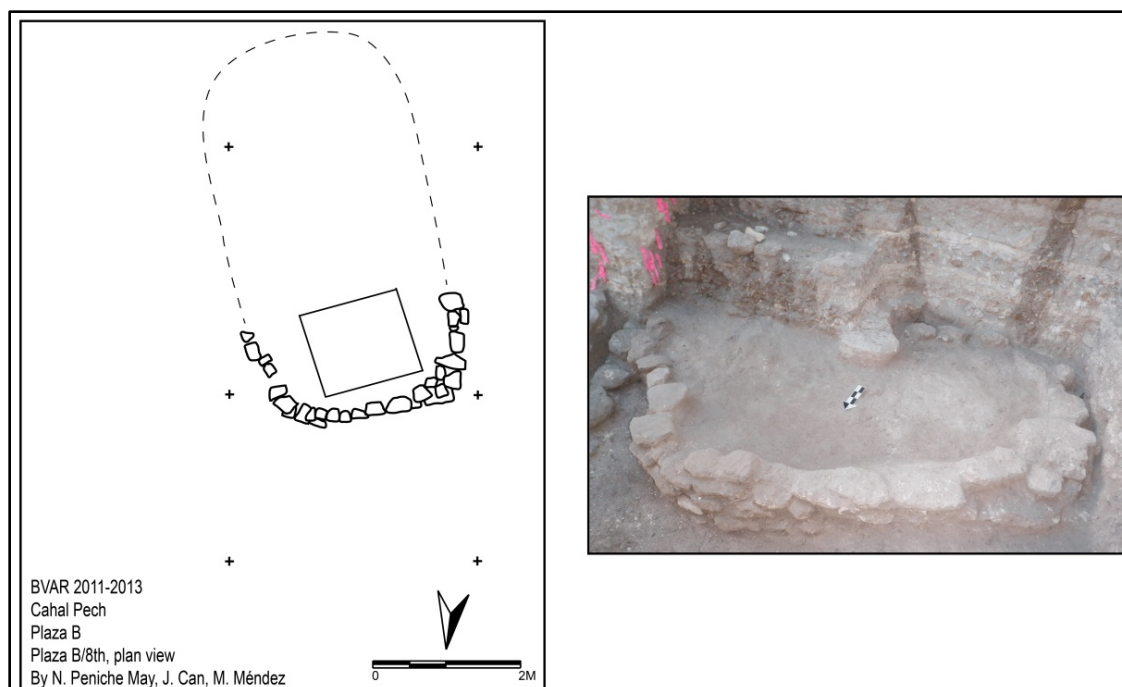


Figure 4. 11. Plan view of Structure Plaza B/8th-A. This structure consists of an apsidal low platform built at the beginning of the Kanluk phase.

I was not able to distinguish a formal patio-surface (i.e., tamped earth or plaster floor) associated with this feature but we know that it was resting on the fill used to elevate the constructed area. From this surface, the apsidal structure rose approximately 56 cm—although the first 10-20 cm (depending on the section of the structure) consisted of fill (Figure 4.12). Contemporaneous structural platforms at Barton Ramie and Cuello, for instance, also rose further above the surface in comparison to the initial constructions (Gerhardt and Hammond 1991; Willie et al. 1965).

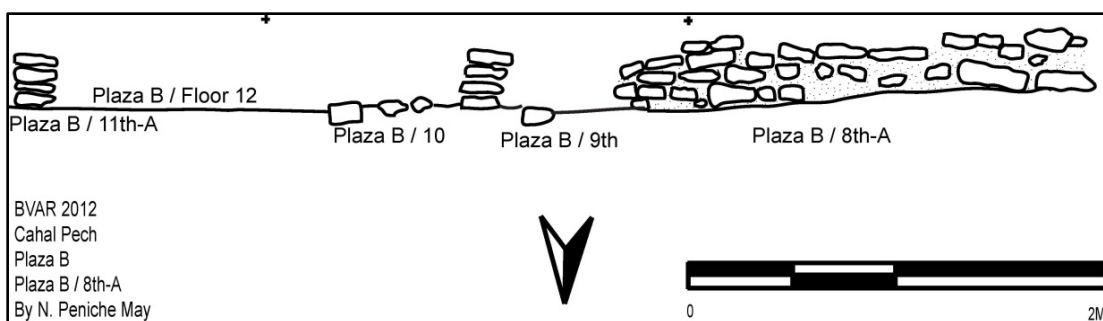


Figure 4.12. Profile of Structure Plaza B / 8th-A.

The retaining wall of this building was made of three or four courses of limestone blocks. These blocks were roughly cut as only their faces were shaped. Their dimensions were quite diverse measuring 8-30 cm in length by 4-10 cm in thickness. It is interesting to note that the stones that made the retaining wall were not all packed but there was space between them. This space was filled with gray-brown, sandy clay (Figure 4.13).



Figure 4.13. Structure Plaza B/8th-A.

I was not able to determine whether the retaining wall was finished with plaster or other material. Nor did we identify the interior flooring of the substructure nor evidence of postholes. Despite this, it is highly probable that the apsidal substructural platform was crowned by a perishable structure.

A test pit was placed at the interior of the structure expecting to find evidence of the earlier construction phases described above (Figure 4.4). Nevertheless, this was not the case. Rather we only found fill containing large amounts of sherds classified as Savana and Jocote ceramic groups and a minor presence of the Cocoyol, Uck, and Unnamed Brown-black. Although one sherd was identified as belonging to the Chunchinta ceramic group, this phase can be confidently assigned to the early facet of the Kanluk phase.

The bottommost 20 cm were almost lacking in pottery, which made it difficult to establish when Plaza B/1st was filled to support other constructions. Based on the evidence found by Cheetham (1996), however, I do think that this section was filled during the transition between the Cunil and Kanluk phases when the cobbled platform Plaza B/4th was constructed. The absence of surfaces in this area is likely explained by the custom of dismantling constructions when others were about to be built.



Figure 4.14. Feature Plaza B/8th-B. This feature was represented by a step facing south, which was built by cutting the bedrock and adding roughly stones.

In addition to Plaza B/8th-A, this construction phase also was represented in the western area of the excavated area, specifically in EU CHP-PB-PU-31. Plaza B/8th-B consisted of a modification of the bedrock, which was achieved by cutting a straight edge and adding a couple of roughly cut stones to define a step facing south. The bedrock was practically flat, suggesting that it could have functioned as patio surface or the floor of a perishable structure (Figures 4.14 and 4.15).

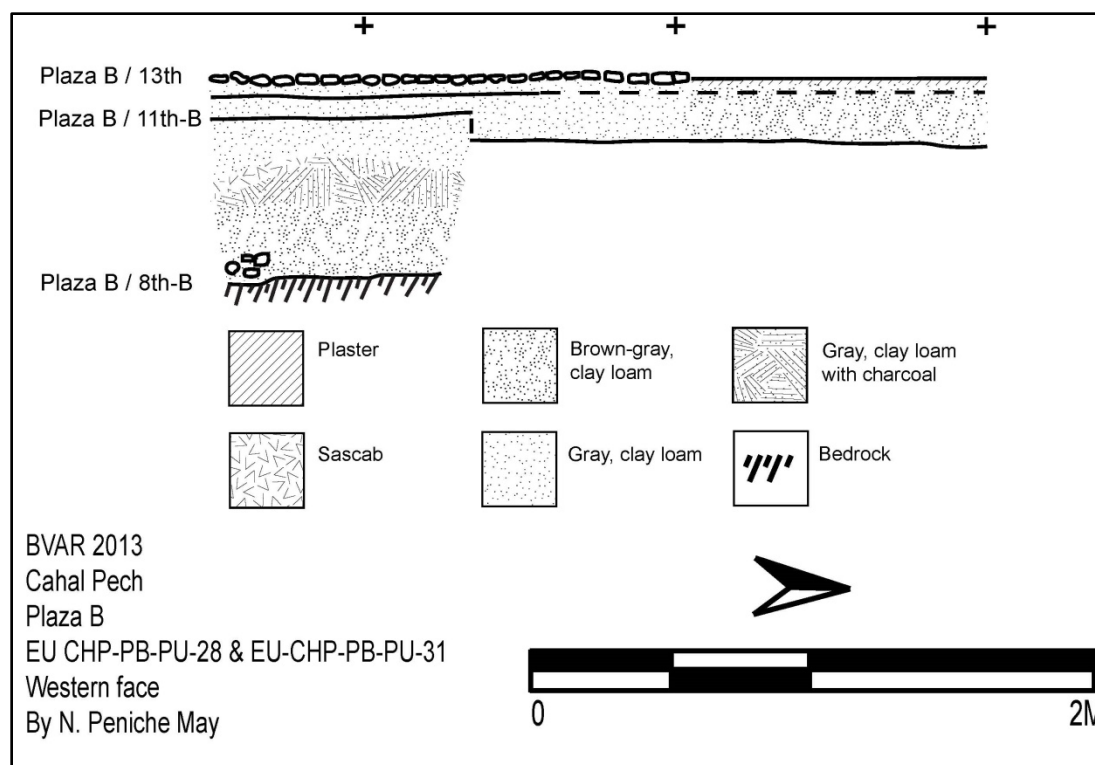


Figure 4.15. North-south profile of EU CHP-PB-PU-28 and CHP-PB-PU-31. Plaza B/8th-B consisted of the modification of the bedrock in order to build a small step.

It is important to highlight that, although this feature was assigned to the construction phase Plaza B/8th, it is difficult to establish with certainty when the bedrock was modified. Based on its elevations, the modified bedrock slightly corresponds to the construction phase Plaza B-4th, when Plaza B/Floor 17 was built. Nevertheless, although we do not deny that the western section was used for several purposes during the Cunil phase, and the ceramic evidence strongly indicates that the modified bedrock was in use until the early facet of the Kanluk phase. Most of the pottery uncovered on top of the bedrock of the western section was classified as Savana and Jocote ceramic groups, with some sherds representative of the Cocoyol, Uck, Unnamed Black, Unnamed Brown-black and Chunhinta ceramic groups.

4.5 THE ARCHITECTURAL SEQUENCE BENEATH PLAZA B: THE LATE FACET OF THE KANLUK PHASE (600-300 B.C.)

4.5.1 Construction Phase Plaza B/9th

During the construction phase Plaza B/9th, the apsidal platform was completely covered by the first low rectangular platform (designed as Feature 20 during the excavation process) and its associated patio floor (Plaza B/Floor 13). Accordingly, Structure Plaza B/9th represented a complete change in the architectural style in this location. The shift in architectural style was not unique to Cahal Pech. Low rectangular platforms began being constructed elsewhere in the Belize Valley at Blackman Eddy (Garber et al. 2004), Nohoch Ek (Coe and Coe 1956) and Pacbitun (Hohman and Powis 1996). Interestingly, the early inhabitants of Nakbe in Guatemala also built rectangular platforms as early as 800 B.C (Hansen 1998), indicating that this change in architectural style was a lowland phenomenon.

The introduction of the rectangular buildings may also have represented a change of function of the area—as the first rectangular structures in the Maya lowlands are usually interpreted as the first public structures (e.g., Garber et al. 2004; Gerhardt and Hammond 1991; Healy et al. 2004). Nonetheless, this correlation between form and function needs to be corroborated because some rectangular structures have been interpreted as residences based on their artifactual assemblages (e.g., Hohman and Powis 1996). Despite this, researchers have pointed out that rectangular buildings have a tendency to replace circular ones with increasing social complexity (Lawrence and Low 1990; Powis 1996; Whiting and Ayres 1968).

The rectangular platform Plaza B/9th lays partially beneath the Classic-period Structure B-5. In addition, it was dismantled in pre-Columbian times. For these reasons, we only exposed its northeastern section and, as a consequence, its total dimensions were not established. Nevertheless, we could establish that Plaza B/9th measured at least 3.16 m (east-west) by 2.20 m (north-south). Plaza B/9th was oriented 8 degrees west of magnetic north, like the Structure B-4 Cunil residences (Figure 4.16).

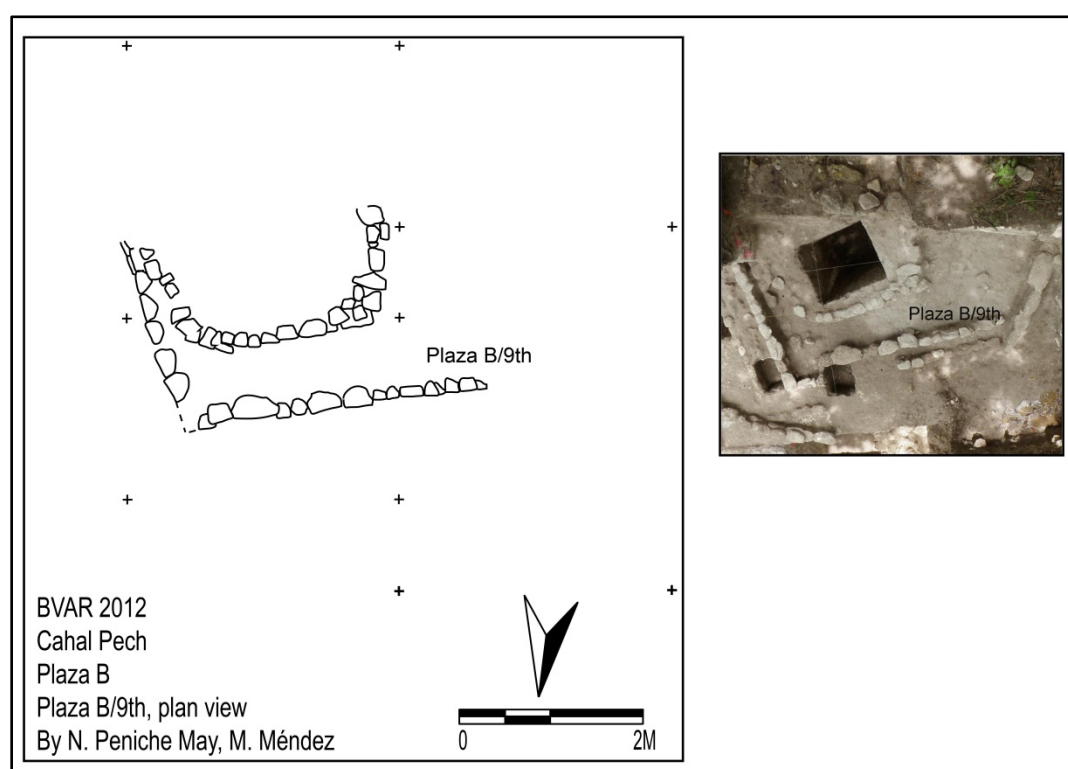


Figure 4.16. Plan view of construction phases Plaza B/8th and Plaza B/9th.

The total height of the platform was not established. We only registered three courses of stones composing the retaining wall, which stood 36 cm above its associated patio floor Plaza B/Floor 13th. Nevertheless, Plaza B/9th must have been taller than three courses, at least 50 cm, in order to cover completely the apsidal platform Plaza B/8th-A.

The stones that made up the retaining wall of Plaza B/9th were different from the stones used to build the apsidal platform Plaza B/8th-A. The stones were better shaped and their dimensions more regular, most of them measuring 30 by 6 cm (Figures 4.6, 4.17 and 4.18).

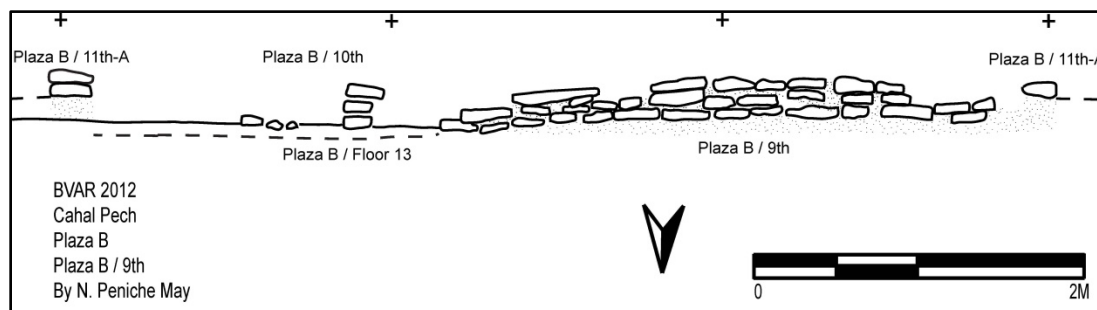


Figure 4.17. Profile of Structure Plaza B/9th.

So far, we do not know whether the retaining wall was finished with plaster or another material. Nor do we have evidence of postholes or interior flooring. Nevertheless, it is likely that the rectangular platform supported a superstructure made of perishable materials. The interior flooring was probably destroyed when the structure was dismantled by the ancient inhabitants of Cahal Pech to build the next construction phase. In contrast, we could determine that the rectangular platform Plaza B/9th was associated with a patio made of soft and chalky tamped marl. Plaza B/Floor 13th was partially delimited on the eastern edge by the north-south alignment made of small slabs. This floor was resurfaced on at least one occasion. The rectangular platform Plaza B/9th was predominantly associated with sherds belonging to the Jocote and Savana ceramic groups. Ceramic groups like Cocoyol, Uck, Unnamed Black, Unnamed Brown-black and Chunhinta had a minor presence.



Figure 4.18. Structure Plaza B/9th. This building was constructed using better shape and more regular stones than the previous building Plaza B/8th-A.

4.5.2 Construction Phase Plaza B/10th

With the construction phase Plaza B/10th, the rectangular platform Plaza B/9th was partially dismantled and covered by a larger and more complex rectangular platform, which included a narrow terrace and patio. This rectangular platform maintained the same orientation than the previous rectilinear building—8 degrees west of magnetic north. Structure Plaza B/10th was first reported by Cheetham (1996:14) who called it Structure U10-3 (Figure 4.19).

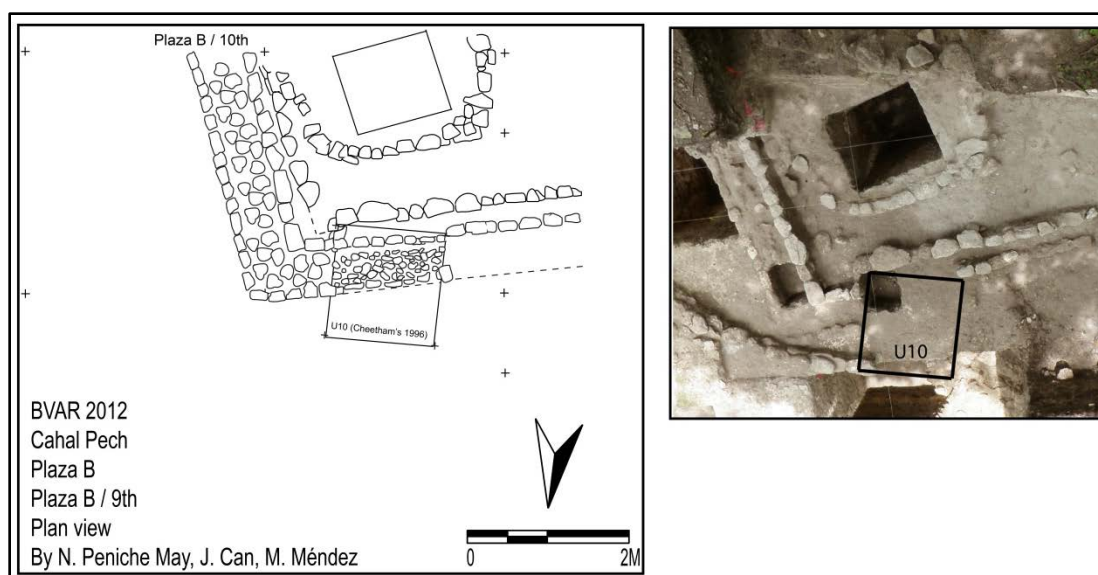


Figure 4.19. Plan view of construction phase Plaza B/10th. This plan shows the rectangular platform with a terrace and associated patio.

Like the previous construction phases, Plaza B/10th lies partially beneath the Classic period Structure B-5 and was also dismantled in pre-Columbian times. Only its northeastern section was exposed during the excavation process. For these reasons, the total dimensions of the structure were not established. Nevertheless, the excavation did provide interesting information about the formal characteristics of this phase of construction. Based on the exposed section, it was determined that the rectangular platform measured no less than 3.10 m (north-south) by 3.70 m (east-west).

The retaining wall was composed by at least five courses of stones, rising approximately 40 cm above the patio surface Plaza B/Floor12. Nevertheless, the platform was likely one-course higher in order to cover the previous rectangular platform Plaza B/9th. The stones that composed the retaining wall of Structure Plaza B/10th were well cut and regular in their dimensions. These stones measured 30 by 6 cm in average (Figure

4.20). The stones that made of the terrace were also well shaped but they were slightly smaller measuring on average 20 by 6 cm.

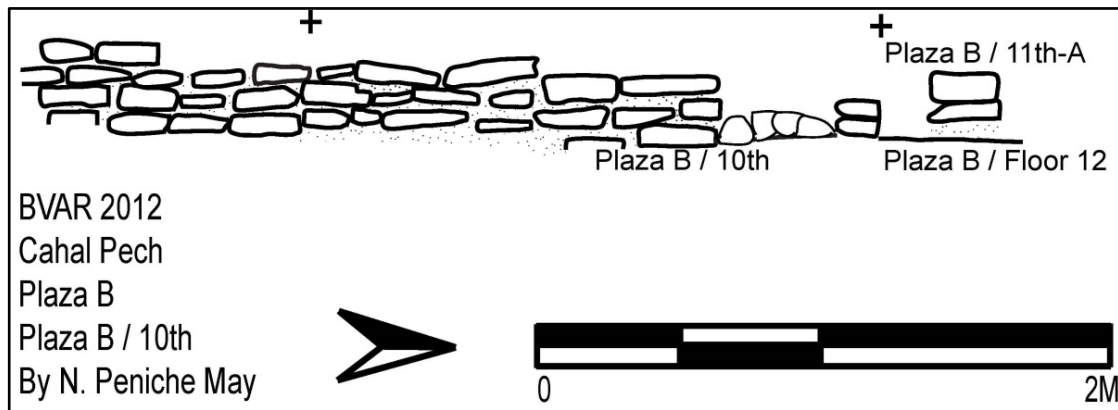


Figure 4.20. Profile of Structure Plaza B/10th.

Between the platform body and the terrace, there was a space of 50 cm that was filled with irregular, uncut stones. Cheetham (1996) suggested that the floor of this terrace was made of cobbles but the stones between walls were too irregular to function as a surface, suggesting that they were part of a core. In order to completely cover this core, the terrace should have been composed of at least three courses of stones, reaching 18-20 cm in height. Nevertheless, only two courses of stones were exposed during the excavations (approximately 12 cm tall).

Like the previous rectangular platform, we did not find evidence suggesting that the retaining walls had been finished with plaster or another material (Figure 4.21). Evidence of the interior flooring of the platform body or postholes were not found. Nevertheless, it is highly probable that the platform body was crowned with a superstructure made of perishable materials.



Figure 4.21. Rectangular platform Structure Plaza B/10th.

The patio surface was designated as Plaza B/Floor 12th. In order to build it, the previous Plaza B/Floor 13th was covered with a 10-cm layer of dark, sandy clay. The surface was finished with a chalky and hard tamped marl layer that had a plaster-like appearance. Thus, with the construction of Plaza B/10th as a large rectangular platform with a terrace and a patio, the formal characteristics of the architecture in this area of Plaza B changed radically.

Cheetham (1996) dated this phase to the early facet of the Kanluk phase but the ceramic evidence suggests a later date because some fragments of foreign ceramic groups like Chicago, Chunhinta, Joventud, Pital and Sayab were present among the ceramic assemblage. The ceramic groups that predominated in this context were Savana and Jocote, with a minor presence of Cocoyol, Uck, Unnamed Black, and Unnamed Brown-black.

4.5.3 Construction Phase Plaza B/11th

During the construction phase Plaza B/11th, the western section of the rectangular platform was partially dismantled and its remains were covered by the round platform Plaza B/11th-A—designated as Feature 12 during the excavation process (Figure 4.22). The construction of this circular building meant another shift in the architectural style of the area, as well as a complete spatial reorganization. It is worth mentioning that this building was initially discovered during the 1995 field season of the Belize Valley Preclassic Maya Project. Nevertheless, because only three cut stones placed in “straight, east-west orientation” were exposed, the formal characteristics of the building were not determined at that time (Cheetham 1996:14). During the recent excavations, Structure Plaza B/11th-A was not completely exposed either because it was partially laying beneath the Classic period Structure B-5. Nonetheless, we were able to estimate that this round platform was a large building measuring approximately 8.50 m in diameter.

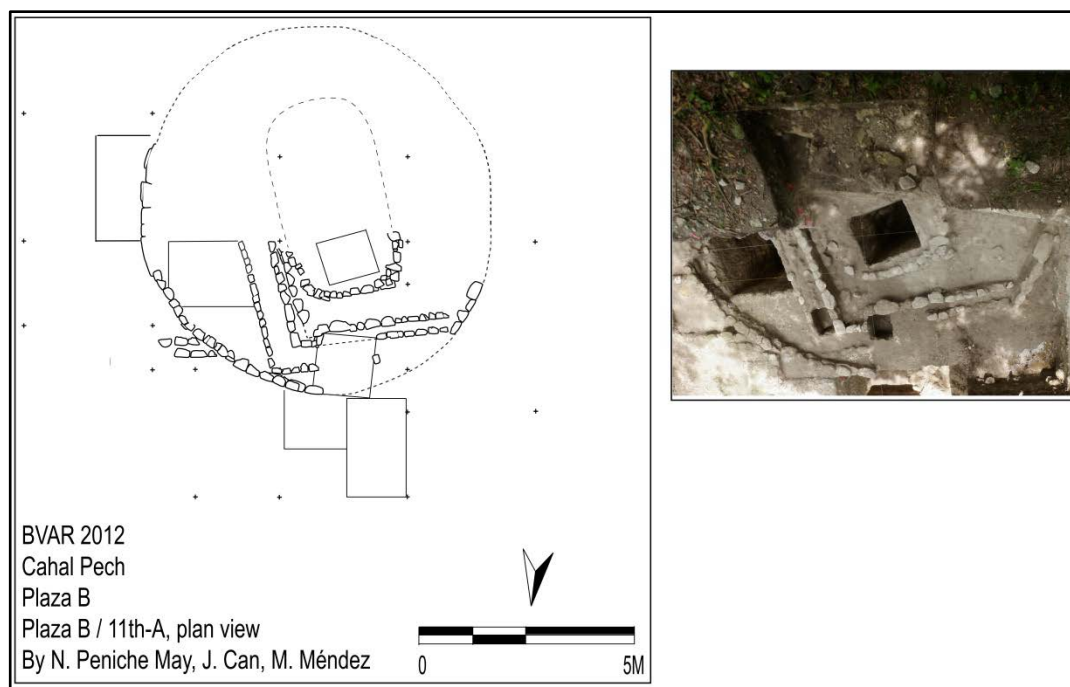


Figure 4.22. Plan view of Structure Plaza B/11th-A. The construction of Structure Plaza B/11th-A meant the introduction of a new architectural style and a change in the function of the area.

While in some sections the round platform Plaza B/11th-A was resting directly on Plaza B/Floor 12, in other areas, the basal stones were set on fill placed on top of the plaster-like floor. This surface was partially replastered to abut the round platform and function as its patio. Later, a new patio surface made of tamped earth (Plaza B/Floor 12b) was constructed, which covered Plaza B/Floor 12 and about 10 cm of the basal stone of the round platform (Figure 4.23).

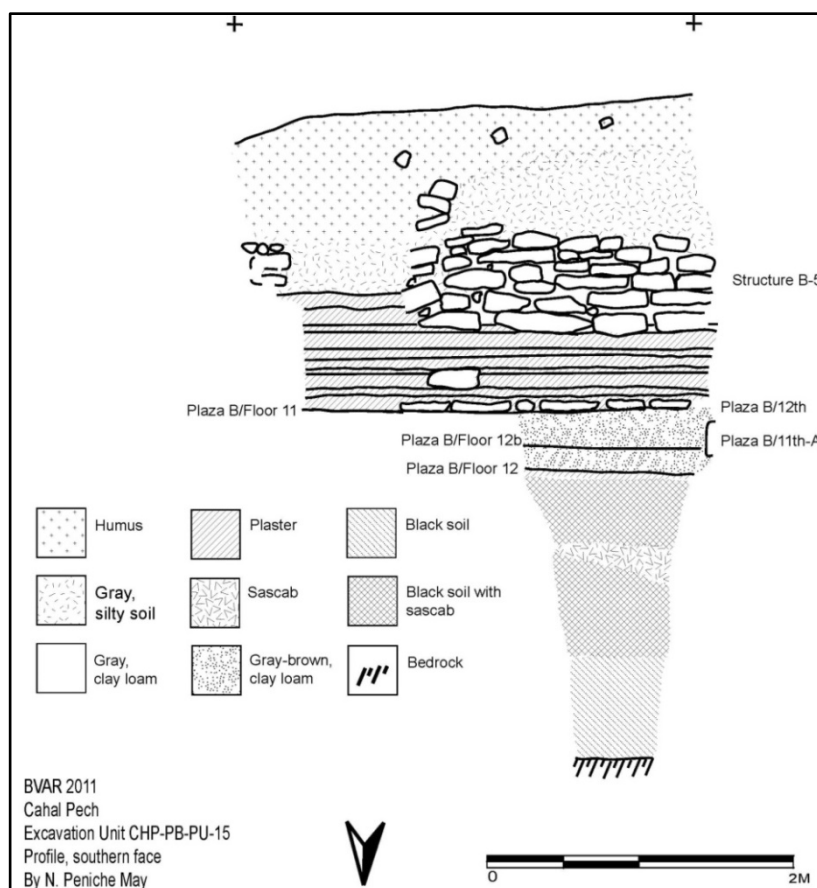


Figure 4.23. Profile of EU CHP-PB-PU-15. Structure Plaza B/11th-A was placed on top of Plaza B/Floor12. Plaza B/Floor 12b was a later addition.

From the Plaza B/Floor 12 patio surface, the round platform stood approximately 30 cm high, although it could have been taller if the upper courses were dismantled during the construction of the following phase. The retaining wall of the circular building was composed of at least three courses of well-cut blocks of limestone that ranged between 30 and 90 cm in length (Figure 4.24). Like other Cahal Pech round structures, the stones that composed the retaining walls were covered by a 10 cm thick layer of plaster. Nevertheless, no original floor surface capping was found, which suggests that the building was indeed dismantled in ancient times.



Figure 4.24. Detail of the round platform Structure Plaza B/11th-A.

Attached to the northeastern end of this platform, there was a 1-m long alignment that could be the remains of either a step, a small patio or a subsidiary platform. If the latter, then, Structure Plaza B/11th-A may be classified as a “keyhole-shaped” round structure (Aimers et al. 2000). This type of building consists of “a low, stone circular platform (less than 50 cm in height), with a low subsidiary platform, and capped with either a tamped or a plastered floor surface” (Powis 1996:173). Keyhole-shaped round buildings have been reported in a small number of Maya lowland sites, including Altun Ha (Pendergast 1982), Barton Ramie (Willey et al. 1965), Becan (Ball and Andrews 1978), Colha (Potter et al. 1984; Sullivan 1991), Cuello (Gerhardt 1988), Río Azul (Hendon 2000), and Uaxactun (Ricketson and Ricketson 1937).

At Cahal Pech, Structure 14 in the Tolok Group also conforms with the keyhole-shaped type (Awe 1992; Powis 1996). In contrast, Structure 2/2nd in the Zotz Group and Structure B-4/7th in Plaza B have been considered as representing another type of round

building, which exhibits a circular platform over 50 cm in height, with an inset or an outset stairway and a subsidiary platform (Awe 1992; Powis 1996:174). Similar structures have been unearthed at Altun Ha (Pendergast 1982), Becan (Ball and Andrews 1978), Chan Chen (Sidrys and Andersen 1978), Luisville (Haberland 1958), and Xamán Susulá (Peniche May 2012a). In addition, two more round platforms have been uncovered at Cahal Pech—the circular platform at the Eastern Ball Court alley of Plaza C (Santasilia 2013b) and Structure 15 in the Tolok Group (Powis 1996). Unfortunately, these structure were not completely exposed and, as consequence, the extent of their architectural features were not determined.

The Cahal Pech circular buildings have been dated to either the late Kanluk (600–300 B.C.) or the early Barton Creek phase (300 B.C.-A.D. 200) (Aimers et al. 2000; Awe 1992; Powis 1996; Villarreal 2013). The predominant presence of Jocote and Savana ceramic groups, along with minor amounts of Joventud, Chunhinta, Uck, Cocoyol and Unnamed Brown-black among the ceramic assemblage of Plaza B/11th-A indicates that this round structure was constructed at some point during the Kanluk phase.

As it was mentioned earlier, it is likely that the upper section of Structure Plaza B/11th-A had been dismantled in ancient times. Perhaps for this reason, we discovered neither postholes nor the remains of a masonry superstructure at its summit. The possibility exists that Plaza B/11th-A lacked a superstructure. The absence of a superstructure, would conform with the architectural tradition at Cahal Pech, where all five known round buildings were exposed platforms (Aimers et al. 2000; Santasilia 2013b; Powis 1996).

The absence of superstructures crowning the round buildings may have serious implications for their functions. The exposed surface may indicate a public function rather than a domestic role (Aimers et al. 2000:81; Pendergast 1982:18). Based on architectural attributes, ethohistorical information and mortuary evidence from the Zotz and Tolok round buildings, for instance, Aimers and colleagues (2000:81) argued that the circular structures “served as lineage or burial shrines” and as stages for the performance of ancestor veneration rituals. This last function was supported by the burnt remains of copal in the summit of the Zotz platform.

Interestingly, Plaza B/11th-A was the only building in the construction sequence that provided caches. A small Uck Red plate was cached beneath a stone located in the northern section of the building (Cheetham 1996:14). Another cache was found beneath a stone in the eastern section. This cache consisted of the half section of a Savana Orange plate (Figure 4.25). Both vessels were deposited in an inverted position. The presence of these caches allows hypothesizing that the keyhole-shaped round structure Plaza B/11th-A served a special public function.



Figure 4.25. Cache placed beneath the western section of Plaza B/11th-A. This cache consisted of a half-section of the Savana Orange plate deposited in an inverted position beneath.

Aimers and colleagues (2000) also claimed that the round structures were spatially separated from residences. In contrast, Hendon (2000:299-300) argued that the round structures, particularly the keyhole-shaped variety at sites like Barton Ramie, Colhá, Cuello, Uaxactun, and Rio Azul, were integral parts of domestic areas, although they were often marked as special by location and formal features (e.g., being placed in an elevated area). Based on their association with private spaces, Hendon (2000) concluded that round structures and the rituals performed on them played an important role in household identity, serving as a mechanism of differentiation among households. Some households displayed the existent social inequality by devoting resources to the construction of specialized ritual structures.

The keyhole-shaped round platform Plaza B/11th-A was indeed associated with a structure that may have fulfilled a domestic function, Plaza B/11th-B (Peniche May

2014b). This building was located in the western section of the excavated area, approximately 14 m apart from the round platform Plaza B/11th-A. The “empty space” that separated both buildings was in fact a patio, whose surface Plaza B/Floor 12b was made of tamped earth (Figure 4.26).

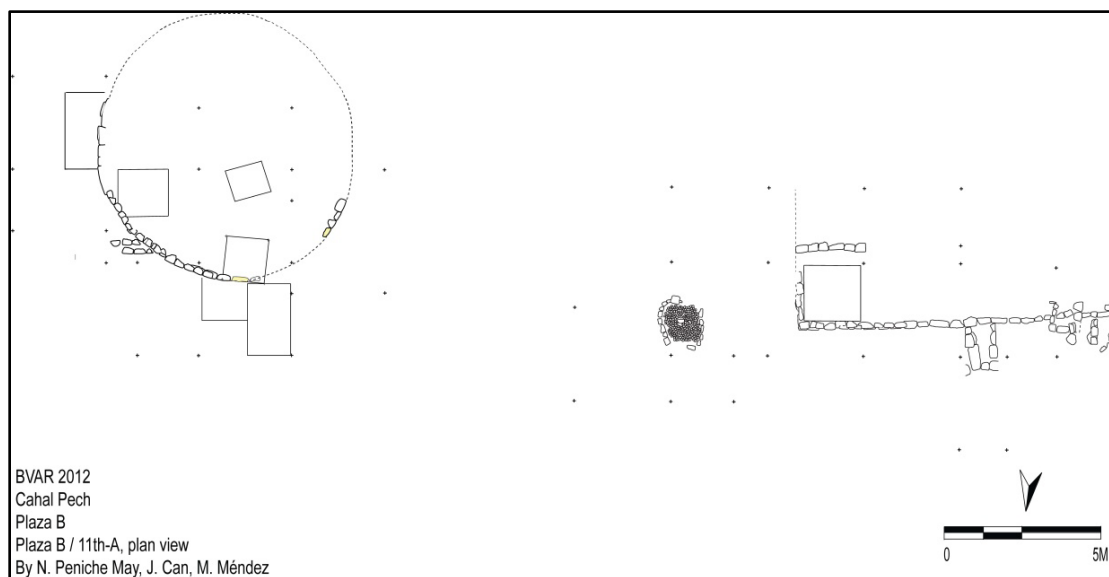


Figure 4.26. Plan view of construction phase Plaza B/11th. This construction phase includes the keyhole-shaped round platform Plaza B/11th-A, the rectangular building Plaza B/11th-B and the oval feature Plaza B/11th-C.

Plaza B/11th-B and its associated patio lay partially beneath the Classic-period Structure B-5. Nevertheless, our excavations exposed the northern section of this building, allowing us to define some of its architectural attributes. Plaza B/11-B consisted of a rectangular platform that measured 9.45 m in its east-west axis and, at least, 2.50 m in its north-south axis. Unlike the buildings constructed during the early Kanluk phase, Plaza B/11th-B was oriented 15 degrees west of magnetic north (Figures 4.27).

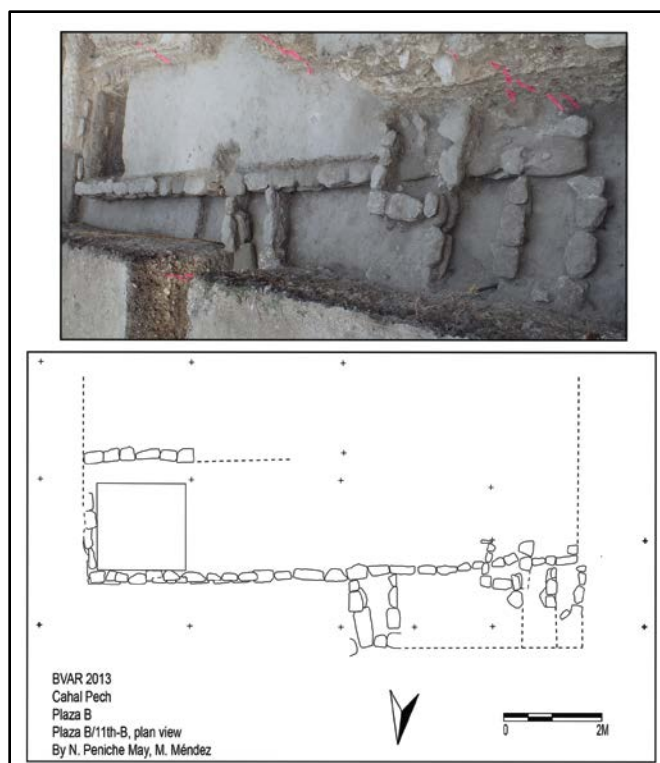


Figure 4.27. Plan view of Structure Plaza B/11th-B.

In order to build the rectangular platform and its associated patio, a large amount of fill was deposited, which raised the original ground about 50-60 cm. The fill at the interior of the rectangular platform consisted of a layer of black, clay loam (paleosol) with *sascab*. Paleosol was followed by dark-brown, clay loam, and another layer of gray, clay loam. Large soft-limestone boulders also were used. The fill deposited to construct the patio Plaza B/Floor 12b consisted of brown-gray, clay loam mixed with a large amount of sherds, lithic tools and debitage, shell beads, faunal remains and figurine fragments. Pottery associated with the fill beneath Plaza B/11th-B and its patio floor was predominantly Jocote and Savana sherds. A minor presence of Unnamed Black,

Unnamed Brown-black, Cunil pottery (e.g., Cocoyol, Uck, and Sikiya) and foreign vessels (e.g., Chunhinta, Joventud, Sayab) also was observed in these contexts.

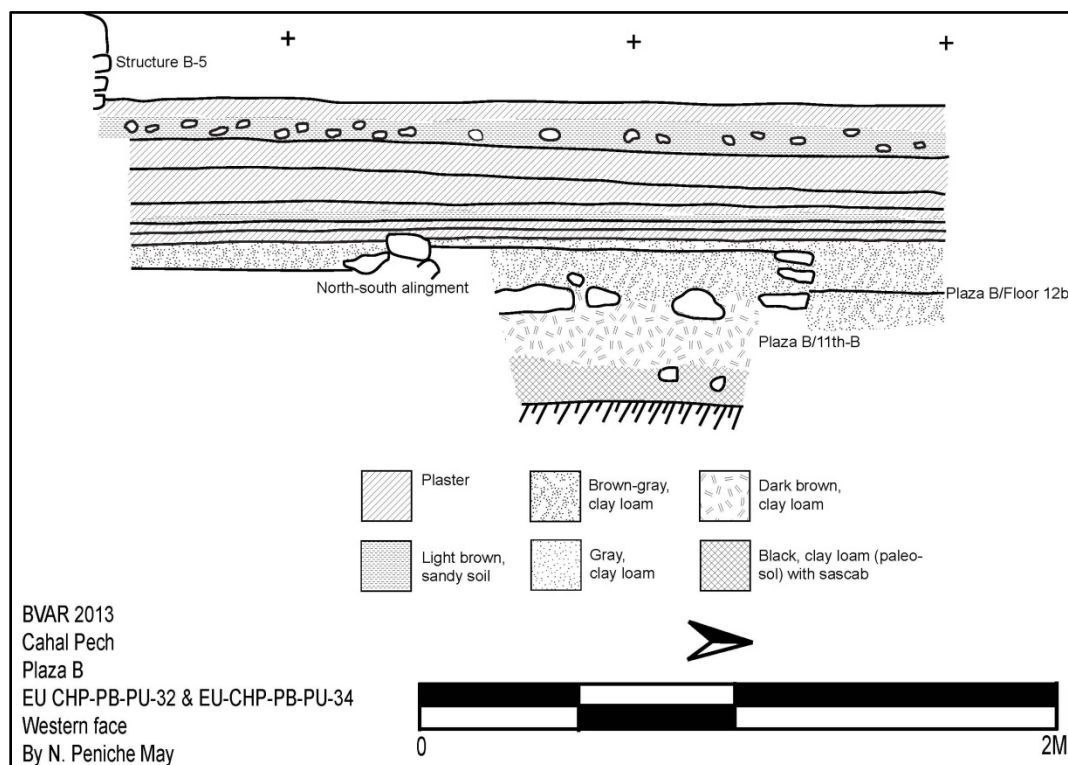


Figure 4.28. Profile of Structure Plaza B/11th-B and the test pit placed in its interior.

The retaining walls of Plaza B/11th-B rested on the new raised surface (Figure 4.28). The rectangular platform stood 50 cm high above the raised surface, although the basal stone was covered by the tamped-earthen patio surface Plaza B/Floor 12b. Consequently, the rectangular platform only measured 40 cm in height. In order to build the retaining walls of this rectangular substructure, four courses of roughly cut limestone blocks, measuring 20-80 cm in length, were mortared together with a mixture of *sascab* and clay loam (Figures 4.29 and 4.30). There is no evidence to suggest that the retaining

walls were coated with plaster or another material. We can state, however, that the interior flooring of Plaza B/11th-B was made of tamped clay-loam (Plaza B/ Floor 12c).



Figure 4.29. Detail of the retaining wall of Structure Plaza B/11th-B.

An alignment running east-west was located 2 m south of the north retaining wall. This alignment consisted of one course of cut stones that only rose 10 cm above the building floor. It was interpreted as the foundation of a superstructure. Unfortunately, only a section of this feature was exposed and, therefore, the formal characteristics of this possible superstructure were not established.

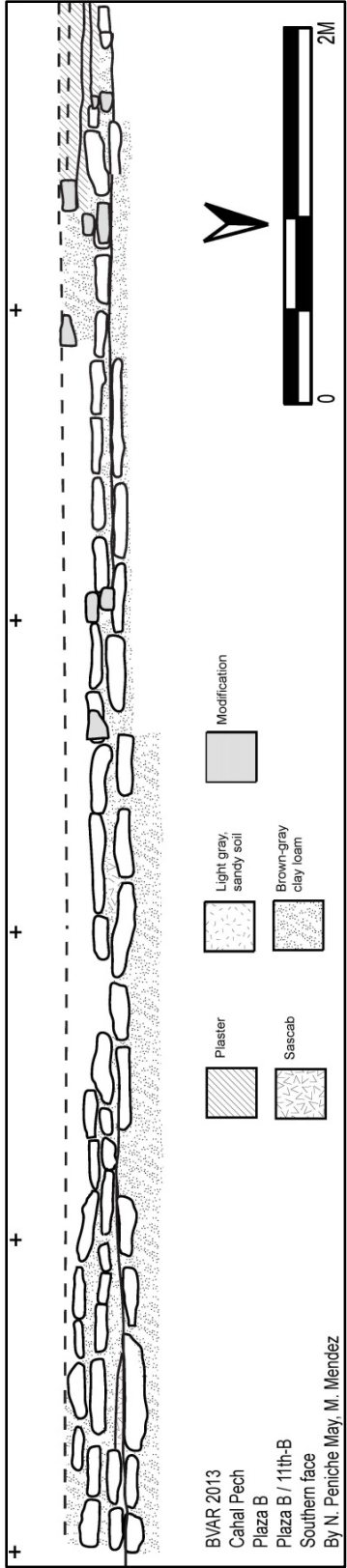


Figure 4.30. East-west profile of Structure Plaza B/11th-B.

The rectangular platform Plaza B/11th-B underwent several modifications during the late Kanluk phase (Figure 4.27). At some point, a rectangular feature was constructed off the northwestern corner. The northern section of this rectangular addition was not completely exposed and, therefore, its total dimensions were not determined. Yet, we established that this feature measured 3.30 m (east-west) by, at least, 1.50 m (north-south) and it stood 40 cm high above the patio surface Plaza B/Floor 12b. The eastern limit of the rectangular modification consisted of a two parallel rows, one to two courses high, which composed a 75-cm-thick wall. The western alignment also was two courses high but it was a simple, rather than double, alignment. This western limit was extended twice—60 cm and 45 cm, respectively. The rectangular feature and its extensions were all resting on the patio surface Plaza B/Floor 12b. The function of this addition is unknown. It could have been either a terrace or an ancillary structure.

The second modification consisted of a smaller rectangular feature that was placed on top of the platform retaining wall and its terrace/ancillary structure, 90 cm east of Plaza B/11th-B northwestern corner. As the previous constructions, the small rectilinear addition was partially exposed because it lay partially beneath Structure B-5. Although we established that it measured 1.00 m at its east-west axis, its north-south dimension remained unknown. During the third modification, a plaster floor was constructed west of the rectangular platform in order to cover the patio surface. This stucco floor was replastered at least once during the late facet of the Kanluk phase.

The rectangular platform Plaza B/11th-B was associated with a small oval construction, Plaza B/11th-C, which was located approximately 3 m east of the northeastern corner of Plaza B/11th-B (Figure 5.26). Plaza B/11th-C measured 1.65 m in

its north-south axis by 1.35 m in its east-west axis. Plaza B/11th-C was only one course high and it was built using roughly cut limestone blocks of diverse dimensions (ranging from 10 cm to 25 cm in length). These stones were partially covered by the patio of Plaza B/11th-B, suggesting that both constructions were contemporaneous. The foundation stones were facing inwards towards a cobbled surface, which was only present at the interior of Plaza B/11th-C. The cobbles used to make this surface were small and regular in their dimensions, less than 10 cm in length (Figure 4.31).

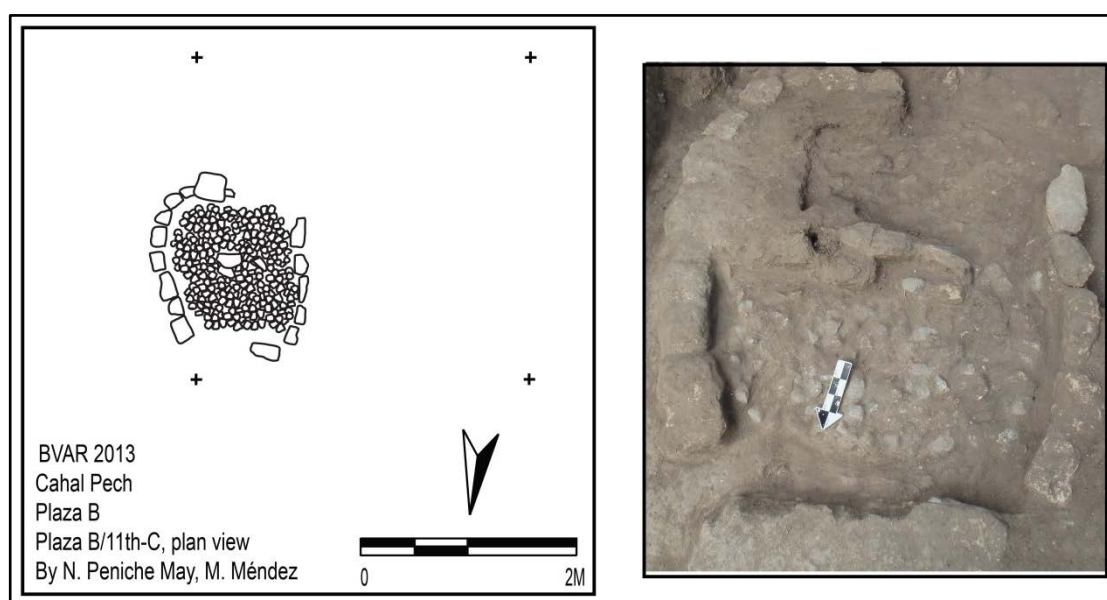


Figure 4.31. Plan view of Plaza B/11th-C. The stones at the center of the feature were once part of the feature.

On top of the cobbled surface we recovered some yellow clay, which could have functioned as a tamped-earthen floor, but this is difficult to confirm because it was highly disturbed. At some moment during the Kanluk phase, the southern section of the foundation was dismantled and the stones were placed in the middle of the feature, on top

of the cobbled surface. Two *manos* made of limestone were placed on Plaza B/Floor 12b, just outside of Plaza B/11th-C. I believe that these grinding tools were deposited just before the oval feature was covered (Figure 4.32). The destruction of the clay floor, the wall dismantling and the offering suggest that this oval feature was the subject of a termination ritual. The fact that the cobbled surface was exposed to fire could reinforce the hypothesis of a termination ritual. Nonetheless, the fire could have occurred during other activities performed at this place.



Figure 4.32. Structure Plaza B/11th-C. Two *manos* were found outside of the feature. At the interior of the feature, remains of yellow clay were registered. Three stones that were once part of the feature were uncovered at its center.

We conducted a small test pit inside Plaza B/11th-C, which provided quite interesting information because it was different from the fill exposed outside Plaza B/11th-B. Beneath the cobbled surface, we exposed another cobbled floor made of limestone cobble-like stones. We also found two tamped marl surfaces that were 18 and

28 cm below the second cobbled surface (Figure 4.33). We could not continue the excavation of this feature because of space and time constraints. During the excavation of this test pit we uncovered pottery belonging to the Savana and Jocote ceramic groups, with a minor presence of Uck sherds, suggesting that this feature was built during the Kanluk phase.

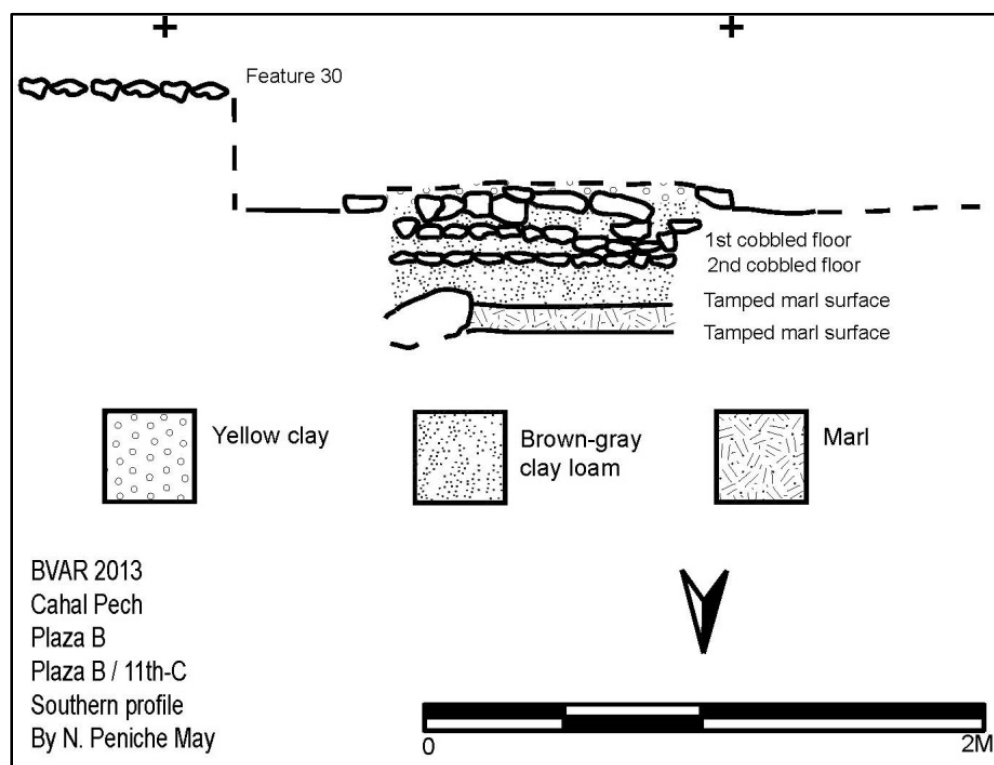


Figure 4.33. Profile of Plaza B/11th-C. The fill of this feature was different from the fill beneath Plaza B/Floor 12b.

4.5.4 Construction Phase Plaza B/12th

Construction phase Plaza B/12th represented the last Kanluk-phase building activity, in which a substructural platform made of cobbles was constructed, completely covering the key-hole shaped structure of the previous phase (Figure 4.34).

Cobbled/flagstone platforms have been identified as Middle Preclassic architecture. For instance, Garber et al. (2008) and Cheetham (1996) reported evidence of several cobbled platforms beneath Plaza B, which dated to this period.

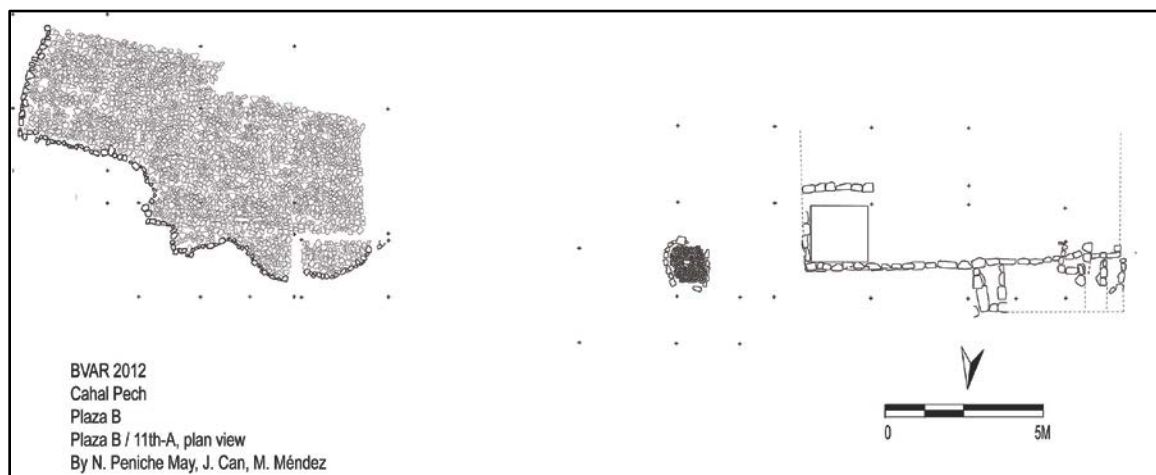


Figure 4.34. Plan view of construction phase Plaza B/12th. During this phase a cobbled platform was constructed, covering the key-hole shaped round platform.

Like the previous phases, the total dimensions of the cobbled/flagstone platform Plaza B/12th were not established because only the northeastern section was exposed. The rest of the platform lies beneath either the Classic-period Structure B-5 or the unexcavated area of Plaza B. The uncovered area of the cobbled platform measured 8.30 m (north-south) by 11.80 m (east-west) indicating that this construction was quite large, occupying at least 98 m². Interestingly, the cobbled platform was irregular in shape. The cobbles that made up this substructural platform were regular in their dimensions and were placed very close together, in a manner resembling a tiled surface (Figure 4.35). Our excavations did not establish whether this platform held a superstructure because we did not find evidence of postholes or a masonry building. If this cobbled/flagstone

platform supported one or more superstructures, these may be covered by the Classic-period Structure B-5.



Figure 4.35. Structure Plaza B/12th. The cobbles that made of Plaza B/12th were regular in their dimensions and were closely spaced.

The cobbled platform Plaza B/12th was associated with a plaster surface that functioned as its patio. This stucco floor (Plaza B/Floor 11) extended out north and east of the cobbled feature and, in some areas, partially covered it. Fill below the cobbled platform and its patio surface were different. Beneath the cobbles, we found gray, clay-like material mixed with medium-sized stones. Below Plaza B/Floor 11, we discovered brown-gray matrix, consisting of clay loam mixed with organic materials. This matrix was interpreted as a midden-like deposit because we found a large amount of materials, such as ceramic, shell beads, faunal remains and figurine fragments.

In front of the cobbled platform and resting on Plaza B/Floor 11, we exposed a large limestone slab. The stone was broken into three parts, measuring in total 1.10 m in length by 70 cm in wide and 16 cm in thickness. The stone was likely larger because we

did not find all its pieces. The original location of this slab uncovered beneath Plaza B is unknown, but it was closely associated with the cobbled platform. Although we could not determine what design was present on its surface, the stone was carved (Figure 4.36).



Figure 4.36. Limestone slab unearthed in front of the cobbled platform Plaza B/12th, directly on top of Plaza B/Floor 11.

I believe that this slab represented a monument/altar associated with Plaza B/12th. The linkage of architecture to freestanding monuments during the late Middle Preclassic also has been reported at Nakbé (Hansen 1998). It is likely that the Plaza B monument/altar were defaced and broken before the cobbled platform Plaza B/12th was covered by the Late Preclassic constructions, perhaps as part of a termination ritual. A similar event was reported at Cival, where a large stela was defaced and buried across the center line of the E-Group eastern platform during the late Middle Preclassic, before the construction of a new plaza floor (Estrada-Belli 2011:80).

During the construction of the cobbled platform Plaza B/12th, the rectangular platform Plaza B/11th-B and oval feature Plaza B/11th-C could have remained exposed for some time. Nevertheless, at some moment during this construction phase, the oval feature Plaza B/11th-C was completely covered by a cobbled surface (named Feature 30 during the excavation process) that extended into EU CHP-PB-PU-35, CHP-PB-PU-26, and CHP-PB-PU-28.

This cobbled surface was irregular. Most notably, it was sunken at its northern edge. In addition, the cobbles that were used to make of this feature were irregular in shape with sharp edges. They were placed leaving some distance between them, instead of being placed tightly together as the cobbled platform Plaza B/12th. These characteristics could indicate that the cobbled surface did not function as an actual floor. Rather it could have served as the ballast of a plaster floor, which was constructed to extend westwards Plaza B/Floor 11. Nevertheless, this cobbled surface was only observed in a specific area, where Plaza B/11th-C used to be. Consequently, I suggest that the cobbled surface could have been constructed to cover the oval feature Plaza B/11th-C as part of a reverential termination ritual. None of these hypotheses were corroborated during the excavation because the cobbled surface lay beneath the staircase of the penultimate construction phase of Structure B-5 and, consequently, it was not fully explored.

Plaza B/Floor 12 was expanded westwards until it completely covered the rectangular platform Plaza B/ 11th-B. The expansion of this plaster surface likely occurred during the Kanluk phase, as determined by the fact we mainly recovered mainly Savana and Jocote sherds beneath this floor, with a minor presence of Unnamed Black

and Unnamed Brown-black groups, Cunil sherds (e.g., Cocoyol, Uck, and Sikiya ceramic groups), and Mamom vessel fragments (e.g., Chunhinta, Joventud and Sayab groups).

Although this construction event took place during the transition between the Kanluk and Barton Creek phases, this area would continued being modified. For instance, the western section of the area excavated in 2011-2013 underwent a new episode of construction in which another cobbled platform (Plaza B/13th) was built and the patio surface was partially replastered to slope slightly eastwards (Figure 4.37). This construction activity was centered on the area explored by EU CHP-PB-PU-31, CHP-PB-PU-32, CHP-PB-PU-33, CHP-PB-PU-34, CHP-PB-PU-37, and CHP-PB-PU-40 and it was associated with ceramic groups related to the Cunil (e.g., Cocoyol) Kanluk (e.g., Jocote, Savana, Joventud, Chunhinta, Pital, Unnamed Black and Unnamed Brown-black) and Barton Creek phases (e.g., Sierra, Sapote, Polvero Flor Cream, Hill Bank, and Paila).

As yet, it has not been established in what manner Plaza B/12th and Plaza B/12th–B were related, meaning whether they constituted a single platform or were two independent constructions. During the excavations, only the northwestern corner of Plaza B/12th–B was exposed. Like Plaza B/12th, the rest of the construction was underneath the staircase of Structure B-5. If these cobbled platforms formed a single building, then this must have been a massive platform, measuring approximately 25 m in the east-west axis.

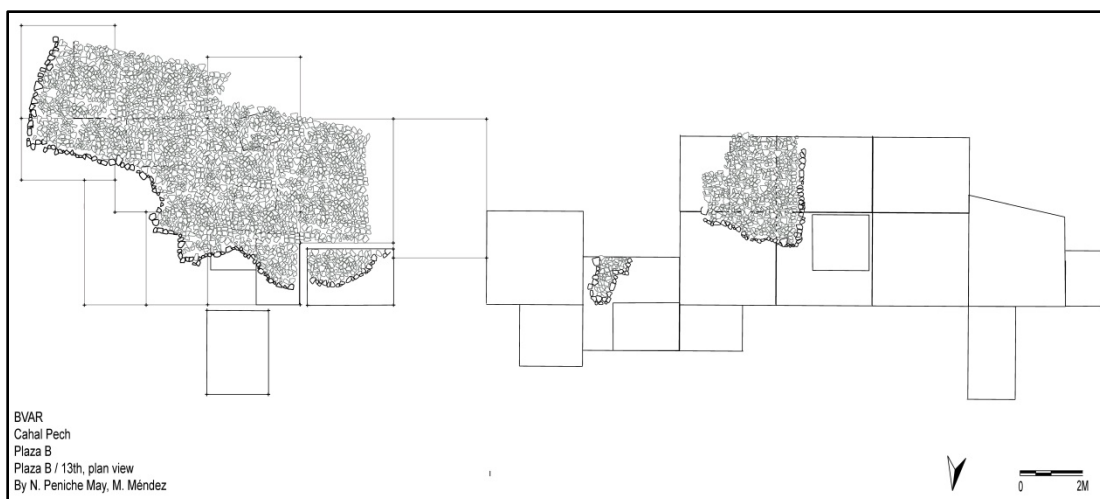


Figure 4.37. Plan view of cobbled platforms Plaza B/12th and Plaza B/12th-B. Plaza B/12th (east) was built during the late facet of the Kanluk phase, while Plaza B/12th-2 (west) was constructed during the Kanluk-Barton Creek transition.

4.6 BARTON CREEK AND TIGER RUN CONSTRUCTION PHASES

During the Barton Creek and Tiger Run phases, the area explored during 2011-2013 field seasons underwent intense construction activity⁹ (Peniche May 2013, 2014b, 2015b).

During the following construction phase, the cobbled platforms and their associated patios were completely covered by five successive plaza floors. Two different buildings were constructed on top of the last of these plaster surfaces. One building was located in the western area and was represented by a wall made of well-cut limestone blocks. The second construction consisted of an alignment made of roughly cut stones situated in the eastern section of the excavated area. At the end of the Late Preclassic,

⁹ During the 2014 field season, twelve construction phases dating to the Late Preclassic and Classic periods were identified south of the 2011-2013 excavated area. Because these phases were exposed through test pits placed on Structure B-5, we could not establish how they were related to the 2011-2013 construction phases or the architecture and plaster floors reported by Awe (1992). Nevertheless, I believe that different buildings were constructed in the area beneath Structure B-5 and north of this building, which should have different construction sequences (Peniche May 2015b).

these constructions were partially covered by another plaza floor, which was replastered once.

At some moment during the Tiger Run phase, the last Barton Creek plaster floor served as the base of a new construction. A building with unknown dimensions was constructed, along with a plaster floor that connected its basal courses with the plaza floor. This building was partially dismantled during the following phase, but based on its remains, I established that its walls were at least seven courses high (approximately 80 cm). During the following phase, another plaza floor was constructed, which functioned as the base of the actual Structure B-5.

This Classic-period building measured 40 meters (east-west) by 17 m (north-west) and stood at least 5 m high from Plaza B level. The superstructure seemed to be a single-roomed building with benches and multiple entrances facing south and north. These entrances were accessed through staircases that faced Plaza B and Plaza G (Peniche May and Beardall 2015). Buildings with similar architectural features have been recognized as *popol nah* or council houses, which served as places where elites met to discuss and make decisions regarding the issues of the polity (Bey and May Ciau 2014). Finally, the building may have undergone some modifications during the Terminal Classic but the nature of these activities are not well understood yet because our excavations focused on Middle Preclassic architecture, and because of the poor preservation of this terminal architecture.

4.7 SUMMARY

The block excavations conducted on SW Plaza B exposed a complex architectural sequence that spans from the Cunil to the Spanish Lookout phases (1100/1000 B.C.-A.D. 1000). Although the Barton Creek and Tiger Run buildings were impressive because of their dimensions, it was during the Cunil and Kanluk phases that the area underwent an intensive construction activity.

As it can be noted from the information presented above, thirteen construction phases dating to the Middle Preclassic period have been identified on the southwestern edge of Plaza B. This architectural sequence shows an increasing investment of labor during the course of the Cunil and Kanluk phases in the form of recognizably changing architectural forms. Formal architectural attributes, such as size, shape, height and materials of construction, all appear to have been elements subject to manipulation by the Cahal Pech social actors. The function of the uncovered architecture still needs to be established, as well as its prominence and centrality, in order to produce insights about the nature of social spaces and how they changed during the course of the Cunil and Kanluk phases. Yet the architecture beneath Plaza B provides promising data to explore power dynamics at Cahal Pech and how they changed through time.

In the next chapter, I describe the ceramic materials using the type-variety methodological approach. I used groups and type-variety to establish the relative chronology of each construction phase. I took into consideration vessels forms to provide insight into the activities conducted in the architectural spaces under assessment.

CHAPTER 5.
THE POTTERY BENEATH PLAZA B: RELATIVE DATING OF THE
BUILDINGS AND ECONOMIC ACTIVITIES

5.1 INTRODUCTION

One of the most important aspects of archaeological research is the ability to determine the sequential order of the material culture. Although absolute dating techniques are usually the best option, they cannot always be applied if there are no adequate samples in sealed contexts. Alternatively, archaeologists have developed relative dating techniques to make preliminary interpretations of the chronological placement of archaeological data (Amador Berdugo 2005:91). Thus, archaeologists have relied on the principles of cultural stratigraphy and the sequence of associated ceramic complexes created through the type-variety methodological approach (Smith et al. 1960). This typological approach has been widely used in the Maya lowlands and it has been modified for the Belize Valley (Awe 1992; Brown 2007; Gifford 1976; Sullivan and Awe 2013; Sullivan et al. 2009).

Along with the type-variety typology, the mode method has been employed to assess the formal attributes of the archaeological pottery, which can be time sensitive (Culbert and Rands 2007; LeCount 1996; Shelton 2008). At the same time, the assessment of forms present in a specific context can help us gain insight into the nature of activities conducted in different social spaces (e.g., Robertson 1983). For instance, the presence of censers and other special forms is usually thought to signify the performance of ritual activities. Unslipped jars, bowls, dishes, colanders, and *comales* (griddles)

indicate preparation and storage of food. Slipped bowls, plates, dishes, vases, *tecomates* (closed or restricted-mouthed bowls) and spouted vessels give insight into food-serving practices (Brown 2007; LeCount 1996; Robertson 1983).

The amount and variety of forms of vessels is central to assessing the nature of social spaces. For instance, the predominance of food-preparation and storage pottery in a context may be used to identify a domestic space. Alternatively, the joint presence of large food-preparation vessels and an unusual quantity of serving vessels of high-quality and large dimensions is an archaeological signature of feasting practices and, consequently, of a special location where power-over competition and legitimization could have taken place (Hayden 2001:40-41; LeCount 1996).

Finally, some local high-quality pottery and foreign vessels were displayed as valuable items and were exclusively used by leaders or elites (e.g., vessels with incised pan-Mesoamerican motifs; Hirth 1992; LeCount 1996:2). Accordingly, the distribution of the high-value pottery can be used as an important index of how leaders wielded power and the political strategies that they employed.

My objective in this chapter is threefold as it aims to (1) determine when each construction phase was built; (2) identify what activities were carried out in the explored area, and (3) assess, as far as possible, the nature of social spaces across time through ceramic analysis. In order to accomplish these goals, I first describe the ceramic groups, types and varieties identified in the Plaza B assemblage. Later, I present the frequency of type-variety modes and forms of vessels uncovered during the excavation of each construction phase in order to establish the relative dating of each building, the temporal

distribution of local prestige vessels and foreign pottery, and the vessel forms associated with each construction phase.

5.2 METHODOLOGY

The ceramic materials recovered beneath Plaza B were classified following the principles of the type-variety and mode methodological approaches. In the type-variety method, the primary diagnostic units utilized in the identification are the types, varieties and modes. A set of types-varieties compose a ceramic group. In turn, a cluster of ceramic groups form the basis for the identification of ceramic complexes (Amador Berdugo 2005; Gifford 1976; Shelton 2008).

In order to identify the ceramic groups, types, varieties, and modes present in each excavated context beneath Plaza B, sherds were sorted based on variety of attributes such as paste, surface treatment (e.g., presence/absence of slip, slip color, slip characteristic), decorative technique (e.g., chamfering, fluting, grooving, incising, punctuating, appliqué, modeling), decorative motif, and formal attributes (e.g., vessel shape, neck curvature, rim, lip, base, and appendage; LeCount 1996:335-336; Shelton 2008:55; Smith et al. 1960). Decorative methods were identified based on Smith's (1972) definitions. Vessel form was established using Sabloff's (1975) formula for conventional vessel types. Based on these formal and stylistic attributes, sherds were categorized into groups, types, varieties, and modes established by Gifford (1976) and Sullivan and colleagues (2009; see also Sullivan and Awe 2013). Eroded body sherds were categorized by group, type, and variety when enough attributes were present. On occasions, it was difficult to separate Cunil sherds from Kanluk sherds (e.g., Sikiya from Jocote Orange-brown, Uck

Red from Savana Orange). Many of these sherds were simply categorized as transitional because I believe these ceramic fragments represent the transition between ceramic types. After the groups, types and varieties were determined, they were grouped by ceramic complex (Shelton 2008:41). All the data collected were recorded in an Excel spreadsheet. This classification allowed the identification of Cunil and early and late Kanluk cultural deposits, which is fundamental in closely examining the changes in political strategies used by nascent elites. In addition, the classification provides the opportunity to distinguish the relative frequency of high-value vessels locally produced—Mars Orange paste-ware pottery—and the foreign vessels, such as the Rio Nuevo Glossy ware pottery that were imported from Northern Belize (see Ball and Taschek 2003).

A total of 53,978 ceramic sherds were recovered during the 2011-2013 excavations but only the Middle Preclassic assemblage was taken into consideration in the present study. Accordingly, 31,710 (58.75%) of the total ceramic sherds recovered were analyzed using the type-variety-mode methodological approach. The analyses revealed the presence of 21 ceramic groups and 39 ceramic types, representing the Cunil and Kanluk ceramic complexes. Barton Creek complex pottery also was observed in some of the analyzed contexts.

5.3 CUNIL CERAMIC COMPLEX (1100/1000 - 900 B.C.)

The first descriptions of the Cunil pottery were based on sherds that were stratigraphically isolated in the earliest construction levels of Structure B-4 and from mixed deposits at Tolok and Tzinik groups (Awe 1992). Subsequent excavations conducted in the 1990s and 2000s at Structure B-4 and across Plaza B increased the

ceramic sample of this early pottery, allowing a better definition of the Cunil ceramic complex (Cheetham and Awe 1996, 2002; Clark and Cheetham 2002; Sullivan and Awe 2013; Sullivan et al. 2009). Additionally, these excavations provided a set of radiocarbon dates that placed the Cunil phase between ca. 1200 and 900 B.C. (Healy and Awe 1995:199, Table 1; Sullivan et al. 2009).

Table 5.1. Wares, groups and type-variety modes of Cunil complex (Sullivan and Awe 2013:115, Table 7.1)

Ware	Group	Type-variety
Belize Valley Dull Ware	Uck	Uck Red: Uck Variety
		Uck Red: Variety Unspecified (Orange)
		Uck Red: Variety Unspecified
		Baki Red-Incised: Baki Variety
		Zotz Zoned Incised: Zotz Variety
		Mo Mottled: Mo Variety
		Mo Mottled: Mo Variety Unspecified (Red)
		Kitam Incised: Kitam Variety
		Unnamed Brown Slipped: Variety Unspecified
	Cocoyol	Cocoyol Cream: Cocoyol Variety
		Cocoyol Cream: Variety Unspecified (Resist)
		Cocoyol Cream: Variety Unspecified (Unslipped)
		Unnamed Ash: Variety Unspecified
		Unnamed Red-on-buff: Variety Unspecified (A)
	Chi	Unnamed Red-on-buff: Variety Unspecified (B)
		Chi Black: Black Variety
Belize Valley Coarse Ware	Sikiya	Unnamed Black Punctuated-Incised: Variety Unspecified
		Sikiya
		Ardagh Orange-brown: Ardagh Variety

The Cunil ceramic complex has been described as composed of two wares. The Belize Valley Dull ware is associated with serving vessels that display dull slips. The paste of this pottery is finely textured, contains volcanic ash, calcite, quartzite, and mica or hematite inclusions. It ranges in color from creamy buff to a light whitish-gray, and often has a dark core (Cheetham and Awe 2002:10; Sullivan et al. 2009:162). The Belize Valley Coarse Ware is associated with utilitarian form vessels. It is distinguished by a

medium to coarse paste that includes calcite, quartz, quartzite, and small grains of mica (Sullivan et al. 2009:163). These wares include the Uck, Cocoyol, Chi and Sikiya ceramic groups and 19 types, which are shown in Table 5.1 (Sullivan et al. 2009; Sullivan and Awe 2013). While the four ceramic groups are all represented in the 2011-2013 Plaza B assemblage, I did not observe all the types mentioned here. In addition, I identified some sherds of the Rio Pasion Slipped ware of the Xe ceramic complex (Table 5.2).

Table 5.2. Wares, groups, types, and varieties of the Cunil complex beneath Plaza B.

Ware	Group	Type-variety	Frequency
Belize Valley Dull	Uck	Uck Red: Uck	389
		Uck Red: Variety Unspecified (Orange)	3
		Baki Red-Incised: Baki	4
		Kitam Incised: Kitam	6
	Cocoyol	Cocoyol Cream: Cocoyol	463
		Unnamed Red-on-buff: Variety Unspecified	5
	Chi	Chi Black: Chi	8
		No identified	55
Belize Valley Coarse	Sikiya	Sikiya: Sikiya	141
Rio Pasion Slipped	Huetche	Huetche White: Huetche	9
		No Identified	24
Total			1,107

5.3.1 Uck Ceramic Group (N=402)

Uck Red: Uck Variety (N=389)

I identified a total of 389 ceramic sherds of Uck Red: Uck variety (Figure 5.1a-c). This type-variety mode is described as having a “uniform dull red slip on a soft ash-tempered paste” (Sullivan et al. 2009:163). It is considered as similar to the Katun Red group from Holmul and the pre-Mamom Joventud Red from Tikal (Neivens de Estrada 2014:184). Uck Red: Uck variety is usually associated with flat-base plates with

unslipped exteriors and bowls that are slipped on the interior and exterior (Sullivan et al. 2009). The Plaza B collection conforms to this pattern, but it also adds new information.



Figure 5.1. Uck Ceramic Group. (A-C) Uck Red: Uck variety; (D) Baki Red-Incised: Baki variety; (E) Kitam Incised: Kitam variety

Based on the assemblage, I determined that the flat-bottom plates have flared walls, folded out rims and rounded lips, although inwardly-beveled and pointed lips and direct and exterior thickened rims also are present. Regarding their decoration, plates are usually slipped on their interior. Some examples exhibit slip on the exterior. At least one plate displays an annular support. The flat-bottom bowls are characterized by having vertical sides, rounded lips and direct rims. Incurving walls and pointed lips also are observed, as well as exterior-thickened, everted and folded out rims. Most of the bowls are slipped on the exterior and interior, but some examples only exhibit exterior slip. A bowl with slightly incurved walls, a round lip and a slightly folded out rim displays a

fillet decoration two centimeters beneath the rim and red slip below the fillet. In addition, I identified a small set of jars that displays outwardly-curving necks, rounded lips, direct rims, and exterior slip.

Uck Red: Variety Unspecified (N=3)

Uck Red: Variety Unspecified (Orange) is represented by two bowl fragments and a body fragment in the Plaza B assemblage. Although the form of the bowls is similar to the type Uck Red: Uck variety, this type is characterized by an orange slip (Sullivan et al. 2009:163).

Baki Red-Incised: Baki Variety (N=4)

I observed four examples of the incised version of Uck Red: Uck variety. Baki Red-Incised: Baki variety also has a dull red slip on a soft ash-tempered paste but, in addition, presents post-slip grooved-incised lines. This type is typically represented by dishes with outwardly-curving walls and wide everted rims (Awe 1992:229, Figure 57b; Sullivan et al. 2009:163). In the only rim that I identified belonging to this type, the post-slip incision is located in the interior upper rim, which is indeed wide everted (Figure 5.1d). This type is similar to both the Katun Red: Incised variety from Holmul (Neivens de Estrada 2014:185) and Pico de Oro Incised from Ceibal (Sabloff 1975).

Kitam Incised: Kitam Variety (N=6)

Another incised type registered in the Plaza B ceramic assemblage is the Kitam Incised: Kitam variety (Figure 5.1e). The preferred vessel form is the bowl with incurved

walls and multicolored or mottled slip (Sullivan et al. 2009:164). The incisions on these vessels are thin, fine, post-slip lines consisting of rim encircling incisions, geometric shapes, and complex motifs depicting natural or supernatural themes (Cheetham 2005; Cheetham and Awe 2002:13). In the Plaza B assemblage, I identified three bowls and three bodies belonging to the Kitam Incised: Kitam variety. While four sherds display simple post-slip line incisions, two bowl fragments present complex motifs. One bowl exhibits a zigzag design known as lightning. The motif on the other bowl is not complete but it could represent either the avian-serpent or the cleft head theme.

These incised motifs with natural and supernatural themes have created controversy in the Mesoamerican literature because they have been traditionally regarded as being Olmec in origin. From this perspective, their appearance in the Maya lowlands has been seen as confirmation of the traditional model that regards lowland Maya as cultural late-comers that borrowed ideological elements from the culturally superior Olmecs or as influenced by Olmec immigrants (Coe 1977). Nevertheless, the symbols were etched on locally produced vessels by other contemporaneous Mesoamerican cultures settled in Chiapas, the Gulf Coast, El Salvador, Valley of Mexico, and Oaxaca pointing to interaction among peers and a shared substrate of beliefs (Awe 1992; Brown 2007; Cheetham 1998, 2005; Garber et al. 2004; Marcus 1989).

The pan-Mesoamerican symbols on pottery found in the Belize Valley (e.g., Cahal Pech and Blackman Eddy) and the Petén (e.g., Uaxactun, Tikal, and Holmul) appeared by 1000 B.C. on locally produced vessels. Therefore, they were only partially contemporaneous to the symbols in other regions of Mesoamerica where they made an earlier appearance (Awe 1992; Cheetham 1998, 2005; Brown and Garber 2005c; Laporte

and Fialko 1993; Neivens de Estrada 2014). Although the timing and abstract nature of the pan-Mesoamerican designs on lowland Maya vessels suggest that they were adopted rather than independently invented, they were in a style that is uniquely lowland Maya in its expression and execution (Garber and Awe 2008). Consequently, data suggest that early occupants of Cahal Pech and other Maya lowland sites were engaged in a pan-Mesoamerican interaction network that allowed exchange of items and ideological elements (Cheetham 2005:34; Sullivan et al. 2009:164). In the Belize Valley, the vessels decorated with pan-Mesoamerican motifs were likely considered as inalienable goods (Weiner 1985, 1992) whose use may have been restricted to the community leaders to perform rituals or feasts (Cheetham 1998; see Hirth 1992; LeCount 1996:172).

5.3.2 Cocoyol Ceramic Group (N=468)

Cocoyol Cream: Cocoyol Variety (N=463)

I identified 463 sherds belonging to the Cocoyol Cream: Cocoyol variety (Figure 5.2a). Cocoyol Cream: Cocoyol variety is described as having a creamy white, pale brown, or light gray slip on a smooth creamy ashy paste. This Cutil type is almost identical to Sak White: Sak variety at Holmul and Bill White at Tikal (Neivens de Estrada 2014:188). This type occurs mainly on bowls and shallow dishes (Sullivan et al. 2009:164). The Plaza B assemblage conforms to this description. I observed bowls with vertical sides, rounded lips, and direct rims as well as dishes with flared walls, rounded lips and exterior thickened or folded-out rims.

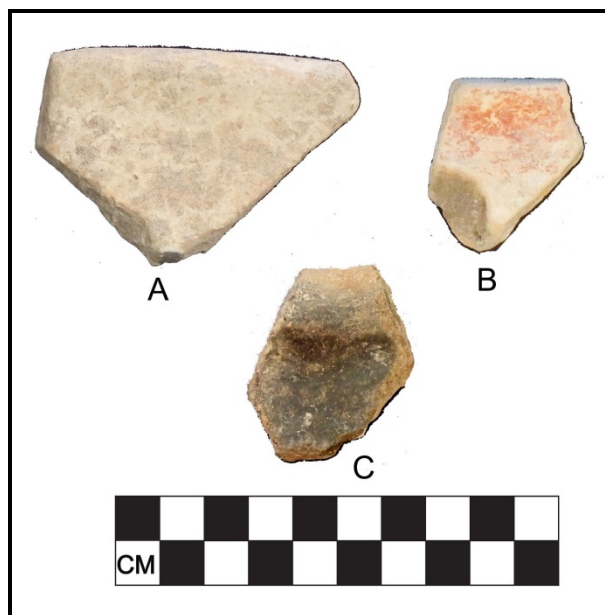


Figure 5.2. Cocoyol and Chi Ceramic Groups. (A) Cocoyol Cream: Cocoyol variety; (B) Unnamed Red-on-buff: Variety Unspecified; (C) Chi Black: Chi variety.

Unnamed Red-on-buff: Variety Unspecified (A; N=5)

The Unnamed Red-on-buff: Variety Unspecified (A) is distinguished by having red slip on its interior, a buff slip on the exterior, and a red band that encircles the exterior upper rim (Sullivan and Awe 2013). In the Plaza B collection, this type is represented by five fragments (Figure 5.2b). This type occurs on jars with flared or outwardly-curving necks, rounded lips, and folded out rims.

5.3.3 Chi Ceramic Group (N=63)

The Chi ceramic group is characterized by a “dull streaky black slip that erodes easily” (Sullivan et al. 2009:164). In the Plaza B assemblage, this group is represented by six sherds (Figure 5.2c). These sherds have a buff or brown paste with ash temper. I identified only a small jar with outwardly-curving neck and pointed lip and a bowl with

incurving sides and pointed lip. A body sherd displays a simple linear incision, which was made after the slip was applied.

5.3.4 Sikiya Ceramic Group (N=141)

The Sikiya ceramic group is composed of two types. Sikiya Unslipped: Sikiya variety is characterized by “its unslipped and sometimes burnished surface with highly variable color that ranges from tan to brown to black due to extensive fire clouding” (Sullivan et al. 2009:165; Sullivan and Awe 2012:119, Figure 7.8). Ardagh Orange-brown: Ardagh variety also is distinguished by its unslipped surface, but the surface has smudging and sometimes a dull orange wash. The color paste tends to be more consistent than the Sikiya variety ranging from dark orange, brown, and gray. In the SW Plaza B assemblage, nevertheless, I did not make the distinction between these types because the sample was small. Forms associated with the Plaza B collection consist of jars with outwardly-curving necks, bowls with incurving sides, and a colander (Figure 5.3).



Figure 5.3. Sikiya Ceramic Group.

5.3.5 Huetché Ceramic Group (N=9)

I observed nine sherds with a whitish cream slip and a medium-texture paste that is buff or brown in color (Figure 5.4). These sherds occur on bowls with incurving or vertical walls, direct rims, and pointed lips. White-slipped vessels were rare in the Belize Valley ceramic repertoire during the early Middle Preclassic. They were more frequent in western Petén, perhaps reflecting sporadic contact with Zoque population to the west, where white-slipped pottery was extremely popular at this time (Cheetham 2005). Because of this reason, I classified these white-slipped sherds as Huetché White, a ceramic type established at Ceibal and Altar de Sacrificios and included into the Rio Pasión Slipped ware (Smith 1972).



Figure 5.4. Huetche Ceramic Group.

5.3.6 Transitional Ceramic Types (N=179)

Uck Red-Savana Orange Ceramic Type (N=39)

I identified thirty nine sherds with an ashy fine paste that ranges from cream to orange in color (Figure 5.5a) and a red-orange slip. This transitional type occurs on vertical-sided bowls with rounded lips and direct rims and flared-sided dishes with exterior thickened rims and rounded lips. I also observed a miniature vertical-sided bowl with exterior thickened rim and rounded lip, as well as several censer fragments. The censer fragments are thick and feature a carved channel (Figure 5.5c; Table 5.3).

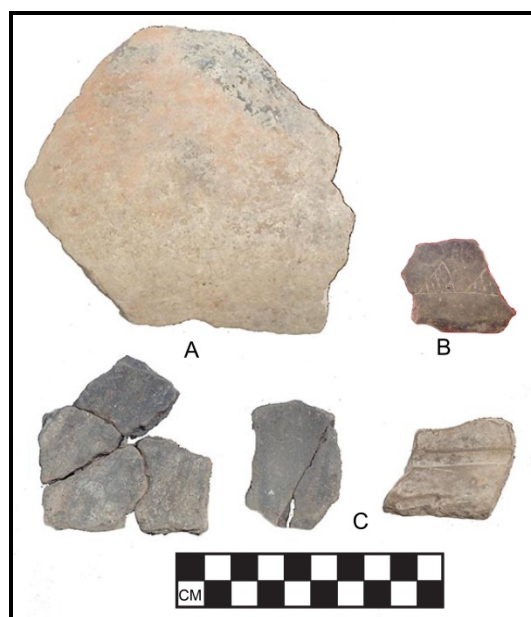


Figure 5.5. Transitional Ceramic Groups. (A and C) Uck – Savana Ceramic Group; (B) Kitam Incised- Unnamed Brown-Black Incised Ceramic Type.

Table 5.3. Transitional ceramic types.

Ware	Group	Type-variety	Frequency
Belize Valley Dull – Mars Orange	Uck – Savana	Uck Red – Savana Orange	39
	Uck – Unnamed Brown-black	Kitam Incised – Unnamed Brown-black Incised	1
Belize Valley Coarse-Uaxactun Unslipped	Sikiya – Jocote	Sikiya – Jocote Orange-brown	139
Total			179

Kitam Incised – Unnamed Brown-black Slipped Incised Ceramic Type (N=1)

I identified a single ceramic sherd distinguished by a thin, fine paste that is brown in color. The slip is dark brown and displays a post-slip linear incision. Based on these characteristics, the sherd was assigned as a transitional type between the Kitam Incised and Unnamed Brown-black Slipped Incised (Figure 5.5b).

Sikiya- Jocote Orange-brown Ceramic Type (N=139)

This ceramic type is represented by 139 sherds. It is characterized by an unslipped surface and a medium textured-brown paste. It occurs on incurving or vertical sided bowls with direct rims and rounded lips, *tecomates* with exterior thickened rims and rounded lips, and outwardly-curving jars with direct rims and rounded or pointed lips.

5.4 KANLUK CERAMIC COMPLEX (900-300 B.C.)

The Kanluk ceramic complex of Cahal Pech, equivalent to the Jenney Creek complex established by Gifford (1976), has been traditionally divided in two facets. The early facet was thought to be a pre-Mamom component, while the late facet was considered to have ties with the Mamom complex from Petén (Gifford 1976:62-63). Currently, it is acknowledged that the early facet is not pre-Mamom but it is partially contemporaneous to the early Petén complex. It also is recognized that the Kanluk complex does not belong to the Mamom sphere as it was originally thought (Ball and Taschek 2003). The Kanluk ceramic complex “differs considerably from the [other] Mamom complexes [...] because of the frequency of distribution of types and the presence of several dominant local types not reported from other locations” (Willey et al. 1965:295).

Table 5.4. Wares, groups, types, and varieties of the Kanluk ceramic complex observed in Middle Preclassic contexts beneath Plaza B.

Ware	Group	Type-variety	Frequency
Mars Orange	Savana	Savana Orange: Savana	1,075
		Savana Orange: Rejolla	8,611
		Savana Orange: Variety Unspecified (C-1)	208
		Savana Orange: Variety Unspecified (C-2)	204
		Savana Orange: Variety Unspecified (Red Slip)	6
		Savana Orange: Variety unspecified	3
		Reforma Incised: Mucnal	901
		Reforma Incised: Reforma	139
		Reforma Incised: Variety Unspecified (C-1)	10
		Reforma Incised: Variety Unspecified (C-2)	23
		Sibun Punctuated-incised: Sibun	33
	Unnamed Bichrome	Unnamed Bichrome: Variety Unspecified	13
		Unnamed Bichrome: Variety Unspecified (Incised)	5
		Unnamed Red-on-orange: Variety Unspecified	7
	Unnamed Black	Unnamed Black: Variety Unspecified (A)	26
		Unnamed Black: Variety Unspecified (B)	31
		Unnamed Black Incised: Variety Unspecified	23
Undesignated	Unnamed Brown-black	Unnamed Brown-black: Variety Unspecified	174
		Unnamed Brown-black Incised: Variety Unspecified	36
Uaxactun Unslipped	Jocote	Jocote Orange-brown: Jocote	15,159
		Chacchinic Red-on-orange-brown: Chacchinic	786
		Palma Daub	2
	Sayab	Sayab Daub	15
Rio Nuevo Glossy	Consejo	Consejo Red	16
	Quamina	Tower Hill Red-on-cream	3
Fort George Orange	Chicago	Chicago Orange	6
Flores Waxy	Joventud	Joventud Red	318
		Sampoperro Red	141
		Pinola Creek Incised	4
		Black Rock Red	15
	Chunhintá	Chunhintá Black	124
		Desprecio Incised	8
	Pital	Pital Cream	19
Paso Dante Incised		1	
		No identified	282
Total			28,428

The Kanluk ceramic complex consists of locally manufactured groups that are considered the fingerprint of the Belize Valley—the Jocote group of the Uaxactun Unslipped ware and the several groups composing the Mars Orange ware (e.g., Awe 1992; Garber et al. 2004; Gifford 1976; Shelton 2008). Beyond the valley, the presence of those groups is usually limited (e.g., Culbert 1963; Laporte and Fialko 1993; Smith 1955:31-32, 115). The Kanluk ceramic complex also includes a set of foreign wares coming from the Petén (e.g., Flores Waxy and Uaxactun Unslipped wares) and northern Belize (e.g., Rio Nuevo Glossy and Fort George Orange). The Kanluk assemblage uncovered beneath Plaza B is composed of 28,428 sherds and includes twelve ceramic groups and 34 ceramic type-variety modes (Table 5.4).

6.4.1 Jocote Ceramic Group (N=15,947)

Jocote Orange-brown: Jocote Variety (N=15,159)

Jocote Orange-brown: Jocote variety is established and described by Gifford (1976:63) for the Barton Ramie collection. This type has been observed across the Belize Valley and west of this region. It seems to be nearly identical to the Achiotes Unslipped: Raudal variety at Altar de Sacrificios (Adams 1971). According to Gifford (1976), this type is distinguished by a well-smoothed, unslipped surface that ranges from dull orange or orange-buff to brown in color. Pastes are medium textured with quartz and calcite inclusions and their colors are as variable as the vessel surfaces. Most of the vessels display a single encircling fillet appliqué on their exterior. This decoration tends to appear below the rim, on the shoulder of jars or on the mid-section of bowls. Jar forms predominate on this type-variety mode. They display vertical, flared or outwardly-

curving necks, direct or everted rims, and rounded, squared or pointed lips. Incurving bowls have direct or everted rims and rounded, pointed or squared lips, while the round-sided bowls show direct or slightly everted rims and squared, rounded or beveled lips. Those with slightly flared walls exhibit direct to slightly everted rims with rounded or squared lips. *Tecomates* have rounded or pointed lips and direct or interior- or exterior-thickened rims. In the Plaza B collection, I assigned 15,159 sherds to the Jocote Orange-brown: Jocote variety. I identified bowls, jars, and *tecomates*, as well as a small number of spouted vessels, dishes and vases (Figure 5.6).



Figure 5.6. Jocote Ceramic Group. Jocote Orange-Brown Ceramic Type.

Chacchinic Red-on-orange-brown: Chacchinic Variety (N=786)

Chacchinic Red-on-orange-brown: Chacchinic variety is described as being similar to the Jocote Orange-brown: Jocote variety in paste and surface treatment.

Chacchinic Red-on-orange-brown: Chacchinic variety displays a thin red slip or wash applied above the fillet on the exterior of jars, on the exterior and interior of jar necks, and on bowl interiors (Figure 5.7). Alternatively, the red wash or slip was applied in patterned zones (Gifford 1976:68). In the Plaza B collection, I assigned 786 sherds to the Chacchinic Red-on-orange-brown: Chacchinic variety based on their paste, surface, and decoration. This type-variety mode occurs on bowls, jars, and dishes.



Figure 5.7. Jocote Ceramic Group: Chacchinic Red-on-orange-brown Ceramic Type.

Palma Daub Ceramic Type (N=2)

The Palma Daub ceramic type is described as similar to the Jocote Orange-brown on paste, although harder and lighter in color. This type is distinguished by being decorated with daubs or zones of a thin, bright pink to red paint on the exterior surfaces of jars. At Barton Ramie, the Palma Daub ceramic type occurs as necked jars with wide,

flaring necks, everted or direct rims, and rounded or squared lips. Thin strap handles occurs on the shoulder of jars. Incurve bowls with everted rims and squared lips also are present (Gifford 1976:70). Palma Daub has been considered as a marker of the Mamom complex from Uaxactun, where a high frequency of these unslipped sherds was reported (Willey et al. 1967). Contrarily, this ceramic type is poorly represented in the Plaza B assemblage. I only identified two sherds as belonging to this ceramic type. A similar situation is reported in Altar de Sacrificios and Ceibal (Willey et al. 1965).

5.4.2 Sayab Ceramic Group (N=15)

The Sayab ceramic group is distinguished by a medium-textured paste heavily laced with calcite inclusions. Its paste is hard and ranges from buff to light gray-brown in color. The group is confined to unslipped jars and bowls marked by random and deep striations on their shoulders along with daubs of bright red paint and appliqué fillet decorations. Jars exhibit vertical or out-flared necks, direct or everted rims, and rounded or pointed lips. Bowls have incurved sides and direct rims (Gifford 1976:71). In the Plaza B collection, I identified fifteen sherds as belonging to the Sayab ceramic group. Because of their limited number, I did not divide the sample into types and varieties. The Sayab-group collection from Plaza B is confined to bowls, jars, and dishes.

5.4.3 Savana Ceramic Group (N=11,213)

Savana Orange: Rejolla Variety (N=8,611)

The Savana Orange: Rejolla variety has been considered diagnostic of the Belize Valley. The identifying attributes of this type includes a fine, fairly uniform orange paste

with very fine calcite and, sometimes, volcanic ash temper. The surfaces of the vessels are usually well smoothed and coated with a thin orange to orange-red slip (Gifford 1976:73-74).

A total of 8,611 sherds represent this ceramic type in the Plaza B collection (Figure 5.8). Dishes and bowls predominate in this ceramic type assemblage. Jars, spouted vessels, censers, *tecomates*, and miniature vessels are also present, as well as one vase and one *comal*. Flared-sided dishes with folded out rims and rounded lips predominate in the dish sample. Dishes or bowls with vertical sides, direct or folded out rims and rounded lips are also present in significant numbers. Incurving bowls and bowls with round sides and vertical necks are present and display direct rims and rounded lips. Jars have outwardly-curving necks, direct rims, and rounded lips.



Figure 5.8. Savana Ceramic Group. Savana Orange: Rejolla Variety.

The Rejolla-variety sherds are coated with an orange-red slip on the exterior, interior or both surfaces. Some sherds exhibit modeled anthropomorphic or zoomorphic effigies attached to the body. Some bowls with vertical or incurve walls are decorated with fillet-appliqué. Appendages consist of tubular spouts, rectangular strap handles and nubbins used as foots or handles.

Savana Orange: Savana Variety (N=1,075)

This ceramic type is similar to the Savana Orange: Rejolla variety, although the Savana-variety sherds display a finer paste, lighter surface color, and lighter orange slip (Gifford 1976:75). The Savana-variety assemblage in Plaza B is minor compared to the Rejolla variety. I identified a total of 1,075 Savana variety sherds. Vertical-sided dishes or bowls with folded out rims and rounded lips prevail in the Savana variety assemblage. Flared-sided dishes with folded out rims and rounded lips are also significant. The jar sample is limited and it consists of outwardly-curving necked vessels with direct or exterior thickened rims and rounded lips. I observed *tecomates* with incurve sides, direct rims and rounded lips, miniature jars, and miniature bowls. Appendages include spouts and handles. Some bowls with vertical walls are decorated with fillet-appliqué (Figure 5.9).



Figure 5.9. Savana Ceramic Group: Savana Orange: Savana Variety.

Savana Orange: Varieties Unspecified (N=421)

During the sorting of the sherds, I identified three unspecified varieties of Savana Orange established by Gifford (1976). The Savana Orange: Unspecified variety (C-1) includes sherds that are thinner-walled than the rest of the sample. Otherwise, they are similar to the Savana variety. Three bowl fragments in the Plaza B collection have a fillet-appliqué decoration and one bowl fragment displays a modeled zoomorphic effigy depicting a monkey head (Figure 5.10a).

The Savana Orange: Unspecified variety (C-2) also includes sherds that are thin-walled, but which are similar in paste composition and surface color to the Rejolla variety. This unspecified variety occurs mainly on bowls, although jars, dishes and miniature vessels also are observed. One ceramic fragment exhibits a fillet-appliqué and another one displays a modeled zoomorphic effigy depicting a bat head (Figure 5.10b).

The third unspecified variety refers to sherds whose paste and surface are similar to the Savana variety but which are coated with a red slip rather than an orange-red. This red slip is similar to the Joventud specimens. Consequently, the Savana Orange: Variety unspecified (red slip) could have been locally produced to imitate the Petén red ware (Figure 5.10c).



Figure 5.10. Savana Ceramic Group: Savana Orange: Varieties Unspecified

Reforma Incised: Mucnal Variety (N=901)

The Reforma Incised: Mucnal variety includes Rejolla variety sherds with either preslip grooving or postslip incising (Gifford 1976). In the Plaza B assemblage, this type-variety mode occurs on flaring dishes with everted rims and incised lips and vertical sided dishes or bowls with direct rims and rounded lips. Incurving bowls with direct rims and rounded lips and outwardly-curving dishes also are observed in the sample. Spouted vessels, vases, jars, and censers are present but they are rare.



Figure 5.11. Savana Ceramic Group. Reforma Incised: Mucnal Variety.

Decoration consists of encircling grooves that were applied before the slip on the exterior and interior surfaces and lips. Incisions were applied after the vessels were coated with slip. As in the grooving method, incisions were applied on the exterior or interior surfaces and lips of vessels. Incisions on exterior surfaces include encircling lines (ranging from one to four in number) and geometric motifs such as diagonal parallel lines, cross-hatching and triangles. Only a single pan-Mesoamerican motif is present in the sample: the lightning. This motif is depicted on the interior and exterior surfaces of large dishes. Punctuation is observed at the basal section of one flared dish. Chamfering also was employed as a method of decoration, though it is confined to spouted vessels and bowls. This decoration technique was rare and could have been used to imitate the Desvario Chamfered ceramic type at Altar de Sacrificios (Adams 1971:46). Horizontal fluting also was employed to decorate bowls. Some of these bowls are composite and the

fluting is confined to the upper section. On occasions, vessels were decorated using a combination of incising and grooving or vertical fluting and incising (Figure 5.11).

Reforma Incised: Reforma Variety (N=139)

The Reforma Incised: Reforma variety is similar in paste composition and color surface to the Savana Orange: Savana variety. Nevertheless, the predominant forms—flaring dishes with direct or everted rims and rounded lips and vertical bowls or dishes with direct rims and rounded lips—are comparable to those forms of the Mucnal variety. Incurving bowls, outwardly-curving dishes or bowls, jars, and vases were rare. Decoration methods are also similar to the Mucnal variety, except that the geometric and lightning motifs are not observed (Figure 5.12).



Figure 5.12. Savana Ceramic Group. Reforma Incised: Reforma Variety.

Reforma Incised: Varieties Unspecified (N=33)

Two unspecified varieties were identified during the sorting of the ceramic materials. These varieties consist of the grooved-incised versions of the Savana Orange: C1 and C2 varieties.

Sibun Punctated-incised: Sibun Variety (N=33)

The Sibun Punctated-incised: Sibun variety is established by Gifford (1976). Its identifying attribute consists of the simultaneous presence of two decoration methods—post-slip punctations and incision—on several of the Savana pastes (Gifford 1976:77). In the Plaza B assemblage, this type-variety mode is represented by 33 sherds, which are thin-walled, similar to the C2 variety of the Savana Orange ceramic type. It is confined to spouted vessels, although sometimes it occurs on jars and bowls (Figure 5.13).



Figure 5.13. Savana Ceramic Group. Sibun Punctuated-incised: Sibun Variety

5.4.4 Unnamed Bichrome Ceramic Group ($N=25$)

During the sorting of the Plaza B assemblage, I identified three new ceramic types manufactured with Savana pastes—Unnamed Bichrome, Unnamed Bichrome Incised, and Unnamed Red-on-orange-red (Figure 5.14). The main identifying attribute of these ceramic types consists of surfaces coated with two-color slips. One of these types is decorated with the incision method.



Figure 5.14. Unnamed Bichrome Ceramic Group. (A) Unnamed Bichrome-Incised: Variety Unspecified; (B) Unnamed Red-on-orange-red: Variety Unspecified.

Unnamed Bichrome: Varieties Unspecified ($N=13$)

During the sorting of the Plaza B assemblage, I identified thirteen sherds exhibiting both black and orange-red slips on their exterior surface. The paste composition and color surface of these sherds are comparable to the Savana (Unnamed Bichrome: Variety Unspecified A) and Rejolla varieties (Unnamed Bichrome: Variety

Unspecified B). I only observed one rim, which corresponds to a flaring dish with exterior thickened rim and inwardly-beveled lip.

Unnamed Bichrome-Incised: Variety Unspecified (N=5)

Five sherds of Unnamed Bichrome: Variety Unspecified (B) were decorated by applying simple linear incisions on their exterior surfaces. One particular specimen exhibits a combination of punctation and incision decorative methods (Figure 5.14a). This particular type is confined to slightly incurving bowls with direct rims and rounded lips.

Unnamed Red-on-orange-red: Variety Unspecified (N=7)

The Unnamed Red-on-orange-red: Variety Unspecified is represented by seven sherds and includes bowls manufactured with Savana Orange paste that are covered with an orange-red wash on the exterior surface. A band of red slip is present on the exterior rim of the vessels (Figure 5.14b). Bowls have short-necks and rounded walls, direct rims and rounded lips. I also observed a bowl with restricted orifice or *tecomate*. Most likely, this ceramic type was a local imitation of the Red-on-cream types from northern Belize and the Petén.

5.4.5 Unnamed Black Ceramic Group (N=80)

I established the Unnamed Black ceramic group during the current analysis. This ceramic group is characterized by displaying a dull, black slip on Savana-group pastes. The presence of this ceramic group is minor in the Plaza B assemblage with only 80

sherds in total. Based on its attributes, the Unnamed Black ceramic group of Cahal Pech could be identical to the Quemado group established for Ball and Tascheck (2003) for Buenavista. It also could represent a continuation of the Chi Black ceramic type or a local copy of Chunhinta Black.

Unnamed Black: Variety Unspecified (A; N=26)

I classified twenty-six sherds as Unnamed Black: Variety Unspecified (A) ceramic type. This category includes vessels with a paste similar to the Savana Orange: Savana variety covered with a thin, dull, black slip on the exterior. This type-variety mode occurs on bowls with vertical sides, everted or direct rims, and rounded or inwardly beveled lips. Jars with outwardly-curving or vertical necks, direct or exterior rims, and rounded or pointed lips also are observed.

Unnamed Black: Variety Unspecified (B; N=31)

The Unnamed Black: Variety Unspecified (B) ceramic type is represented by 31 sherds. It is characterized by a paste similar to the Savana Orange: Rejolla variety and a thin, dull, black slip on the exterior (Figure 5.15a). In three cases, sherds also display an orange-red slip on their interior. Although the number of diagnostic elements is limited, I observed that this type-variety mode occurs on bowls with vertical or rounded sides, exterior thickened or folded out rims and rounded lips. In addition, there are bowls simulating gourds. I also observed a jar with outwardly-curving neck, a direct rim, and a rounded lip, along with a single dish.

Unnamed Black Incised: Varieties Unspecified (A and B; N=23)

These type-variety modes include the incised version of the two varieties of the Unnamed Black type (n=23; Figure 5.15b). Unnamed Black Incised: Variety Unspecified (A) comprises vessels with paste similar to the Savana Orange: Savana variety and a dull, black slip. The methods of fluting, grooving and incisions were used to decorate the vessels. This type-variety mode occurs on bowls with vertical sides, direct rims, and rounded lips.



Figure 5.15. Unnamed Black Ceramic Group. (A) Unnamed Black: Variety Unspecified B; (B) Unnamed Black-Incised: Variety Unspecified B

The Unnamed Black Incised: Variety Unspecified (B) is represented by vessels with a Rejolla variety paste and a dull, black slip on their exterior. The vessels are decorated with horizontal fluting, simple linear incisions and grooving. This type-variety mode is confined to bowls with round and vertical sides, rounded or pointed lips and

direct rims. I also identified a fragment of a spouted vessel. Most of the decorated sherds with black slip belong to this unspecified variety.

5.4.6 Unnamed Brown-black Ceramic Group (N=210)

I established the Unnamed Brown-black ceramic group during the current analysis. Based on its identifying attributes, it could be analogous to the Luminoso Burnished group identified at Buenavista by Ball and Tascheck (2003). The Unnamed Brown-black ceramic group at Plaza B is composed of two type-variety modes, the Unnamed Brown-black: Variety Unspecified and Unnamed Brown-black Incised: Variety Unspecified.

Unnamed Brown-black: Variety Unspecified (N=174)

The Unnamed Brown-black: Variety Unspecified sample consists of 174 sherds. This type is distinguished by a medium texture paste that ranges from buff to dark brown in color, similar to the paste of Jocote Orange-brown: Jocote variety but finer. The vessels classified as Unnamed Brown-black: Variety Unspecified have thin walls, which are finished with a burnished, brown-black slip on their exterior. There are few small diagnostic sherds in this sample (n=6). Nevertheless, I observed that this type is confined to incurving or vertical-sided bowls with round lips and direct or everted rims, a flared dish with everted rim and rounded lip and a jar with outwardly-curving neck, squared lip, and exterior thickened rim.

Unnamed Brown-black Incised: Variety Unspecified (N=36)

The Unnamed Brown-black Incised: Variety Unspecified represents the incised version of the Unnamed Brown-black type. The sample includes 36 ceramic fragments. The vessels of this type are decorated using the incision and grooving methods (Figure 5.16). The Unnamed Brown-black Incised: Variety Unspecified seems to be similar to the Kitam Incised: Kitam variety except that the incision in the Kanluk type was pre-slip. Consequently, it is likely that the Unnamed Brown-black Incised type developed from Kitam Incised. It is worth mentioning that there are no diagnostic sherds of this incised type in the Cahal Pech sample. This opens the possibility that the incised and non-incised fragments of the group are part of the same type.

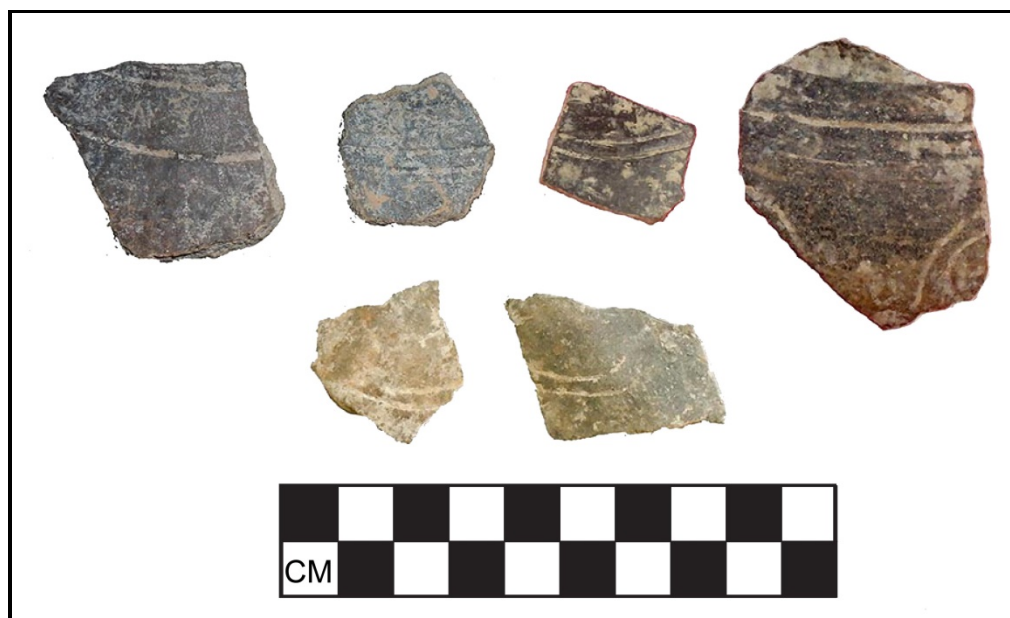


Figure 5.16. Unnamed Brown-black Ceramic Group. Unnamed Brown-black Incised: Variety Unspecified.

5.4.7 Joventud Ceramic Group (N=478)

Joventud Red Ceramic Type (N=318)

The Joventud Red ceramic type is comprised of sherds with a buff-orange paste that is medium to fine in texture and has some calcite inclusions. The surfaces were all covered with red slip (Gifford 1976:78). In the Plaza B assemblage, the Joventud Red type is represented by 318 sherds. It occurred on flaring-sided plates or dishes with rounded lips and direct or exterior thickened rims. Everted or folded out rims and pointed or squared lips also are observed on dishes or plates. Bowls or dishes with vertical sides are also present and they appear with rounded or pointed lips and direct or folded out rims. I also identified an incurving bowl with direct rim and pointed lip and two bowls with outwardly-curving necks, direct rims, and rounded lips (Figure 5.17a).

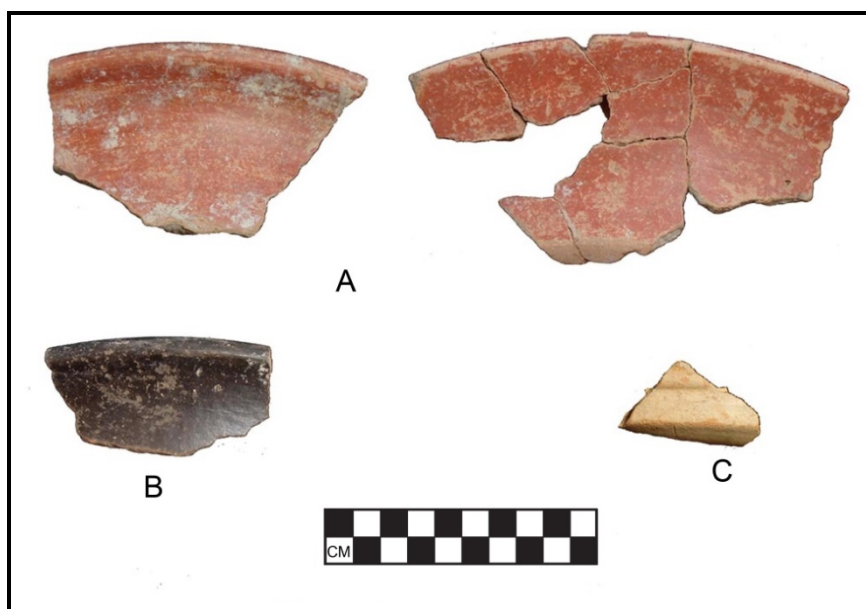


Figure 5.17. Flores Waxy Ceramic Ware- (A) Joventud Ceramic Group; (B) Chunhinta Ceramic Group; (C) Pital Ceramic Group.

Sampoperro Red Ceramic Type (N=141)

The Sampoperro Red also has a buff-orange paste that is medium to fine in texture and has some calcite inclusions. Nevertheless, the slip that covers the surfaces is a lustrous true red, when compared to the Joventud Red slip that is more orange in color (Gifford 1976:77). In the Plaza B assemblage, this type is confined to bowls, dishes and jars. Flaring dishes or plates with rounded lips and direct, everted, folded out or exterior thickened rims are observed. Bowls or dishes with vertical walls have rounded or pointed lips and direct rims. Incurved bowls with restricted orifices displaying direct rims, and rounded lips also are present, as were jars with vertical necks, direct rims, and rounded lips (Figure 5.17a).

Black Rock Red Ceramic Type (N=15)

The Black Rock ceramic type includes sherds with a dull, red-brown slip. The paste is very dense and medium texture with large calcite inclusions (Gifford 1976:79). In the Plaza B assemblage, this ceramic type is represented by fifteen sherds and it occurs on bowls and dishes. Bowls have vertical or rounded walls, pointed lips and direct rims. Dishes have flared sides, rounded or pointed lips, and direct or folded-out rims.

Pinola Creek Incised (N=4)

The Pinola Creek Incised ceramic type is similar in paste and slip to the Sampoperro Red type but it is differentiated by the presence of fine, grooved-incised vertical lines that were applied on vessels exterior before slipping (Gifford 1976:79). I

only observed four sherds of this type in the Plaza B assemblage. One of them, it consists of a fragment of a vertical-sided bowl with folded in rim and rounded lip.

5.4.8 Chunhinta Ceramic Group (N=132)

Chunhinta Black Ceramic Type (N=124)

The Chunhinta Black ceramic type includes sherds slipped with a soft black paint, whose paste is highly variable in both composition and color (Gifford 1976:82). In the Plaza B collection, this ceramic type is represented by 124 sherds and is confined to dishes and bowls. Vessels of this type include flared-sided dishes or bowls with direct, exterior thickened, or folded out rims, and rounded and pointed lips. Vertical-sided bowls have direct, folded out or exterior thickened rims and rounded or pointed lips. Incurving bowls display direct rims and rounded lips (Figure 5.17b).

Deprecio Incised Ceramic Type (N=8)

The Deprecio Incised type is the grooved-incised version of the Chunhinta type. The pre-slip grooved-incision was applied to exterior surfaces (Gifford 1976:83). In the Plaza B assemblage, it is represented by eight sherds and it is confined to vertical-sided bowls with direct or everted rims and rounded or squared lips, as well as flaring dishes with folded out rims and incised lips.

5.4.9 Pital Ceramic Group (N=20)

The Pital ceramic group is represented by the Pital Cream and Paso Danto Incised ceramic types. The identifying attribute of the Pital Cream ceramic type consists of a

cream slip. The paste of these vessels is gray to light brown in color, of a fine to medium texture with vitric tuff and pumice inclusions (Gifford 1976:81). This ceramic type is poorly represented in the Plaza B assemblage. I only identified eighteen sherds. This type occurs on dishes or bowls with flared sides, direct or folded out rims, and rounded or pointed lips. I also observed a jar with vertical neck, direct rim, and rounded lip. The Paso Danto Incised represents the incised version of the Pital Cream type. The incisions were applied before the vessels were slipped (Figure 5.17c).

5.4.10 Chicago Orange Ceramic Group (N=6)

In the ceramic assemblage of Plaza B, I identified six sherds of the Chicago Orange ceramic type, Fort George Orange ware. The principal identifying attribute of this type-variety mode is a thin non-lustrous pale slip or wash that usually reflects the same color as the paste. The slip color varies from light gray to reddish yellow and pinkish gray to pink. The paste also presents a dark gray core and lighter edges due to differential firing (Kosakowski 1987). The Chicago Orange sherds beneath Plaza B presented a pink wash. The type-variety mode occurs on flaring-sided dishes with exterior thickened rims and rounded lips, vertical-sided bowls with direct or exterior thickened rims and round lips and an outwardly-curving necked jar with exterior thickened rim and round lips.

5.4.11 Consejo Ceramic Group (N=16)

The Consejo ceramic group is represented by sixteen sherds of the Consejo Red type. This type from Northern Belize is distinguished by a lustrous to glossy bright red slip over a creamy white, pale buff, or orange underslip or wash (Kosakowsky 1987;

Pring 1977). The Plaza B sample occurs on flaring sided dishes with exterior thickened rims and round lips and bowls. I also observed fragments of a gadrooned vessel that have the appearance of a squash (Figure 5.18a).



Figure 5.18. Northern Belize Ceramic Groups. (A) Consejo Red Ceramic Group; (B) Quamina Ceramic Group.

5.4.12 Quamina Ceramic Group (N=3)

Among the foreign wares, I observed three sherds that are distinguished by a glossy red slip on the interior and exterior upper rim over a cream wash. The sherds had a medium texture buff paste suggesting a foreign pottery. Although I did not identify the specific ceramic type or group, it is likely that these sherds belong to the Tower Hill Red-on-cream ceramic type, located into the Quamina group at Cuello (Kosakowski 1987). Other options include Aac Red-on-buff at Tikal as well as Yaxha-Sacnab (Rice 1979) and Toribio Red-on-cream at Altar de Sacrificios (Adams 1971). In the Plaza B assemblage, the red-on-cream vessels occur on jars with vertical necks, folded out rims and rounded lips (Figure 5.18b).

5.5 CERAMIC TYPES AND FORMS OF POTTERY

In this section, I present the frequency of types, varieties and classes of vessels by construction phase. In addition to a finer definition of the Kanluk ceramic complex, I attempt to determine relative dates for each construction phase. Additionally, I aim to establish the temporal distribution of local prestige vessels and foreign pottery, as well as classes of vessels associated with each building. These data are presented with the goal of assessing the nature of activities conducted in the different social spaces across time (e.g., domestic, feast, ritual, etcetera). Whole vessels were not present in the uncovered deposits. I only uncovered halved sections that could have been intentionally cut as part of ritual activities (see Brown 2007). Consequently, I interpret the deposits as secondary contexts. I believe that pottery used as part of the construction fill were the remains of activities performed in the constructions that once covered.

5.5.1 Cunil Construction Phases

The number of sherds recovered from the Cunil contexts was limited, which is likely due to the limited excavations conducted in the deepest contexts of Plaza B. Among the material used to cover the construction phase Plaza B/1st, I identified only body fragments and bowls of the Sikiya, Cocoyol Cream and Uck Red types (Table 5.5). Three specimens of the Savana Group also were identified, but they were likely intrusive elements, perhaps due to the intensive rain that battered the region during the field season. The hypothesis of Savana group sherds as intrusive elements is supported by the ceramic materials recovered beneath Plaza B/3rd, which only included bodies and bowls of the Sikiya, Cocoyol Cream and Uck Red types (Table 5.6). Plaza B/3rd was covered by

sediments mixed with Cunil and Kanluk ceramic material. Unslipped Sikiya-Jocote Orange-brown ceramic type prevailed in this assemblage and included bowls and jars. The Cunil slipped pottery included bowls and plates, while the Kanluk sample was represented only by body sherds (Table 5.7).

Table 5.5. Construction phase Plaza B/2nd.

		Body	Bowl	Dish	Total
Sikiya	Sikiya: Sikiya	4	---	---	4
Cocoyol	Cocoyol Cream: Cocoyol	1	---	---	1
Uck	Uck Red	1	1	---	2
Savana	Savana Orange: Rejolla	1	---	---	1
	Reforma Incised: Reforma	1	---	1	2
Total		8	1	1	10

Table 5.6. Construction phase Plaza B/3rd.

		Body	Bowl	Total
Sikiya	Sikiya: Sikiya	72	1	73
Cocoyol	Cocoyol Cream: Cocoyol	3	1	4
Uck	Uck Red: Uck	6		6
Total		81	2	83

Table 5.7. Construction phase Plaza B/4th.

		Base	Body	Bowl	Plate	Jar	Total
Cocoyol	Cocoyol Cream: Cocoyol		16	1			17
Uck	Uck Red: Uck	1		1	3		5
	No identified		4				4
Sikiya-Jocote			95	6		2	103
Jocote	Jocote Orange-brown: Jocote		2				2
Savana	Savana Orange: Rejolla		13				13
Unnamed Brown-black	Unnamed Brown-black: Unsp.		1				1
Total		1	131	8	3	2	145

5.5.2 Assessment of the Early Facet of the Kanluk Ceramic Phase

The early facet of the Kanluk phase was represented by the materials recovered during the excavation of construction phases Plaza B/5^{th10}, Plaza B/6th, Plaza B/7th and Plaza B/8th (Tables 5.8–5.11). Like the Cunil sample, the early Kanluk sample recovered from construction fill were limited because it came from test pits. The exception is the collection recovered during the excavation of Plaza B/8th phase, the apsidal platform.

Table 5.8. Construction phase Plaza B/5th.

Group	Type-variety	Handle	Base	Body	Bowl	Small bowl	Dish	Jar	Total
Uck	Uck Red: Uck		1	46	2		17		66
Cocoyol	Cocoyol Cream: Cocoyol			46	1		5		52
	Unnamed Red-on buff: Unsp.			1					1
	No identified		1	17				1	19
Sikiya – Jocote		1	1	26				1	29
Savana	Savana Orange: Rejolla	1		12	5	3	2		23
	Savana Orange: Unspecified C-1				1				1
	Sibun Punctated-Incised: Sibun			2					2
Unnamed Brown-black	Unnamed Brown-black: Unsp.			9					9
Jocote	Jocote Orange-brown: Jocote			161	1				162
	Chacchinic Red-on-orange-brown			1					1
Total		2	3	321	10	3	24	2	365

¹⁰ Plaza B/5th likely corresponds to the Cunil – Kanluk transition, but it was assigned to the early facet of the Kanluk phase based on the higher percentage of Kanluk ceramic materials.

Table 5. 9. Construction phase Plaza B/6th.

Group	Type-variety	Handle	Body	Bowl	Dish	Jar	Tecomate	Total
Cocoyol	Cocoyol Cream: Cocoyol		11					11
Savana	Savana Orange: Rejolla		33	3	1		1	38
	Savana Orange: Savana		9					9
	Savana Orange: Unspecified C-1		4					4
	Reforma Incised: Mucnal			1				1
Unnamed Brown-black	Unnamed Brown-black: Unsp.		2					2
	Unnamed Brown-black Incised: Unsp.		3					3
Jocote	Jocote Orange-brown: Jocote	1	78	4		4		87
	Chacchinic Red-on-orange-brown		2					2
	No identified		1					1
Total		1	142	12	1	4	1	158

The early facet is distinguished by a predominance of Savana Orange: Rejolla variety (n=443, 25%) and Jocote Orange-brown: Jocote variety (n=932, 52.5%). The types Unnamed Brown-black, Unnamed Brown-black Incised, Chacchinic Red-on-orange-brown and the Savana, C-1 and C-2 varieties of Savana Orange type are also present in the early-facet assemblage, although their percentages are low. In previous research, this facet was dated to 850-650 B.C. based on ceramic analogy and a radiocarbon date of 2720 ± 60 BP, calibrated 1 sigma to 970-816 B.C. (Awe 1992).

Table 5.10. Construction phase Plaza B/7th.

Group	Type-variety	Handle	Base	Body	Bowl	Small bowl	Dish	Dish-bowl	Jar	Small jar	Tecomate	Censer	Total
Cocoyol	Cocoyol Cream: Cocoyol		5	2									7
Uck	Uck Red: Uck		3	1									4
Uck-Savana			2										2
Savana	Savana Orange: Rejolla		4	21	8	1	8	7					49
	Savana Orange: Savana			44	1								45
	Savana Orange: Unspecified C-2					2							2
	Reforma Incised: Reforma			1	1								2
	Reforma Incised: Mucnal			2			1		1				4
Unnamed Black	Unnamed Black: Unspecified A			2									2
Unnamed Brown-black	Unnamed Brown-black: Unspecified			8									8
	Unnamed Brown-black Incised: Unspecified			2									2
Jocote	Jocote Orange-brown: Jocote	1		148	6	1			2	3	1	2	164
	Chacchinic Red-on-orange-brown			6									6
Joventud	Sampoperro Red			1			1						2
Sayab	Sayab Daub			1									1
	No identified			4									4
Total		1	14	243	16	4	10	7	3	3	1	2	304

The groove-incised varieties of the Savana group (i.e., Reforma Incised: Mucnal and Reforma Incised: Reforma) made its appearance late in the early facet, when some vessels were decorated with simple linear incisions, with grooves that encircled the exterior wall, and horizontal fluting. The Mamom pottery from the Petén or northern Belize also appeared late in the early facet as well but their presence is extremely rare, representing less than 1% of the assemblage. I identified the ceramic types of Joventud Red, Sampoperro Red, Chunhinta Black and Sayab Daub beneath Plaza B/7th and Plaza B/8th construction phases. I also identified in Cunil-phase pottery (e.g., Uck Red: Uck,

Cocoyol Cream: Cocoyol and Unnamed Red-on-buff: Variety unspecified) in the early-facet assemblage, although its presence is limited. A similar phenomenon was observed in the excavations of Structure B-4 and Plaza B (Sullivan 2015, personal communication). It is not possible to determine whether the Cunil vessels continued to be used during the early facet of the Kanluk phase or they were part of a mixed secondary context containing early-Kanluk and Cunil pottery.

Table 5.11. Construction phase Plaza B/8th.

Group	Type-variety	Handle	Base	Body	Bowl	Dish	Dish-bowl	Jar	Small bowl	Small jar	Censer	Vase	Total
Cocoyol	Cocoyol Cream: Cocoyol			8		1							9
	Unnamed Red-on-buff: Unspecified				1								1
Uck	Uck Red: Uck			11	1								12
Savana	Savana Orange: Rejolla		14	267	17	14	16	2		1	2		333
	Savana Orange: Savana				2								2
	Savana Orange: Unspecified C-1			3									3
	Reforma Incised: Reforma			1	1								2
	Reforma Incised: Mucnal			4	7	1							12
Unnamed Brown-black	Unnamed Brown-black: Unspecified			15									15
	Unnamed Brown-black Incised: Unspecified			1									1
Jocote	Jocote Orange-brown: Jocote	15		487	14	1		18	3	3		3	544
Chunhint	Chunhint Black			1									1
	No identified			12									12
Total		15	14	810	43	17	16	20	3	4	2	3	947

Although the amount of diagnostic sherds uncovered during the excavation of Plaza B/5th, Plaza B/6th and Plaza B/7th is small, I established that slipped bowls and dishes were predominant in these assemblages, while unslipped bowls and jars are rare. It is not until the Plaza B/7th construction phase when miniature vessels and censers (n=7,

15.2% of the diagnostic sherds) appeared, pottery usually associated with ritual performance. In the ceramic collections recovered beneath Plaza B/8th, there are slight differences. On one hand, slipped bowls and dishes still predominate in this ceramic collection (n=61, 56.5% of the diagnostic sherds), indicating that food-serving continued being a significant activity. On the other hand, unslipped vessels increase significantly in number (n=36, 33.3%), which may suggest that the fill used to construct the apsidal platform and cover the building associated with the small-slab wall came from a domestic context. A few censers and miniature vessels also are part of the inventory of this construction fill, showing the practice of ritual activities.

5.5.3 The Late Facet of the Kanluk Ceramic Phase

The late facet of the Kanluk phase is represented by the materials found during the excavation of construction phases Plaza B/9th, Plaza B/10th, Plaza B/11th and Plaza B/12th (Tables 5.12–5.18). I interpret these ceramic inventories are interpreted as part of construction fill layers, likely associated with the buildings they covered. The only exception is the material from a midden located east of the rectangular platform Plaza B/11th-B, and the material from beneath the cobbled platform constructed during the Kanluk – Barton Creek transition. Awe (1992) dated this facet to 650-350 B.C., based on ceramic analogy and a radiocarbon date of 2470±90BP, calibrated 1 sigma to 791-407 B.C.

Table 5.12. Construction phase Plaza B/9th.

Group	Type-Variety	Handle	Foot	Base	Body	Bowl	Small bowl	Dish	Dish bowl	Jar	Small jar	Tecomate	Total
Cocoyol	Cocoyol Cream: Cocoyol				23	3							26
Uck	Uck Red: Uck				14								14
	No identified				1								1
Savana	Savana Orange: Rejolla	1	1	24	509	16	7	15	30	8		1	612
	Savana Orange: Savana			3	18	10	2	4		1	1		39
	Savana Orange: Unspecified C-1				5	2							7
	Savana Orange: Unspecified C-2				2			2					4
	Reforma Incised: Reforma				2	1		2					5
	Reforma Incised: Mucnal				15	25		9					49
Unnamed Black	Unnamed Black: Unspecified A				2								2
	Unnamed Black: Unspecified B				4	6							10
	Unnamed Black Incised: Unspecified B				4	1							5
Unnamed Bichrome	Unnamed Bichrome: Unspecified A							1					1
Unnamed Brown-black	Unnamed Brown-black: Unspecified				17	1		1					19
	Unnamed Brown-black Incised: Unspecified				9								9
Jocote	Jocote Orange-brown: Jocote	17			1031	19	5			32			1104
	Chacchinic Red-on-orange-brown				29	3				1			33
Joventud	Joventud Red				1								1
Chunhinta	Chunhinta Black				2	1							3
	No identified				8	2				3			

Table 5.14. Construction phase Plaza B/11th-A.

Group	Type-variety	Handle	Base	Body	Bowl	Small bowl	Dish	Dish / bowl	Jar	Small jar	Spouted vessel	Total
Cocoyol	Cocoyol Cream: Cocoyol			2								2
Uck	Uck Red: Uck				1							1
Savana	Savana Orange: Rejolla	1	1	126	2	2	8	4	2	1	1	148
	Savana Orange: Savana			2			1		1			20
	Savana Orange: Unspecified C-1			7	2							9
	Savana Orange: Unspecified C-2					2						2
	Reforma Incised: Mucnal			7	1		2					10
	Sibun Punctated-Incised: Sibun			2								2
Unnamed Brown-black	Unnamed Brown-black: Unspecified			2								2
Jocote	Jocote Orange-brown: Jocote	6		300	5	4	2		6	1		324
	Chacchinic Red-on-orange-brown			7								7
Joventud	Joventud Red		1	12								13
Chunhinta	Chunhinta Black			1								1
	No identified			2								2

Tabla 5.15. Type-variety modes and vessel forms uncovered beneath the construction phase Plaza B/11th-C.

Group	Type-variety	Base	Body	Bowl	Dish	Jar	Small jar	Tecomate	Spouted vessel	Total
			5							5
Uck	Uck Red		1			1				2
Savana	Savana Orange: Rejolla	1	25		3		1		1	31
	Savana Orange: Savana		16	3		1				20
	Reforma Incised: Mucnal			1				1		2
Unnamed Brown-black	Unnamed Brown-black Incised: Unspecified		1							1
Jocote	Jocote Orange-brown: Jocote		82	1		4				87
	No identified		1							1

Table 5.16. Construction phase Plaza B/11th-B.

Group	Type-variety	Handle & Foot	Base	Body	Bowl	Small bowl	Dish	Dish bowl	Jar	Small jar	Tecomate	Spouted vessel	Censer	Vase	Total
Sikiya	Sikiya: Sikiya			1	2										3
Cocoyol	Cocoyol Cream: Cocoyol	1	5	71	1		4								82
	Unnamed Red-on-cream: Unsp			1	1			1							2
Uck	Uck Red: Uck		1	61	8	1	8	1							80
	Baki Red Incised: Baki			1			1								2
	Kitam Incised: Kitam			2											2
Sikiya-Jocote					2						1				3
Uck-Savana				7	1	1	1						3		13
Uck-Unnamed Brown-black	Kitam Incised - Unnamed Brown-black Incised			1											1
Savana	Savana Orange: Rejolla	4	79	1161	38	4	156	96	20	4	6	4	4		1576
	Savana Orange: Savana	1	15	152	16	2	25		5		3				219
	Savana Orange: Unspecified C-1			15	1					1					17
	Savana Orange: Unspecified C-2			39											39
	Savana Orange: Unspecified (Red slip)						1						1		2
	Reforma Incised: Reforma			10	13		2					2			27
	Reforma Incised: Mucnal			49	41	4	29	3	1		1			2	131
	Reforma Incised: Unspecified C-1	1	1	2											2
	Reforma Incised: Unspecified C-2			1			1								2

Table 5.16. Construction phase Plaza B/11th-B (continuation).

Group	Type-variety	Handle & Foot	Base	Body	Bowl	Small bowl	Dish	Dish bowl	Jar	Small jar	Tecomate	Spouted vessel	Censer	Vase	Total
Unnamed Bichrome	Unnamed Bichrome: Unspecified			10											10
	Unnamed Red-on-orange: Unspecified			1	1				1						3
Unnamed Black	Unnamed Black: Unspecified A		1	3					1						5
	Unnamed Black: Unspecified B			6											6
	Unnamed Black Incised: Unspecified.			3	3										6
Unnamed Brown-black	Unnamed Brown-black: Unspecified			67	1				2						70
	Unnamed Brown-black Incised: Unsp.			6											6
Jocote	Jocote Orange-brown: Jocote	72	2	1880	130	14	9		90	6	2	1	1		2207
	Chacchinic Red-on-orange-brown	2		165	4		1		2						174
	Sayab Daub			1	1		1		2						5
Joventud	Joventud Red			5			2	1							8
	Sampopero Red						2	1							3
	Black Rock Red			3			2								5
Chunhintá	Chunhintá Black			6	1	1	1			1					10
	Deprecio Incised				1										1
Hillbank				7	3		2								12
Paila				6	1				5						12
Sapote				2	1	1			5	1					10
Sierra				1			2								3
	No identified	1	1	35	7		3			1			2		50

Table 5.17. Construction phase Plaza B/12th.

Group	Type-variety	Handle & Foot	Base	Body	Bowl	Small bowl	Dish	Dish / bowl	Jar	Small jar	Tecomate	Spouted vessel	Censer	Vase	Total
Sikiya	Sikiya: Sikiya			1	1				1						2
Cocoyol	Cocoyol Cream: Cocoyol	2	1	83	7		7		1	3					104
Uck	Uck Red: Uck Baki Red Incised: Baki Kitam Incised: Kitam		2	55 1	8	1	4								70 1 1
Chi	Chi Black: Chi			2	1										3
Huetche	Huetche White			5	3	1									9
Sikiya-Jocote											1				1
Uck-Savana				8											8
Savana	Savana Orange: Rejolla	12	94	1971	31	13	97	139	25	12	1	14	3	1	2413
	Savana Orange: Savana	1	14	239	43	12	18		3	3		2			335
	Savana Orange: Unspecified C-1		1	42	2	2									47
	Savana Orange: Unspecified C-2			59	2	1				2					64
	Savana Orange: Unspecified (Red slip)			3											3
	Reforma Incised: Reforma			5	18		8								31
	Reforma Incised: Mucnal			126	100	6	64	7				4		1	322
	Reforma Incised: Unspecified C-1	7	7	1		2									3
	Reforma Incised: Unspecified C-2			3	2			1							6
	Sibun Punctated-Incised: Sibun			6	2			1				5			14
Unnamed Bichrome	Unnamed Bichrome Incised: Unspecified				1										1
	Unnamed Red-on-orange: Unspecified								1						1

Table 5.17. Construction phase Plaza B/12th (continuation).

Group	Type-variety	Handle & Foot	Base	Body	Bowl	Small bowl	Dish	Dish / bowl	Jar	Small jar	Tecomate	Spouted vessel	Censer	Vase	Total
Unnamed Bichrome	Unnamed Bichrome Incised: Unspecified			6											6
	Unnamed Black: Unspecified B			2	1				1						4
	Unnamed Black Incised: Unspecified			2	1										3
Unnamed Brown-black	Unnamed Brown-black: Unspecified			6											6
	Unnamed Brown-black Incised: Unspecified			1											1
Jocote	Jocote Orange-brown: Jocote	69	1	4611	188	56	18		128	12	2	3			5088
	Chacchinic Red-on-orange-brown			184	27		1		9						221
	Palma Daub			2											2
Joventud	Joventud Red		13	102	1		22	8							146
	Sampoperro Red		9	51		1	16	2							79
	Black Rock Red		1	2			1								4
Chunhinta	Chunhinta Black		2	46	8	1	9			1					67
	Deprecio Incised			2	3										5
Pital	Pital Cream			5			1								6
Consejo				1											1
Chicago					2		2		1						5
Quamina	Tower Hill Red-on-cream			1											1
Hillbank				2	1										2
Sapote				37	1				3						41
Sierra			1	9	3		5				1				19
Polvero				1	1										2
No identified				24	3		2		2						31

Table 5.18. Construction phase Plaza B/12th-2.

Group	Type-variety	Handle & Foot	Base	Body	Bowl	Small bowl	Dish	Dish bowl	Jar	Small jar	Tecomate	Spouted vessel	Censer	Colander	Vase	Total
Sikiya	Sikiya: Sikiya			56	1									1		58
Cocoyol	Cocoyol Cream: Cocoyol		1	81	7	4	3		1							97
	Unnamed Red-on-cream: Unspecified								1							1
Uck	Uck Red: Uck			84	2		5		1							92
	Uck Red: Unspecified (Orange)			1	1											2
	Baki Red Incised: Baki			1												1
	Kitam Incised: Kitam			1	2											3
Chi	Chi Black: Chi			3	1											4
Uck-Savana			1	7	3		1									12
Savana	Savana Orange: Rejolla	15	83	1398	38	4	132	85	24	4	2	15	1			1801
	Savana Orange: Savana	2	19	198	37	3	29		11	5	1					305
	Savana Orange: Unspecified C-1		1	49	2	1										53
	Savana Orange: Unspecified C-2		2	73	4		1		1							81
	Savana Orange: Unspecified												2			2
	Savana Orange: Unspecified (Red slip)			2												2
	Reforma Incised: Reforma			21	10		27									58
	Reforma Incised: Mucnal		8	107	37		83	6	3			2	1		4	251
	Reforma Incised: Unspecified C-1			2					1						1	4
	Reforma Incised: Unspecified C-2			2	2	1			1		1	1				8
	Sibun Punctated-Incised: Sibun			4								4				8
Unnamed Bichrome	Unnamed Bichrome: Unspecified B		1	1												2
	Unnamed Bichrome Incised: Unspecified			1	1				2							4
	Unnamed Red-on-orange: Unspecified				2					1						3

Table 5.18. Construction phase Plaza B/12th-2 (continuation).

Group	Type-variety	Handle & Foot	Base	Body	Bowl	Small bowl	Dish	Dish bowl	Jar	Small jar	Tecomate	Spouted vessel	Censer	Colander	Vase	Total
Unnamed Black	Unnamed Black: Unspecified A			5	1				1							7
	Unnamed Black: Unspecified B		1	8												9
	Unnamed Black Incised: Unspecified			2	2							1				5
Unnamed Brown-black	Unnamed Brown-black: Unspecified			10												10
	Unnamed Brown-black Incised: Unspecified			2												2
Jocote	Jocote Orange-brown: Jocote	59	2	2785	138	20	17		140	7	3	2	1			3174
	Chacchinic Red-on-orange-brown	1		190	5		2		16							214
Sayab	Sayab Daub			2	3		1		2							8
Joventud	Joventud Red		8	48	2		20	10								88
	Sampopperro Red			19	1		3									23
	Black Rock Red			3	1											4
	Pinola Creek Incised			3	1											4
Chunhintá	Chunhintá Black			20	4		3									27
	Deprecio Incised						1									1
Pital	Pital Cream			3			1									4
Consejo				6	7*		2									15
Quamina	Tower Hill Red-on-cream				2											2
Sapote				7												7
Polvero																1
	No identified		6	76	1		2		3							88

The late facet of the Kanluk phase is distinguished by a predominance of Savana Orange: Rejolla variety and Jocote Orange-brown: Jocote variety as well. These two types-variety modes constituted between 79 and 89% of the different construction-phase assemblages. The ceramic types Unnamed Brown-black, Unnamed Brown-black Incised, and Chacchinic Red-on-orange-brown also are represented in this facet, along with the Savana, C-1, and C-2 varieties of Savana Orange and the Mucnal and Reforma varieties of Reforma Incised. As in the early facet, all these type-variety modes had only a minor presence, representing less than 1% of the total assemblages. The exceptions are the Chacchinic Red-on-orange-brown, Savana Orange: Savana variety, and Reforma Incised: Mucnal variety, as they increased their presence throughout the late facet. At the beginning of the late facet, the Reforma Incised: Mucnal variety represented 2.6% of the collection, but at the end of the Kanluk phase, it totaled 5%.

The techniques of grooving, incising and horizontal fluting continued to be used to decorate Reforma Incised vessels throughout the late facet of the Kanluk phase. Nevertheless, unlike the early facet, grooves and incisions decorated different parts of the vessels such as upper, medial and basal sections of exterior walls, lips and interior rims. Some vessels exhibit a combination of either grooving and incising or fluting and incising. Most of the incisions consist of encircling lines. On occasions, however, the incisions compose geometric designs or depict the pan-Mesoamerican lightning motif. The decorative technique of chamfering also was introduced in the late facet, perhaps to create local copies of Desvario Chamfered vessels. Other vessels also exhibit parallels with others decorations from northern Belize. The human effigy bottles, for instance, share modes with the Unnamed Red Modeled types of the Joventud group at Colha, and

the chocolate pots with straps also show parallels with northern Belize vessels (Awe 1992).

In addition to the introduction of new decoration methods, some types and varieties made their appearance during the second facet of the Kanluk phase, consequently functioning as markers of this facet. The late-facet types includes Unnamed Black, Unnamed Black Incised, Unnamed Bichrome, Unnamed Bichrome Incised, Sibun Punctuated Incised, Reforma Incised: C-1 and C-2 varieties and Savana Orange: Variety unspecified (red slip). All these ceramic types had only a minor presence in their respective assemblages.

The Mamom pottery has usually been considered another marker of the late facet (e.g. Cheetham 1996), although it has a minor occurrence during the early facet. What is certain is that the import of this foreign pottery increased throughout the late facet. At the beginning of the facet, it represents less than 1% of the total assemblage, but by the end of the Kanluk phase, Joventud, Chunhinta, Pital and Sayab ceramic groups total 4%. Pottery from northern Belize also makes its appearance in the explored area by the end of the facet, but its presence is rare, representing less than 1% of the collection. I also identified Cunil-phase pottery (e.g., Uck Red: Uck, Cocoyol Cream: Cocoyol and Unnamed Red-on-buff: Variety unspecified), ranging between 2 and 4% of the assemblages.

With regard to the classes of vessels, slipped bowls and dishes predominate in the assemblage of the late-facet construction phases, constituting between 50 and 60% of the diagnostic sherds. There are, however, significant differences in the other classes of

vessels, the presence of ritual pottery, and import of foreign material, which merit a more detailed description.

Vessel fragments used to build the rectangular platform Plaza B/9th and cover the apsidal platform Plaza B/8th consist mainly of slipped bowls and dishes (n=130, 60.5%). Unslipped jars are present but in limited number (N=33, 15.3%), unslipped bowls are rare as well (n=22, 10.2%). Miniature bowls and jars also are represented in the assemblage (n=15, 6.9%). If the assemblage found in this area of Plaza B does indeed reflect the specific activities that took place here, it is safe to say that that food-serving was an important activity practiced by the ancient inhabitants of this area of Plaza B. Food processing and cooking also were carried out, although they were not as significant. The pottery forms suggest that storage of food and liquids was rare. Miniature bowls and jars could have been used in ceremonies, such as ritual offerings (e.g., Robertson 1983).

The ceramic inventory observed beneath Plaza B/10th construction phase is roughly similar with slipped bowls and dishes constituting a great part of the collection (n=241, 55.7%). Unslipped dishes are extremely rare. Robertson (1983) has suggested that at Cerros, unslipped dishes were utilized by non-elite to serve food, while elite groups employed slipped serving vessels. If this is also true for Cahal Pech during the late Kanluk phase, then the near absence of unslipped dishes and the predominance of slipped food-serving vessels could indicate the status of the people who occupied the Plaza B/9th platform and its predecessors. Bowls continued composing most of the unslipped inventory of the assemblage (n=91, 21%), while jars still were rare (n=33, 7.6%). Again, this pattern indicates the practice of food-processing and cooking, which were more significant than in the previous construction phase, but the absence of storage. The

performance of ritual activities involving food and beverage offerings also is evidenced by miniature jars and bowls (n=43, 9.9%). In addition, a few spouted vessels are observed (n=4, 0.9%). Spouted vessels, also known as chocolate pots across the Maya lowlands, are considered diagnostic of the Middle and Late Preclassic. These specialized containers may have been used to prepare and consume chocolate-based beverages (Powis et al. 2002). Again, the chocolate pots with strap handles shared close parallels to northern Belizean vessels.

The pottery used for construction of the key-hole shaped platform included few diagnostic sherds (n=47), but slipped dishes and bowls predominate in the assemblage (n=21, 44.7%). Unslipped jars, bowls, and dishes are once again rare (n=13, 27.6%). Ritual ceramic include a few miniature bowls and jars (N=9, 19.1%) as well as two halved dishes of Savana Orange: Rejolla variety placed beneath the foundation of the key-hole platform. According to Brown (2007:17), ceramic vessels could have been intentionally split into halves during the dedicatory ritual performed to consecrate new buildings (Brown 2007:17; see also Pagliario et al. 2003).

East of the structure, in the area where the rectangular platform Plaza B/11th-B would be constructed, the situation was somewhat different. Slipped bowls and dishes still constitute a great part of the inventory (n=475, 56.3%), indicating that food-serving was still as an important activity performed by the ancient inhabitants of this area of Plaza B. Unslipped bowls continued to be somewhat significant in the inventory (n=139, 16.5%) and, unlike previous construction phases, there is a greater presence of unslipped jars (n=104, 12.3%). Slipped and unslipped *tecomates* also were used but their presence is limited (n=14, 1.7%). Based on this data, it is likely that food-processing, cooking, and

storage activities were more important at this time, but that they still played a minor role in comparison to food serving. In addition to the food-related activities, pottery suggests the performance of ritual activities since specialized vessels like miniature bowls and jars, spouted vessels and censers (n=59, 7%) were identified.

Material recovered beneath the Plaza B/12th construction phase—which covered the key-shaped platform Plaza B/11-A, rectangular platform Plaza B/11-B and the oval feature Plaza B/11-C—exhibit a similar pattern of classes of vessels and, consequently, activities. Food-processing, cooking, and storage were carried out. Nevertheless, those activities still played a minor role in comparison to food serving. Ritual activities involving pottery also were performed and, in fact, increased in importance since miniature vessels, censers, and spouted vessels represent 10.2% of the diagnostic sherds. Interestingly, there is no difference in the vessel forms and activities between the areas where the key-shaped platform Plaza B/11-A and rectangular platform Plaza B/11-B were located.

Finally, I observed a higher percentage of foreign pottery associated with these constructions. For instance, pottery coming from northern Belize was only associated with these constructions and the presence of Mamom ceramic was higher than in earlier construction phases. Nevertheless, the key-shaped platform Plaza B/11-A yielded a larger amount of Mamom pottery (n=306, 4%) than the rectangular platform Plaza B/11-B (n=159, 2.4%). The rectangular platform, however, had the higher percentage of Savana-paste vessels decorated with grooves, incisions and punctuations. Vessels decorated with incised lightning motifs and modeled anthropomorphic or zoomorphic designs are only associated with the key-hole shaped building and the rectangular platform.

5.6 SUMMARY

The classification of the ceramic material based on the type-variety and modal approaches has helped me date each structure beneath Plaza B. The assigned the different construction phases to the Cunil phase (Plaza B/1st-Plaza B/4th), and to the early facet (Plaza B/5th-Plaza B/8th) and the late facet of the Kanluk phase (Plaza B/9th-Plaza B/12th). Likewise, my ceramic analysis sheds light on some activities conducted at or near the southern section of Plaza B throughout the Middle Preclassic period. I interpret the excavated contexts as construction fill. Consequently, it could be that the materials deposited during these building events were brought from elsewhere. Nonetheless, I believe that the cultural material used as part of the construction fill was the remains of activities performed at the constructions that once covered.

The earliest constructions provided a small amount of diagnostic sherds that made difficult the assessment of the pottery-related activities. Despite this, I established that the Middle Preclassic pottery was used for serving, processing, cooking, and storing food and liquids. In addition, some of the ceramic containers were likely used during the performance of rituals. For instance, miniature vessels could have been used to make offerings to the gods or ancestors. Although there is evidence to suggest that ritual performance was conducted during the entire Middle Preclassic, food-serving was the principal pottery-related activity during this period. The relative importance of processing, cooking, and storing fluctuated through time.

The patterns of vessel forms can be used to assess the function of social spaces. Accordingly, the structures that counted with a significant amount of vessels utilized for processing, cooking, and storing food and liquids likely held a domestic function. The

limited evidence for processing, cooking, and storing can be interpreted in two manners. On the one hand, an unusual presence of food-serving vessels usually is interpreted as evidence of feasting behavior (Hayden 2001:40-41; LeCount 1996). This hypothesis can be supported by the occurrence of slipped vessels decorated vessels with incisions, grooves, fillets, and other decorations, and specialized containers, such as miniature pottery and spouted vessels. On the other hand, the relative importance of serving vessels in comparison to pottery used to process, cook, and store foods could be related to the sociopolitical position of the household that consumed the pottery. This hypothesis is supported by the presence of foreign vessels and the high occurrence of slipped vessels (see Robertson 1983). Thus, the household could have been a privileged group, with the processing, cooking, and storing of food carried out elsewhere. Nevertheless, in order to corroborate any of these hypotheses, we need to assess other material evidence and find other archaeological signatures of either feasting behavior or other domestic activities.

CHAPTER 6.
BETWEEN THE LOCAL AND THE FOREIGN: THE ACQUISITION AND USE
OF CHIPPED AND GROUND STONE ARTIFACTS

6.1 INTRODUCTION

Over the last four decades, lithic studies have become an important area of research within Maya archaeology, making important contributions to our understanding of precolumbian social, political, and economic systems—particularly the political economies in which lithic artifacts were immersed (e.g., Clark and Gaxiola 1989; Hester and Hammond 1976; Hester and Shafer 1991; Hruby et al. 2010; Rovner and Lewenstein 1997). The reason for this is that the pre-Columbian Maya relied heavily on a variety of lithic resources to manufacture goods that facilitated the normal functioning of everyday life (Barret 2004, 2010).

In the archaeological literature, certain lithic resources have been regarded as ‘critical’, meaning that there were not alternative materials (Barret 2004). Although some materials were important for tool production, the premise that it was not possible to replace them must be seen as a fallacy, because pre-Columbian Maya households usually managed to find locally available resources to meet their daily needs. For instance, chert could have been a critical resource because it was the main material used to fabricate implements to cut, scrape, and perforate. Nonetheless, when this raw material was not accessible, other resources were used to create similar tools. In the chert-free zone defined by Hearth and Fedick (2010: Figure 6.1), for instance, conch was modified to create celts and dolomitic limestone was used to manufacture expedient cutting tools.

It is true, nevertheless, that certain lithic raw materials were favored over others to manufacture prestigious ornaments and tools. For instance, on occasion, granite and basalt were preferred for grinding tools, even though limestone was locally available. These valued lithic resources (in the form of raw materials, tools, and ornaments) could have been seen as ‘strategic’ in the sense that a limited number of individuals had the means to control their access to gain power over others. Lithic raw materials could acquire this strategic role when the technological and ritual skills needed to transform them into tools and prestigious goods were restricted. Raw material rarity also could have been an important factor that caused the goods to acquire a strategic value.

In general, raw materials suitable for fabricating stone tools and prestigious goods are finitely distributed across the lowlands. Nevertheless, some lithic resources were relatively more accessible than others in pre-Columbian times. For instance, although their quality varies from outcrop to outcrop, chert nodules are almost ubiquitous across the southern lowlands. Consequently, this particular lithic resource was locally available to many communities, either through direct access or local exchange. In contrast, other lithic raw material outcrops (e.g., granite, slate, basalt, obsidian, pyrite, among others) are confined to specific areas and, in order to acquire them, many communities needed to participate in broader exchange networks.

Based on the distance from their point of geological origin, the lithic raw materials found at a given site can be divided into three groups, each group entailing different exchange mechanisms (Marcus 1983:477-479; Sidrys 1983). Group 1 includes geological materials locally available—within a 50-km area—that can be obtained directly or through local exchange. In the Belize Valley, Group 1 materials include stones

like chert, river cobble, and sandstone. Group 2 is composed of geological materials accessible within the region, extending from 50 to 400 km. In western Belize, these materials include granite and slate from the Maya Mountains of southern Belize, lithic resources that were likely acquired through regional exchange networks. Group 3 consists of geological materials that are unobtainable regionally since their outcrops are located more than 400 km away. Therefore, they can only be acquired by participating, either directly or indirectly, in long-distance exchange networks. In the Belize Valley, these materials include obsidian and basalt. The presence alone of non-local goods does not indicate differences in power relationships. Nevertheless, differential access to such goods and raw materials can be used to investigate social differentiation.

In this chapter, I discuss the Middle Preclassic lithic assemblages recovered from beneath SW Plaza B in order to shed light on the economic and political systems in which these artifacts were immersed. The analysis is focused on identifying (1) the lithic resources present in the SW Plaza B collection, (2) the geological source and group of each lithic raw material, (3) the form in which imported materials were procured and, to the extent possible, (4) what lithic activities were carried out by the people that occupied the area under study. In order to achieve this, I first classified the SW Plaza B lithic assemblage into categories based on raw material (e.g., chert, obsidian, limestone, green stone, slate, granite, and quartz) and type of industry (e.g., chipped stone and ground and polished stone)¹¹. I analyzed all chipped stone following a technological typology, while I classified the ground and polished stones based on morphological types. In order to

¹¹ Following Sheets (1975), an industry refers to a set of artifacts manufactured with the same raw material and following the same reduction sequence.

establish the relative dating of lithic artifacts, I depended on associated ceramics (see Chapter 5). Again, all the lithic materials came from construction fill, rather than activity areas. Nevertheless, artifacts from secondary contexts still provide valuable information about the lithic activities carried out in the general area.

6.2 CHIPPED STONE

In the SW Plaza B assemblage, the chipped stone industry includes artifacts made of chert and obsidian. I analyzed these artifacts following a technological typology based on non-metric attributes that assign artifacts to a particular reduction sequence or industry: prismatic blade, percussion blade, bifacial / unifacial retouch, casual percussion, and bipolar percussion (Aoyama 1999; Braswell 2000; Clark 1988; Clark and Bryant 1997; Sheets 1975). Artifacts were classified into technological types and subtypes, which are considered diagnostic of a particular lithic industry. Nonetheless, several non-diagnostic forms may cross-cut some or all industries (e.g., chunk and shatter). Non-diagnostic (i.e., condition and percentage of cortex) and metric attributes (i.e., length, width, thickness and, weight) also were recorded during the analysis.

6.2.1 Chert

Chert is defined as a sedimentary rock composed mainly of fine-grained silica that displays a cryptocrystalline structure (Barrett 2004; Espinosa et al. 2001:69; Luedtke 1992). Because of this structure, chert breaks without following any natural plane of separation, resulting in conchoidal fractures and edges that are sharp and resilient (Barrett 2004). Although the formation process of this rock is not completely understood, it

usually forms as secondary deposits in rocks composed mainly of calcium carbonate or limestone (Whittaker 1994:70). The Yucatan Peninsula and part of the southern lowlands consists of a massive limestone platform, so cryptocrystalline silica-rich rocks are widely but intermittently distributed across the lowlands (Barret 2004; Luedtke 1992; Potter 1993:278).

On account of its relative accessibility and its conchoidal fracture qualities, chert was one of the lithic resources most universally exploited by the precolumbian Maya to manufacture flaked stone tools (Rovner and Lewenstein 1997:1). Nevertheless, this exploitation was limited by outcrop variability. Variability in raw material quantity refers to either the actual presence or the ultimate extractability of resources. Variability also is associated with the quality of materials since some outcrops are rich in high-quality stone (e.g., northern Belize chert-bearing zone), while other zones contain deficient deposits with little or no quality resources (e.g., the northern lowlands; Barrett 2010:58; Dahlin et al. 2010; Hearth and Fedick 2010). In the Belize Valley, chert is readily available in terrace river gravels and in nodule-bearing outcrops located in the limestone foothills and uplands (Ford and Olson 1989:194). Although these stones are of a medium quality, they are suitable for manufacturing tools. In fact, the upper Belize River Valley has provided evidence of chert quarrying and workshops focused on biface production. The largest of these quarries is Yaxox, located about 2.5 km north of the river Yaxox (Ford and Olson 1989).

Due to this relative accessibility, the ancient inhabitants of Cahal Pech manufactured their chipped stone tools using chert. During the excavations of the Middle Preclassic contexts beneath Plaza B, I recovered a total of 5,157 chert artifacts, which

represent four lithic industries—casual flakes, percussion blades, burins, and bifacial / unifacial retouch (Table 6.1).

Table 6. 1. Industries, technological types and subtypes of chert artifacts from Middle Preclassic contexts in SW Plaza B.

INDUSTRY	TYPE	SUBTYPE	SUPPORT	FREQUENCY
Bifacial / Unifacial Retouch	Biface	Celt	Nodule	1
		Scraper		4
				3
	Large biface	Celt	Macroblade	1
		Dagger		1
		Hafted blade		1
		Stemmed macroblade		1
		Macroblade		2
	Preform	Celt	Flake	1
			Flake	3
	Uniface	Celt	Casual flake	4
		Drill	Blade	7
		Microdrill	Burin spall	255
		Scraper	Flake	8
			Flake	5
			Bifacial flake	24
Burin	Burin spall	11		
Percussion Blade	Blade	107		
Casual Flake	Casual flake		378	
	Core		10	
	Decortication flake		363	
	Flake		2793	
	Macroflake		2	
Unknown	Chunk		1033	
	Shatter		117	
	Pot-lid flake		22	
TOTAL				5157

The presence of decortication flakes, cores, and casual flakes suggests that the inhabitants of SW Plaza B were manufacturing casual flakes, although the intensity of this activity was low. Casual flakes were likely fabricated as needed. It is likely that the

nodules used to produce these expedient tools came from the Macal River banks or from nodule-bearing outcrops close to the site. Unlike the casual flake industry, there is no evidence that percussion blades and burin spalls were produced in SW Plaza B. These industries were only represented by their final products. Neither blade cores nor burinated blades were present in the chert collection.

Despite the presence of bifacial reduction flakes in the collection, it is not possible to determine whether bifaces or unifaces were produced in SW Plaza B. In order to affirm the presence of this activity, beside the bifacial thinning flakes, it would be necessary to find significant numbers of preforms, broken tools, knapping errors, cores, and blanks. If any bifacial/unifacial tools were manufactured, it is likely that this activity was focused on the production of unifacial tools using casual flakes, blades, and burin spalls as blanks. In the SW Plaza B collection, there were slightly modified casual flakes that were identified as preforms. Casual flakes were unifacially retouched to obtain celts and scrapers. Modification of casual flakes to create specialized tools was a common activity across the lowlands (e.g., McAnany and Peterson 2004; Moholy-Nagy 1991; Peniche May 2004, 2007a, 2007b; Willey et al. 1965).

Although percussion blades and casual flakes could have been used without modification, some blades and flakes were retouched on their distal ends to turn them into drills (Figure 6.1). Drills on blades or flakes have been reported in other sites across the lowlands (e.g., Caracol, Cerros, Cuello, K'axob and Xunantunich in the eastern periphery and Dzibilchaltun, Rio Bec, and Sihó in the northern lowlands), where they have been associated with the manufacture of shell and slate ornaments (J. Braswell

2010; McAnany and Peterson 2004; McSwain 1991; Mitchum 1991; Pope 1994; Rovner and Lewenstein 1997).



Figure 6.1. Drill on flake.

Burin spalls also were marginally modified to fabricate uni-tipped or bi-tipped microdrills that range between 15.1 to 60.7 mm in length (Figure 6.2). The microdrill tips usually showed “alternate, opposite retouch [sic] resulting from rotary motions” (Hohmann 2002:133), indicating that they were used for drilling. Most of the microdrills from the SW Plaza B assemblage exhibited extensive retouch on one or more lateral edges. According to Hohmann (2002), this retouch indicates that these specialized tools were modified to fit a haft, creating an efficient composite tool.

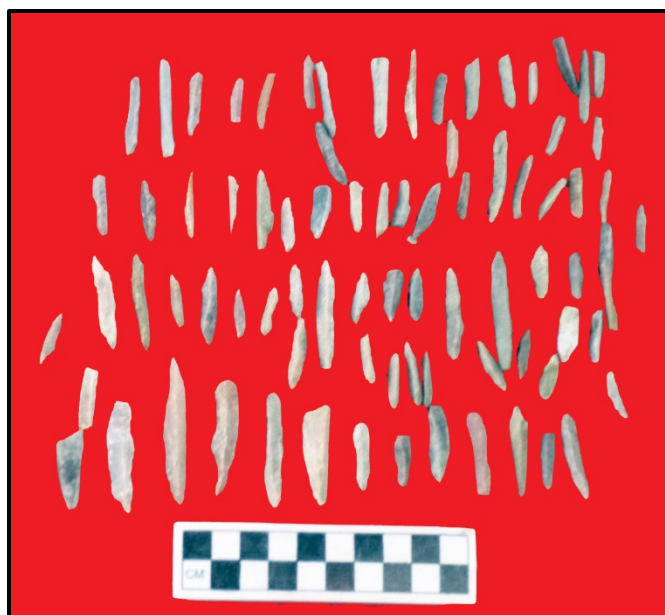


Figure 6.2. Microdrills manufactured on burin spalls.

Microdrills created from burin spalls have been reported in other Middle Preclassic assemblages from northern Belize (e.g., Colhá and Labpek) and the Belize Valley (e.g., Blackman Eddy, Pacbitun, and the Cas Pek and Tolok groups in the Cahal Pech periphery; Hofman 2002; Potter 1991; Powis 1996; Shafer and Hester 1983). At least one site in northern Belize, Labpek, has been identified as a producer of these tools (Hester and Shafer 1984). These specialized tools were almost exclusively manufactured during the Middle Preclassic and have been identified as part of the toolkit to manufacture shell beads (Hofman 2002; Powis 2012; Chapter 8).

Aside from one bifacial scraper that could have been locally produced by modifying a nodule, there is no evidence of biface manufacture in the SW Plaza B assemblage. In fact, the biface sample is small, consisting of eight celts, scrapers, and tool fragments. The quantity of large bifaces also is limited. With the exception of a general utility tool made from a low-quality material, these formal tools were most likely

imported from other regions. I suspect that most large bifaces were knapped of material coming from the chert-bearing zone located in northern Belize (Figures 6.3 and 6.4). Tools made of fine-grained chert from northern Belize were exchanged over hundreds of kilometers during the Middle Preclassic. These tools have been reported in northern Belize sites that lacked access to high-quality chert (Cuello and K'axob), western Belize (Blackman Eddy), and the northern lowlands (Ciudad Caucel; McAnany and Ebersone 2004; McSwain 1991; Peniche May 2007b; Yacubic 2006).



Figure 6.3. General utility tool made of local chert.



Figure 6.4. Stemmed macroblade that was likely imported from northern Belize.

With regard to temporal patterns in lithic activities, chert artifacts were arrayed across the construction phases (Table 6.2; Figures 6.5-6.6). Chert assemblages displayed a similar pattern through the Cunil to the first part of the late Kanluk construction phases (Plaza B/2nd to Plaza B/10th). A change occurred in the contexts beneath Plaza B/11th, Plaza B/12th, and Plaza B/13th construction phases, associated with the rectangular platform Plaza B/10th, the architectural group Plaza B/11th, and the cobbled platform Plaza B/12th, respectively.

Table 6. 2. Tool types and raw material by construction phase.

Construction phase	Industry	Type	Subtype	N	N/sherds
Plaza B/2 nd	Casual flake	Casual flake		1	
		Flake		7	90
		Decortication flake		1	
	Unifacial/bifacial	Bifacial flake		1	10
Plaza B/3 rd	Casual flake	Casual flake		8	
		Flake		93	203.6
		Decortication flake		11	
	Percussion blade	Decortication blade		2	2.4
	Unifacial/bifacial	Bifacial flake		1	
		Uniface	Celt	1	2.4
	Unknown	Chunk		42	
		Pot-lid flake		2	63.9
		Shatter		9	
Plaza B/4 th	Casual flake	Casual flake		18	
		Flake		84	79.3
		Decortication flake		13	
	Unifacial/bifacial	Bifacial flake		1	
		Uniface		2	2.1
	Unknown	Chunk		41	
		Pot-lid flake		3	36.6
		Shatter		9	
Plaza B/5 th	Casual flake	Casual flake		23	
		Flake		67	27.9
		Decortication flake		12	
	Percussion blade	Decortication blade		1	0.3
	Unifacial/bifacial	Uniface	Celt	1	0.3
	Unknown	Chunk		32	
		Pot-lid flake		1	9.7
		Shatter		3	
Plaza B/6 th	Casual flake	Casual flake		2	
		Flake		5	21.5
		Decortication flake		27	
	Unifacial/bifacial	Preform		1	0.6
	Unknown	Chunk		15	
		Pot-lid flake		4	12
Plaza B/7 th	Casual flake	Casual flake		1	
		Flake		36	414.5
		Decortication flake		7	
	Percussion blade	Decortication blade		1	0.3
	Unifacial/bifacial	Uniface	Celt	4	1.3
	Unknown	Chunk		14	
		Pot-lid flake		1	4.9

Table 6. 3. Tool types and raw material by construction phase (continuation).

Construction phase	Industry	Type	Subtype	N	N/sherds
Plaza B/8 nd	Casual flake	Casual flake		13	
		Flake		127	15.5
		Decortication flake		7	
	Percussion blade	Blade		2	0.2
	Unifacial/bifacial	Biface		1	
		Uniface	Microdrill	1	0.3
	Unknown	Chunk		53	
		Shatter		7	6.3
Plaza B/9 th	Casual flake	Casual flake		10	
		Flake		187	11.3
		Decortication flake		24	
	Percussion blade	Blade		2	0.1
	Unknown	Chunk		46	
		Pot-lid flake		1	2.8
		Shatter		8	
Plaza B/10 th	Casual flake	Casual flake		23	
		Flake		235	8
		Decortication flake		34	
	Percussion blade	Blade		5	0.1
	Unifacial/bifacial	Bifacial flake		4	
		Uniface	Celt	1	
			Drill	1	0.4
			Microdrill	4	
		Scraper	3		
Unknown	Chunk		81		
	Pot-lid flake		5	2.7	
		Shatter		11	
Plaza B/11 th A	Casual flake	Casual flake		2	
		Core		1	
		Flake		67	1.4
		Decortication flake		5	
	Percussion blade	Blade		2	0.03
	Unifacial/bifacial	Bifacial flake		6	
		Uniface	Drill	2	0.2
		Microdrill	1		
Unknown	Chunk		35		
	Pot-lid flake		1	0.8	
	Shatter		6		

Table 6. 4. Tool types and raw material by construction phase (continuation).

Construction phase	Industry	Type	Subtype	N	N/sherds
Plaza B/11 th -B	Burin			2	0.03
	Casual flake	Casual flake		72	10.5
		Flake		436	
		Decortication flake		67	
	Percussion blade	Blade		12	0.2
	Unifacial/bifacial	Biface	Scraper	1	0.5
			Celt	1	
		Large biface	Hafted blade	1	
			Stemmed macroblade	1	
		Preform	Celt	1	
		Uniface	Drill	1	
			Microdrill	20	
			Scraper	1	
				2	
	Unknown	Chunk		147	2.7
		Shatter		10	
Plaza B/11 th -C	Casual flake	Casual flake		2	0.2
		Flake		9	
Plaza B/1 2 th	Casual flake	Casual flake		83	1.2
		Core		4	
		Flake		509	
		Decortication flake		60	
	Percussion blade	Blade		27	0.2
	Unifacial/bifacial	Biface		1	0.5
		Bifacial flake		7	
		Large biface	Dagger	1	
		Uniface	Celt	1	
			Drill	2	
			Microdrill	64	
			Scraper	1	
	Unknown	Chunk		195	1.5
		Pot-lid flake		3	
		Shatter		36	

Table 6. 5. Tool types and raw material by construction phase (continuation).

Construction phase	Industry	Type	Subtype	N	N/sherds
Plaza B/12 th -2	Burin			9	0.06
	Casual flake	Casual flake		97	5.9
		Core		4	
		Flake		747	
		Decortication flake		86	
		Macroflake		2	
	Percussion blade	Blade		50	0.3
	Unifacial/bifacial	Biface		1	1.1
		Large biface		1	
		Preform		1	
		Uniface	Drill	1	
			Microdrill	165	
Unknown	Chunk		248	1.7	
	Pot-lid flake		1		
	Shatter		13		
Plaza B/13 th	Casual flake	Casual flake		24	7.6
		Core		1	
		Flake		162	
		Decortication flake		31	
	Percussion blade	Blade		3	0.1
	Unifacial/bifacial	Biface	Scrapper	3	0.2
		Preform		1	
		Uniface	Scraper	2	
				1	
Unknown	Chunk		84	3.1	
	Shatter		5		
TOTAL				5157	

The presence of casual and decortication flakes indicates the presence of casual flake production. Some of these expedient tools were marginally retouched to create scrapers and celts. The importance of this industry seems to be high during the Cunil phase, decreasing through the Kanluk phase (Figure 6.5). Nevertheless, the dominance of the casual flake industry during the Cunil phase could be a consequence of low ceramic production. Percussion blades also were present beginning in these early construction phases. Nevertheless, based on their raw and relative numbers the importance of this industry was low. The same can be said about the unifacial/bifacial industry (Figure 6.6).

A few drills on blades and microdrills on burin spalls appeared in the construction fill of Plaza B/8th and Plaza B/10th.

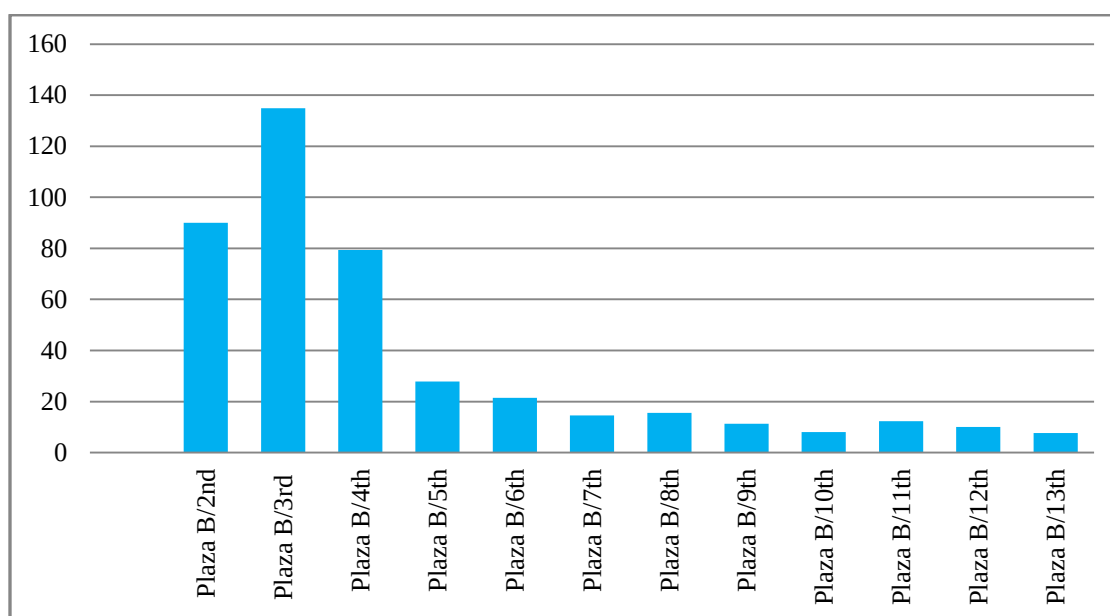


Figure 6.5. Percentages by construction phase of the casual flake industry based on the number of sherds.

During the last part of the Kanluk phase, the behavior of the casual flake and percussion blades industries did not exhibit changes. The expedient tools continued being manufactured on an ad hoc basis. They also continued being marginally modified to obtain celts and scrapers. In contrast, the bifacial/unifacial tool industry showed interesting changes. The contexts associated with the rectangular platform Plaza B/10th and the architectural group Plaza B/11th yielded large bifaces made from chert that appears to be from the chert-bearing zone of northern Belize (Table 6.2). These artifacts indicated that inhabitants of SW Plaza B of Cahal Pech participated in regional exchange network. Interestingly, this is the time in which northern Belizean pottery also appeared in the ceramic repertoire (see Chapter 5).

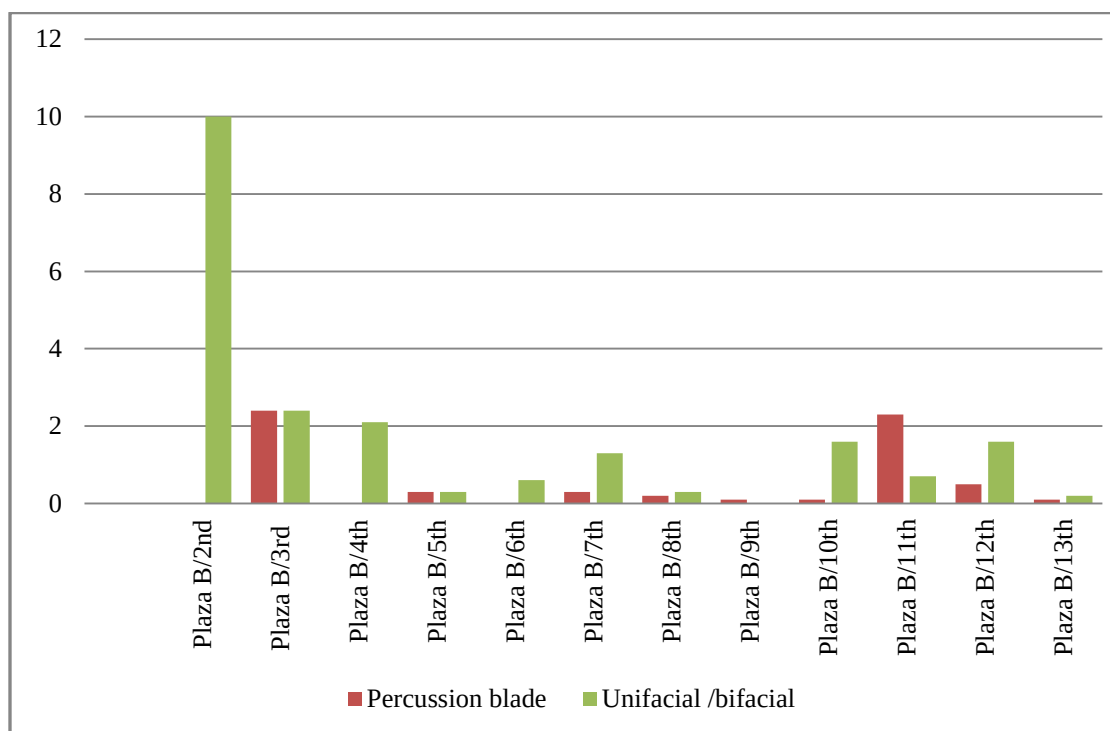


Figure 6.6. Percentages by construction phase of the percussion blade and unifacial/bifacial industries relative to the number of sherds.

In addition, the number of microdrills made of modified burin spalls increased through the last two construction phases. The Plaza B/11th construction fill yielded 21 microdrills, while in the following phase, the number of these micro tools increased to 229. If these tools were indeed associated with shell bead manufacture, this pattern may suggest that shell crafting increased in importance at the end of the Middle Preclassic (see Chapter 8). It is worth mentioning that most of the microdrills were associated with the rectangular platform Plaza B/11th-B. Both large bifaces and microdrills disappear from the inventory of the cobbled platform Plaza B/12th.

Unfortunately, chert collections from previous research at Cahal Pech have not been analyzed following a technological typology. Consequently, it is not possible to

compare the patterns yielded by the SW Plaza B collection with other areas in the acropolis and the periphery. The only information available is regarding the formal tools recovered from Plaza B excavations conducted by Garber and colleagues (see Horn 2015:307-326; Table 6.3).

Table 6.3. Temporal distribution of chert artifacts from Plaza B recovered by the BVAP (Horn 2015).

Phase	Area	Industry	Type	Subtype	N
IV	Northern	Blade	Blade		1
		Uniface/biface	Uniface	Celt	2
			Drill		120
	Central	Blade	Blade		1
		Uniface/biface	Drill		106
	Southern	Blade	Blade		2
		Uniface/biface	Biface	1	
	Unspecified		Drill		82
III	Northern		Drill		2
	Southern		Drill		2
II	Southern		Drill		1
0	Southern	Uniface/biface	Biface	General utility	1

These formal tools included unifaces (n=2), biface fragments (n=2), a general utility biface, (n=1), blades (n=3), drills on blades (n=8), and microdrills (n=300). Most of the formal tools came from Horn's Phase IV contexts dating to the early-late Kanluk phase. The exceptions are a general utility biface recovered in the Cunil occupation in the southern area, and five drills from early Kanluk deposits in the northern (n=2) and southern areas (n=3). The spatial contexts of the microdrills provide valuable information. 83 microdrills were recovered in refuse associated with the northern group, indicating that this group also may have been involved in the manufacture of shell ornaments during the late facet of the Kanluk phase. Most of the microdrills (n=106), however, were discovered in midden deposits near the center of Plaza B. While most of

the tools were locally produced, it is likely that the biface fragments were obtained from northern Belize as they were manufactured using macroblades. This is not surprising as exchange with northern Belize increased during the late Kanluk.

6.2.2 Obsidian

Obsidian is a volcanic glass that has been intensively studied by archaeologists. Taking advantage of the material characteristics of this volcanic glass (i.e., it contains trace elements whose proportion is unique to each source) and employing different sourcing methods (e.g., neutron activation analysis, inductively coupled plasma mass spectroscopy, and x-ray fluorescence spectrophotometry), archaeologists have been able to investigate the movements of geologically distinct obsidian raw material from its source to its final point of consumption (Aoyama 2014; Braswell et al. 2000; Brown et al. 2004; Dreiss and Brown 1989; Ebert et al. 2014; Glascock et al. 1998; Hammond 1982; Hirth et al. 2013; Moholy-Nagy & Nelson 1987; Nelson 1985, 2004; Shults 2012). In addition, the crafting technique of this lithic material is subtractive and its physical qualities allow for conchoidal fracturing. Consequently, artifacts from nearly every stage of manufacture can be represented in the archaeological record, enabling us to determine how these artifacts were crafted and procured at any specific time and space (e.g., Clark and Bryant 1997; Crasborn Chavarría 2010). Sourcing techniques and technological typologies, therefore, help us advance in our knowledge about the economic and political systems in which obsidian artifacts were immersed and how these systems changed in space and time (e.g., Aoyama 2010; Clark 1987).

In Mesoamerica, natural deposits of obsidian are only found in the mountains of central and west Mexico and Guatemala. It does not occur naturally in the sedimentary Maya lowlands (Braswell and Glascock 2010:119). Consequently, the pre-Columbian lowland Maya obtained this volcanic glass through long-distance exchange networks, whose properties certainly varied in space and time (e.g., mechanisms, trade routes, and exchanged forms).

It has been proposed that, during the Middle Preclassic period, Maya lowlands communities imported obsidian mainly from the Rio Pixcaya or San Martín Jilotepeque (SMJ) outcrops, located in southern Guatemalan highlands (Braswell 2000; Brown et al. 2004; Ford et al. 1994; McAnany 2004; McSwain 1991; Moholy-Nagy and Nelson 1990; Nelson 1989; Rice 1984). In most of the sites, the presence of El Chayal (CHY) obsidian was limited during this early time, even though its deposits were close to the SMJ outcrop. It has been hypothesized that the low presence of (CHY) obsidian in the Maya lowlands was because this raw material was being controlled by the Early and Middle Preclassic inhabitants of coastal Chiapas (Nelson 1985).

The form in which SMJ obsidian was procured changed throughout the Middle Preclassic. During the early part of the Middle Preclassic, the obsidian was most likely imported as unmodified nodules or rudely shaped-spalls that were crafted into flakes by means of direct percussion or bipolar percussion (Aoyama 2010; Clark 1987:261). During the late Middle Preclassic, prismatic blade technology was adopted, although this process was neither uniform nor rapid (e.g., Aoyama 2010), suggesting that the adoption of blade technology was not due solely to the technological benefits of this specialized tool (Clark 1987). Clark (1987; see also Aoyama 2010; Jackson and Love 1991) has

argued that the implementation of blade technology was a sociopolitical process linked to the development of sociopolitical complexity. Prismatic blade production was likely sponsored by local chieftains as it required some degree of coordination between specialists, regulation of regional and long-distance exchange, and called for sufficient resources to finance the technology (Clark 1987:273).

Data from the Belize Valley sites agree with the models of procurement and the flake-prismatic blade sequence mentioned above (Awe and Healy 1994; Brown et al. 2004; Kersey 2006; Yacubic 2006). For instance, obsidian recovered at Blackman Eddy (Yacubic 2006) and Pacbitun (Healy 1990) exhibited similar patterns regarding obsidian source. The obsidian collection yielded by Structure B-4 at Cahal Pech also corroborates the fact that imported obsidian came mainly from SMJ outcrops during the Middle Preclassic (Table 6.4; Awe and Healy 1994; but see Kersey 2006). This material was traded into Belize from the southwest (Dreiss and Brown 1989:83). Obsidian from CHY and Ixtepeque (IXT) also were acquired beginning in Cunil times (Kersey 2006).

Table 6. 4. Diachronic distribution of Middle Preclassic obsidian artifacts recovered at Structure B-4, Cahal Pech (modified from Awe and Healy 1994:198).

Phase	Construction phase	Flakes from spall cores	Prismatic blades
Cunil	1 st	1	
(1000-850)	3 rd	27	
Early Kanluk	6 th	1	
(850-650BC)	7 th		2
Late Kanluk	8 th		3
(650-350BC)			
TOTAL		29	5

Based on the presence of cortex on the dorsal side of some flakes, it has been suggested that, during the Cunil and early facet of the Kanluk phase, Cahal Pech

inhabitants obtained obsidian spalls with the goal of manufacturing casual flakes (Awe and Healy 1994). Nevertheless, there is no evidence of by-products that corroborate this hypothesis. The geological source of these flakes seems to be located in the CHY deposits (Kersey 2006). According to Awe and Healy (1994), the prismatic blades were introduced at Cahal Pech at the beginning of the second facet of the Kanluk phase. This pattern is confirmed by data recovered in the Plaza B excavations conducted by Garber and colleagues (Horn 2015:326-336; Table 6.5).

Table 6. 5. Temporal and spatial distribution of obsidian artifacts from Plaza B, Cas Pek and Tolok (Cheetham 1996; Horn 2015; Lee and Awe 1995; Powis 1996, Powis and Hohman 1995; Sunahara and Awe 1994).

Phase	Group	Structure/area	Flake	Prismatic blade	Blade core	Total
Cunil	Plaza B	Unit 3	1			1
		Trench, northern area	1			1
		Structure B-4	28			28
Early Kanluk	Plaza B	Unit 4 & 8		1		1
		Trench, northern area	1			1
		Trench, southern area	3			3
		Structure B-4	1			1
Early-Late Kanluk	Plaza B	Trench, northern area	19	21		43
		Trench, central area	2	1		3
		Trench, southern area	2		1	
		Trench		8		8
Late Kanluk	Plaza B	Unit 10	1			1
		Structure B-4		5		5
	Tolok	Structure 1, midden		7		7
		Structure 14	5	35		40
		Structure 15		1		1
	Cas Pek	Structure 1		2		2
		Str. A	1	18		19
			65	99	1	165

Evidence from Blackman Eddy, in contrast, suggests that prismatic blades were used in the Belize Valley earlier, since excavations of Structure B-1 yielded prismatic

blades associated with Kanocha contexts (1100/1000-900 B.C.; Kersey 2006:36). These dissimilarities in obsidian procurement between Cahal Pech and Blackman Eddy during the early Middle Preclassic could reflect differential access to local redistribution or participation in different exchange networks (Kersey 2006:37). So far, there is no evidence of blade manufacture at Blackman Eddy, indicating that its inhabitants obtained prismatic blades as finished artifacts.

Structure B-4 of Cahal Pech did not provide evidence of by-products or polyhedral cores that suggest blade production. Nevertheless, polyhedral core recovered at the Cas Peck group and the southern group of Plaza B indicates that prismatic blades were crafted in the site (Awe and Healy 1994; Horn 2015), perhaps by itinerant crafters. The Tolok group also yielded a significant amount of obsidian blades, as did Cas Pek (Table 6.4) (Cheetham et al. 1993a; Powis 1994, 1996). Even though the Cas Pek and Tolok groups had structures serving residential functions, apparently, Tolok households had a relatively better access to this foreign material. The northern group in Plaza B also had access to obsidian items. 19 flakes and 21 prismatic blades were recovered from northern contexts dating to the early-late Kanluk transition. Access to this volcanic glass, however, was not opened to all Cahal Pech households during the late facet of the Kanluk phase (Table 6.4). Units across Plaza B explored by Cheetham (1996) yielded a single prismatic blade, which was uncovered in Unit 10, located in front of Structure B-5, where I placed my excavations in 2011-2013. The other excavations lacked obsidian artifacts.

Like the Kanluk construction phases of Structure B-4, the public building at Zubin lacked obsidian (Iannone 1996). This phenomenon should not be attributed to the public function of Structure C-9 and Structure B-4, because a significant amount of

obsidian blades were recovered at the round platform Structure 14 of Tolok (Powis 1996). Rather, the absence of obsidian artifacts could be due to the particular functions of these public edifices and the use of prismatic blades. Regrettably, it has not been possible to explore this issue because there are no records on obsidian recovered from the Kanluk public constructions exposed at the Tzinic, Zopilote, and Zotz groups.

There also was differential access to obsidian artifacts at the site level, perhaps based on their hierarchy in the settlement pattern. Small sites like Barton Ramie, for instance, lacked artifacts made of obsidian (Willey et al. 1965). Middle Preclassic contexts at Chan yielded few obsidian artifacts (n=6). Chan obsidian artifacts came from SMJ outcrops (Melerhoff et al. 2012).

The 2011-13 excavations expanded the obsidian collection from Cahal Pech. A total of 45 pieces were recovered from Middle Preclassic contexts in SW Plaza B. I classified these artifacts based on a technological typology. They were sourced by Claire Ebert (2015) from Pennsylvania State University using the portable X-ray fluorescence spectrophotometry method. As result of these analyses, I observed that this sample exhibited similar patterns to the collection obtained during the excavations of Structure B-4 (Table 6.6). Two industries were identified in the collection: the casual flake and prismatic blade industries. These industries were only represented by their final products—casual flakes (n=2) and prismatic blades (n=40). As in Structure B-4, there was no evidence of manufacture of either tool. Blanks, polyhedral cores, exhausted cores, by-products or manufacture errors were not present in the collection. This suggests that people occupying the Middle Preclassic structures in SW Plaza B obtained obsidian items as finished tools. Nevertheless, a fragment of a polyhedral core was found associated

with the round platform of the southern group (Horn 2015), suggesting the possibility that prismatic blades were manufactured in this location.

Table 6. 6. Diachronic distribution of obsidian industries from SW Plaza B during the Cunil and Kanluk phases.

Construction phase	Industry	Type	Condition	Source	Frequency
Plaza B / 5th	Casual flake	Casual flake	Complete	CHY	1
Plaza B / 10 th	Prismatic blade	Prismatic blade	Medial	SMJ	1
	Not determined	Flake	Distal	CHY	3
Plaza B / 11 th -A	Prismatic blade	Prismatic blade	Medial	SMJ	3
Plaza B / 11 th -B	Prismatic blade	Prismatic blade	Proximal	SMJ	1
	Casual flake	Casual flake	Proximal	CHY	1
Plaza B / 12 th	Prismatic blade	Prismatic blade	Proximal	SMJ	4
			Medial	SMJ	11
Plaza B / 12 th -2	Prismatic blade	Prismatic blade	Proximal	SMJ	6
			Medial	SMJ	10
Plaza B / 13 th	Prismatic blade	Prismatic blade	Medial	SMJ	3
			Distal	SMJ	1
Total					45

The diachronic distribution of technological types agrees with the temporal pattern described by Awe and Healy (1994; Figure 6.7). Nevertheless, Cunil construction phases did not provide obsidian artifacts and the only artifact recovered from the early Kanluk construction phases was a casual flake from the CHY outcrop associated with the fill of Plaza B/5th. The presence of casual flakes and flake fragments in the late Kanluk construction phases suggests that this expedient technology continued to be in used, even though prismatic blades started being used at the beginning of the late Kanluk. It is worth noting that 31 prismatic blades (68.9% of the total obsidian sample) were recovered in the fill of Plaza B/12th (n=15) and Plaza B/12th-2 (n=16), suggesting that people using the

round platform Plaza B/11th-A and rectangular platform Plaza B/11th-B had relatively better access to prismatic blades than their predecessors, perhaps as consequence of a more organized exchange network. This suggestion is confirmed by the relative percentage of obsidian artifacts relative to the number of ceramic fragments (Figure 6.7).

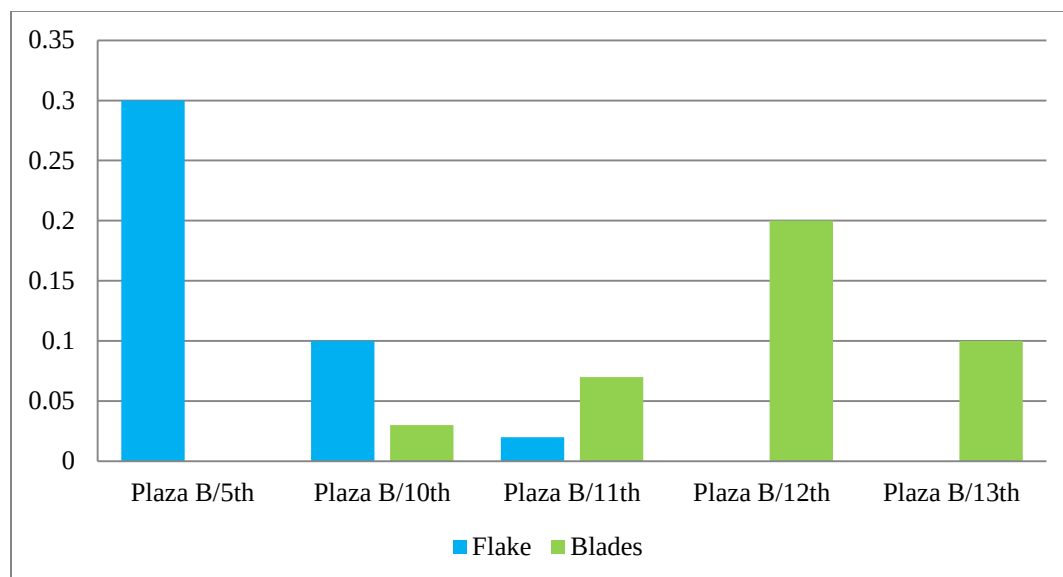


Figure 6.7. Percentages of obsidian artifacts recovered in SW Plaza B relative to the number of ceramic fragments.

Tolok yielded a larger number of obsidian artifacts than the household that occupied SW Plaza B at the end of the Kanluk phase (Figure 6.8). This suggests that Tolok had better access to obsidian goods than the SW Plaza B social group (Figure 6.8). Nevertheless, this comparison is inconclusive because the number of sherds recovered in the core and the periphery during previous excavations was not recorded in the reports. Consequently, relative numbers of the different contexts were not calculated.

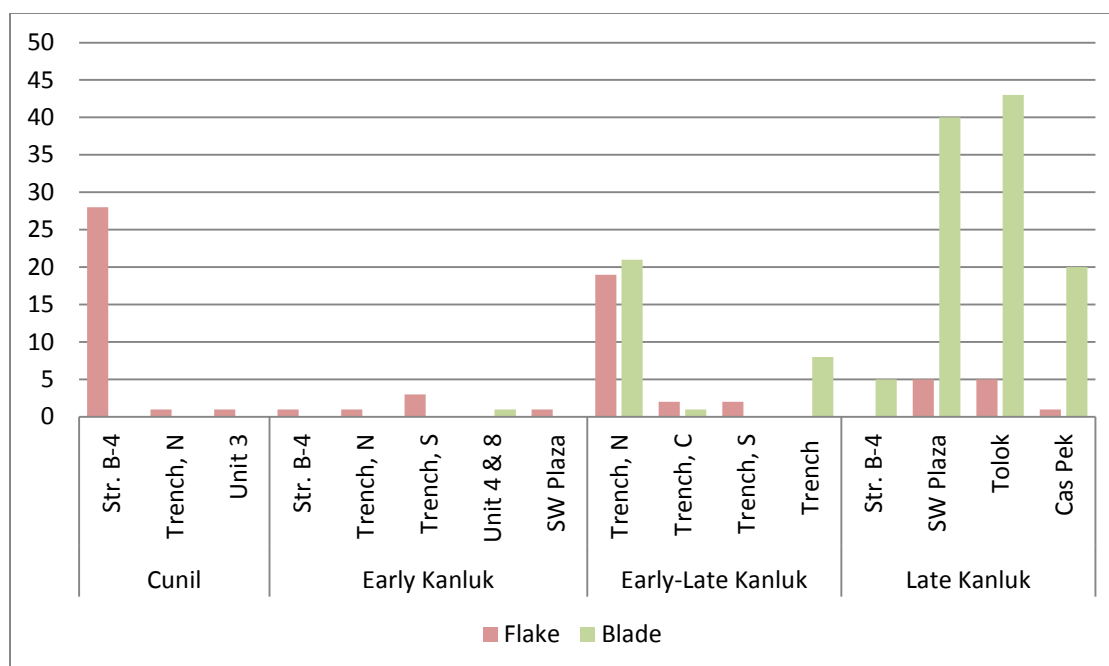


Figure 6.8. Distribution of obsidian artifacts by area and ceramic phase.

Regarding the geological sources of the obsidian, material coming from SMJ deposits prevailed in the late Kanluk sample from SW Plaza B. CHY also was present but its occurrence was limited, again corroborating the information from other lowland sites. All the prismatic blades (n=40, 88.9% of the total obsidian sample) were made exclusively of SMJ material (Figure 6.9). No prismatic blades were crafted from CHY obsidian. CHY obsidian was solely procured as spalls or chunks to knap casual flakes (n=5, 11.1% of the total obsidian sample; Figure 6.10).



Figure 6.9. Prismatic blade from San Martín Jilotepeque recovered in late Kanluk contexts in SW Plaza B.

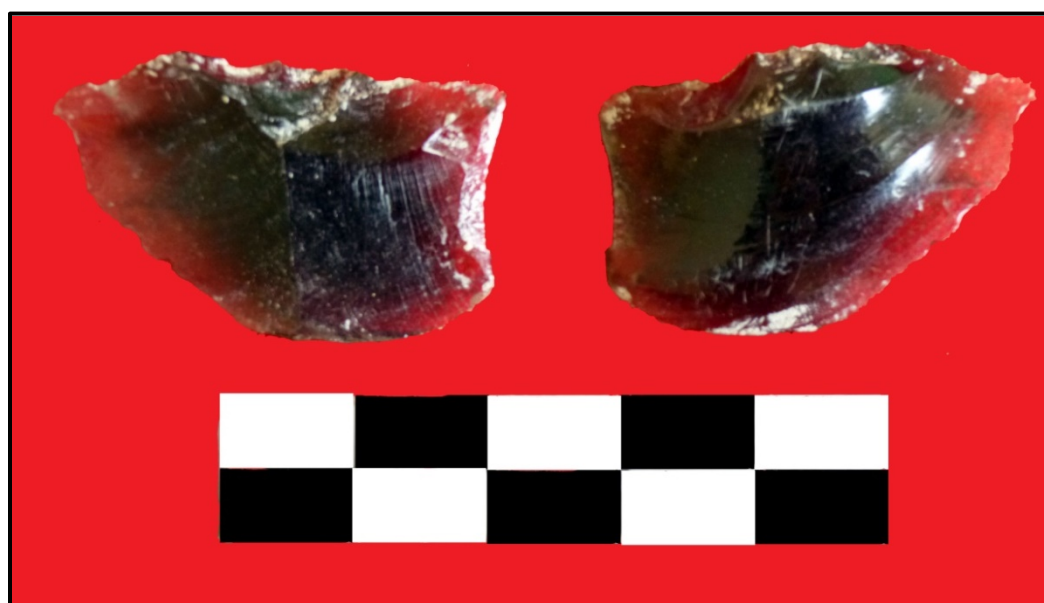


Figure 6.10. Casual flake from El Chayal recovered in SW Plaza B.

Therefore, the sourcing analysis suggests that Cahal Pech participated in two different exchange systems in order to obtain obsidian. The southwest exchange system was active as early as the Cunil phase. Through this network, the groups inhabiting the

southern area of Plaza B procured SMJ obsidian, first as spalls to produce casual flakes (during the Cunil and early Kanluk phases) and later, as prismatic blades (during the late Kanluk phase). Participation in this route intensified at the end of the Kanluk phase, when the architectural group Plaza B/11th was in use.

Evidence from the northern group reveals a different pattern. This group imported nodules or spalls made of CHY obsidian to knap expedient tools. Participation in this exchange network started in the Cunil phase and continued throughout the early facet of the Kanluk phase but at a low rate. During the late facet of the Kanluk phase, the northern group continued using obsidian flakes as well as prismatic blades from CHY and SMJ. Unfortunately, most of the obsidian artifacts recovered in the northern group, other areas of Plaza B and peripheral groups have not been sourced.

6.3 GROUND STONE: LOCAL, REGIONAL AND LONG-DISTANCE RESOURCES

Ground stone artifacts include stone implements and other objects that were manufactured by grinding, abrading, and polishing techniques (Sidrys 1983) using a variety of raw materials. I classified the Cahal Pech ground stones first by raw materials, and then divided them into major groups based on morphological types or assumed functions. I used the classification proposed by Andrews IV and Rovner (1975) and Rovner and Lewenstein (1997). I recorded metric attributes (length, width, thickness, and weight) and condition of the artifacts (complete or fragmentary) as part of the classificatory process. The relative chronology of each artifact was determined based on its associated pottery.

6.3.1 Artifacts: Identifying Uses

I recovered a total of 99 ground and polished stones in the Middle Preclassic contexts in SW Plaza B. This collection contained 16 morphological types made of eight different raw materials (Table 6.7).

Table 6. 7. Morphological types by raw material of ground and polished artifacts recovered in SW Plaza B.

Type	Subtype	Raw Material	Frequency	
Abrading tool		River cobble	1	
		Sandstone	1	
Adornos	Rectangle Triangle	Serpentine	1	
		Jadeite	1	
		Serpentine	2	
		Slate	2	
Celt		Basalt	1	
		River cobble	2	
		Serpentine	1	
		Slate	1	
Disk		Limestone	1	
		River cobble	1	
		Slate	2	
Mano		Granite	4	
		Limestone	2	
Metate		Basalt	1	
		Granite	3	
Pendant		River cobble	1	
		Sandstone	1	
		Slate	1	
Preform		Slate	1	
Smoothing / polishing tool		River cobble	10	
		Slate	1	
Spheroid balls		River cobble	4	
Non-formal tools		Basalt	1	
		River cobble	1	
		Slate	4	
Stone fragment	Chunk	Basalt	4	
		Granite	2	
		Serpentine	2	
		Slate	5	
	Slabs	Serpentine	1	
		Slate	2	
	Shatter	Slate	31	
		TOTAL		99

Based on the presence of grinding implements, I suggest that food processing was carried out in the explored area. These implements consisted of four *manos* and three *metates* manufactured from granite. Like other sites in the Belize Valley, granite was the preferred material for manufacturing grinding tools. Two *manos* made of limestone and one metate fragment made of basalt also were part of the collection (Figure 6.11).



Figure 6.11. Manos made of limestone (upper) and granite (lower).

Other artifacts that could have been related to domestic activities are stones that exhibited a flat, discoidal shape (Figure 6.12). These disks, colloquially known as *panuchos* in the northern lowlands, are usually made of quarried limestone, although a disk fabricated from a river cobble was recovered at Cahal Pech. Based on ethnographic data, the flat discoidal stones have been interpreted as lids of ceramic vessels due to the fact that they have been recovered with this kind of container. The disks also could have functioned as end-plugs for hollow wood trunks used as beehives (Garber 1989; McAnany and Ebersone 2004; Phillips 1979; Sidrys 1983; Wallace 1978). These disks

are usually recovered in domestic contexts indicating that apiculture activity was carried out near the residential space, but ethnographic data suggest that beekeeping also could have been carried out in the *milpa* (Fernández Souza and Peniche May 2011).



Figure 6.12. Limestone disk possibly used as a beehive lid.

The presence of three stone spheroids manufactured from river cobble also could indicate the processing of food (Figure 6.13). Based on ethnographic evidence, small balls made of either stone or clay have been interpreted as culinary equipment (Simms et al. 2013). For instance, fired stones are currently used in *pib* or earth ovens as cooking devices. There is another cooking technique, known as stone-boiling, in which hot stones are dropped into a pot containing liquid to cause it to boil and cook the food (Pyburn 1989:337; Tuz Chi personal communication 2015). Heated stones also could be placed in pots containing ground, cooked beans and ground squash seeds in order to dehydrate the mixture for storage (Coe 1994:163). In Yucatán, these implements are known as *tok'seel*

and, as their name indicates, they are made of *tok'* or chert. The dimensions of these fired stones vary, but they are usually smaller than 0.15 meters (Tuz Chi personal communication 2015). The stone balls from SW Plaza B were made from river cobbles and were small in size—ranging from 4.8 to 6.4 cm in diameter—fitting well with the description of fired lithic balls presented by Simms and colleagues (2013) and Tuz Chi (personal communication 2015). Alternatively, spherical stones also have been interpreted as ammunition for weapons, such as slingshots (Clark 1988). Stone projectiles or *yuntuno'ob* are characterized by being spherical in shape about 5 cm in diameter (McAnany and Ebersone 2004). If the spherical stones recovered at Cahal Pech held this function, then they could have been used during hunting or war-like activities. These small stones also could have functioned as toys similar to marbles (called *barritos* in Mexico).

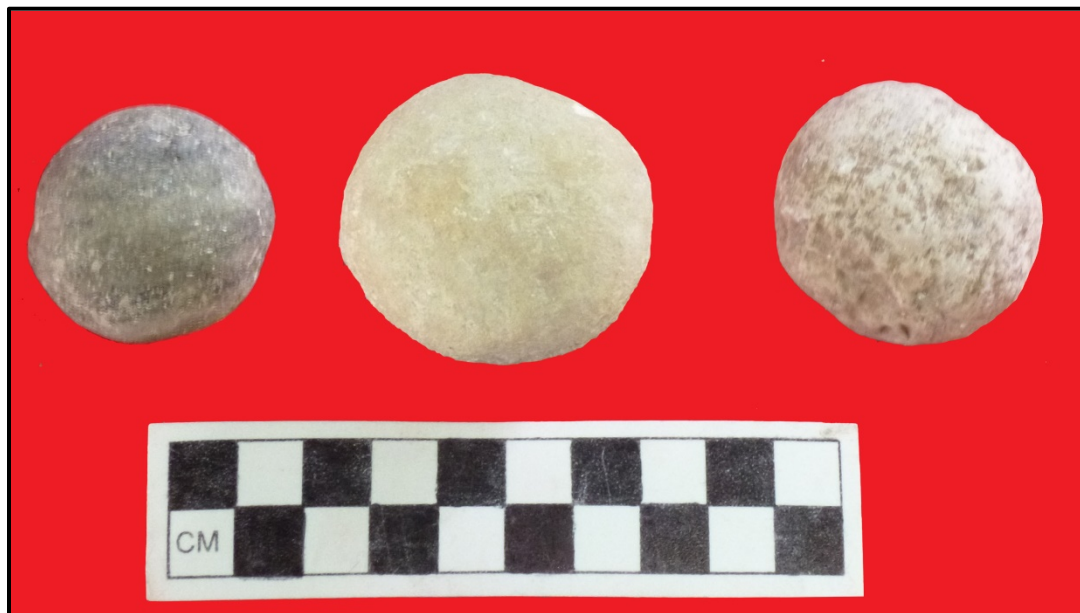


Figure 6.13. Stone spheroids.

Four ground and polished celts manufactured with basalt, river cobble, serpentine and slate were identified in the collection. The celts made of serpentine and basalt could have been used for felling trees, woodworking (McAnany and Ebersone 2004) or lapidary manufacture (Figure 6.14). The function of the slate celt is difficult to determine but it could have been used as masonry tool, like the limestone celts recovered in the northern lowlands (Peniche May 2007a; Peniche May and Fernández Souza 2004; Phillips 1979). Nevertheless, it is more likely that the slate celt functioned as an ornament. Even though slate is a hard rock, it is friable, breaking easily into thin and even layers and, consequently, it is not suitable for tool use. The river cobble celt also could have been used as masonry tool or as an ornament. This item was smaller than the other celts, measuring 5.6 cm in length by 3.9 cm in width by 1.9 cm in thickness (Figure 6.15).



Figure 6.14. Small celt made of greenstone.



Figure 6.15. Celts made of river cobble and slate, perhaps used as masonry tools or ornaments.

Definite evidence of masonry work is present. This activity is indicated by the presence of nine smoothing / polishing tools—handheld artifacts characterized by having one or more flat facets (Figure 6.16). Based on ethnographic data, it has been suggested that these implements were used to smooth plaster or pack marl floors (Clark 1988; Lewenstein 1995; Rovner and Lewenstein 1997). The fact that some archaeological artifacts displayed remains of plaster adhering to their ground surfaces corroborates their function as plastering tools. Smoothing / polishing tools with smaller dimensions could have been used during lapidary work to polish stone or during ceramic production to burnish pottery (Cervera 1996; Clark 1988; Rovner and Lewenstein 1997; McAnany and Ebersone 2004).



Figure 6.16. Cobble smoothers used to work stucco.

Most smoothing/polishing tools at Cahal Pech consisted of river cobbles that were modified into what we know as *bananos* (Rovner and Lewenstein 1997). *Bananos* from Cahal Pech are relatively small—ranging from 4.8 to 9.4 cm in length, 1.8 to 6 cm in width, and 0.8 to 4.1 cm in thickness. In addition, two abrading tools were identified. These implements were manufactured using sandstone and a river cobble and were characterized by presenting grooves. It is possible that these tools had been used to work materials like wood.

Grinding and polishing techniques also were employed to fabricate ornaments. Ornament categories include disks, slabs, pendants, rectangles, and triangles. The pendants were made of river cobble, sandstone and slate and were characterized by their conical or biconical perforations (Figure 6.17). The triangles and rectangles were manufactured using serpentine (the rectangle and two triangles), jadeite (one triangle) and

slate (two triangles; Figure 6.18). Greenstone and jadeite items were valued goods across Mesoamerica, which were generally restricted to elite spaces (Grove and Gillespie 2002).



Figure 6.17. Pendants made of river cobble (left) and slate (center and right).

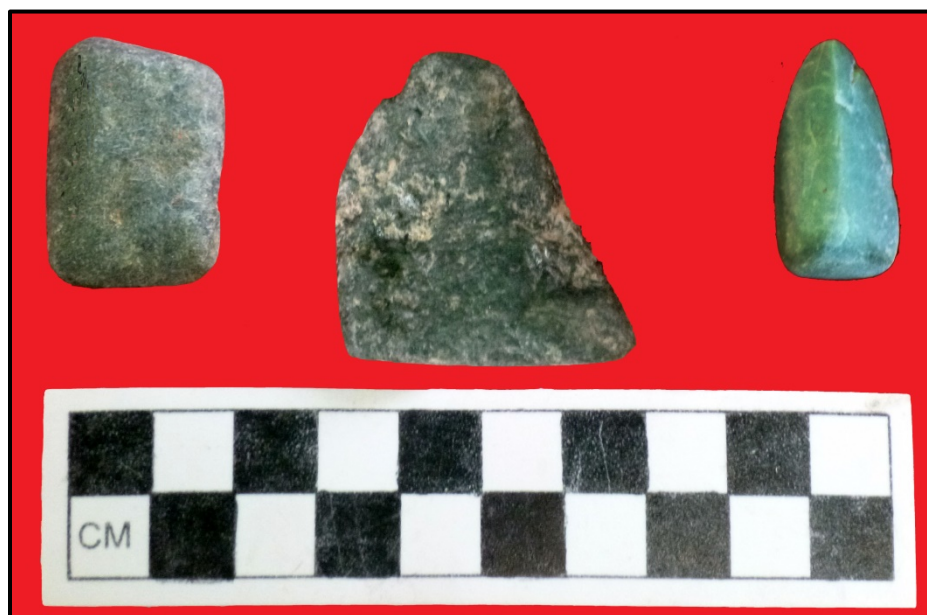


Figure 6.18. Adornments made of serpentine (left and center) and jadeite (right).

The disks and slabs were manufactured with slate and could have functioned as flat backings for ornate mosaic plaques known as mirrors (J. Braswell 2010; Healy et al. 1995; see also Inomata and Eberl 2014; Figure 6.19). The majority of mirror backs used in the lowlands and highlands were made of slate, although backings made of pottery, sandstone, shell, and limestone also were used (Healy and Blainey 2011; Inomata and Eberl 2014). Mirrors were traded during the Middle Preclassic (Derilo Tway 2004). In addition to their use as parts of ornaments and costumes, mirrors are interpreted as “highly valued ceremonial artifacts used [...] for religious divination and prognostication [...], in attempts to make direct communicative contacts with a spiritual Otherworld” (Healy and Blainey 2011:229). Consequently, mirrors can be regarded as a source of power.



Figure 6.19. Fragments of slate disks.

The finding of slate backing for mirrors in the SW Plaza B assemblage is very interesting. They were likely used as such by the inhabitants of SW Plaza B. Nevertheless, the finding of mirror backs in SW Plaza B is not unique. Awe (1992:302) and Horn (2015) have found slate mirror backs at Structure B-4 and the northern group of Cahal Pech.

Unlike the previous morphological types, which were carefully shaped, there is a category of artifacts that do not exhibit a recognizable form even though they display evidence of a ground or polished surface. These artifacts could have been non-formal tools made of fragmentary remains of ground artifacts fabricated from basalt and slate, indicating the practice of recycling. Further evidence of this practice of recycling basalt and slate goods lies in the recovery of small fragments of basalt (n=4) and slate (n=36). Along with these small stone fragments, granite (n=4) and serpentine (n=2) fragments also were recovered. A “preform” made of imported slate also was identified, which raises the question of whether some slate production took place at the area. Nevertheless, it is highly likely that these small pieces are actually fragments of recycled mirror backs.

6.3.2 Raw Material Procurement Zones

The collection of ground and polished stones, while numerically small, provides information about procurement zones of raw material and the exchange networks in which the inhabitants of SW Plaza B participated, either directly or indirectly.

Cobbles from riverine areas were the preferred raw material for fabricating a variety of goods, such as abrading and smoothing/polishing tools, disks, celts, spheroid balls, and ornaments. This is understandable since river cobbles were easily accessible

and suitable to manufacture an array of tools. Oddly, few artifacts were manufactured with the most abundant rock: limestone. Limestone occurred naturally throughout the sustaining area of the site (Awe 1992:287). This could be related to the fact that the sedimentary rock in the Belize Valley possesses low strength and is nearly pure calcium carbonate (Ginell and Kumar 2004), making it unsuitable for tool manufacture. The local sandstone also demonstrates a wide variation in quality, ranging from very fine-grained to incredibly coarse-grained (McAnany and Ebersone 2004). This rock is very common in the eastern lowlands.

Deposits of slate—a compact, fine-grained metamorphic rock—can be found at the Santa Rosa Group of beds, in locations skirting the Maya Mountains (i.e., Slate Creek, Little Vaquero, Barton Creek, Vaca Falls and Black Rock; Healy et al. 1995). The closest known slate deposits are located at Black Rock, 11 miles from Cahal Pech. Slate also can be recovered along the Macal River and its tributaries. The sub-catchment basins of this river rest in the southern Maya Mountains and Mountain Pine Ridge and usually carry boulders and their weathered products for various distances downstream. Slate is abundant along the Site River and Big Creek (Graham 1987), but these slate boulders are usually small because of weathering. Slabs of considerable size are found only in the Black Rock region¹².

Cahal Pech inhabitants could have been granted access to the cobbles from the Macal River, but in order to get larger pieces, it was necessary to import them from populations closer to the supply zones, like Pacbitun and Xunantunich where lapidary work associated with the Classic elite context has been reported (J. Braswell 2010; Healy

¹² The modern crafters from San Antonio Succotz village, famous for their slate carving, still obtain slate slabs from the Black Rock region, even though slate boulders are available along the Macal River.

et al. 1995). In this case, slate could have been reached Cahal Pech as finished products (e.g., backing of mirrors, ornamental celts, pendants, and other adornos) and through exchange networks.

Cahal Pech inhabitants likely obtained grinding tools such as *manos* and *metates* as finished products because these are heavy implements and the transport of raw material would be highly inefficient. Most of the tools used to process foodstuffs were fabricated of granite. Deposits of this intrusive volcanic rock are located in the Maya Mountains of southern Belize. The three major granite intrusions are the Mountain Pine Ridge Batholith, the Cockscomb Batholith and the Hummingbird granites (Graham 1987: Figure 1). The closest outcrops to the Belize Valley are in the Mountain Pine Ridge—a dissected granite plateau located at the northwest edge of the Maya Mountains of southern Belize (Abramiuk & Meurer 2010).

There is evidence to suggest that during the Classic period, the community of Pacbitun manufactured grinding tools of granite (Skaggs et al. 2015). Although evidence of this craft is lacking for the Middle Preclassic, it is possible that Pacbitun supplied the Belize Valley sites with these grinding implements. Cahal Pech inhabitants could have obtained some granite directly, because as cobbles and boulders occasionally wash down the banks of the Macal River. Nonetheless, like slate, undamaged cobbles of appropriate size and quality are typically reused (Horn 2015). *Metates* made of basalt, a dense and fine-grained material, also were used by the inhabitants of SW Plaza B. Basalt is an extrusive igneous rock and, in southern Mesoamerica, the only known deposits are located in the highlands of Guatemala (McAnany and Ebersone 2004). Basalt grinding tools must have arrived to the Belize Valley as finished products.

The Guatemalan highlands also contain the only confirmed sources of jade and serpentine in the Maya area. These geological sources are located at the Motagua River Valley of eastern Guatemala (McAnany and Ebersone 2004). Jade was highly prized for its color and it is likely that serpentine had a similar value. Ornaments and celts made of these green stones were most likely imported to Cahal Pech as finished goods.

6.3.3 Temporal Variation of Tool Types and Raw Materials

There are interesting aspects of the distribution of morphological types by raw materials and construction phase (Table 6.8). Plaza B/4th phase contained grinding stones and limestone disks. This suggests that people occupying Plaza B/3rd were engaged in domestic activities such as food processing and, perhaps, beekeeping. The presence of granite, serpentine, and slate in Cunil contexts confirms that the inhabitants of SW Plaza B participated in regional and long-distance exchange networks since this early time. This information is corroborated by Cunil data from Structure B-4 and the trench across Plaza B (Table 6.9; Figure 6.20). Structure B-4 and the northern group provided slate plaques indicating that these groups had access to goods considered to be power symbols.

Table 6. 8. Morphological types and raw materials of ground stone artifacts by construction phase.

Construction phase	Type	Subtype	Frequency	Raw material
Plaza B / 4th	Mano		2	Granite
	Stone fragment	Chunk/shatter	1	
	Disk		1	Limestone
	Disk		1	River cobble
Plaza B / 5th	Stone fragment	Chunk/shatter	1	Serpentine
	Pendant		1	Slate
Plaza B / 6th	Spheroid ball		1	River cobble
Plaza B / 8th	Smoothing tool	Banano	1	River cobble
Plaza B / 9th	Smoothing tool		1	River cobble
	Spheroid ball		1	
	Pendant		1	Sandstone
Plaza B / 10th	Non-formal tool		2	Slate
	Stone fragment	Chunk/shatter	5	
Plaza B / 11th-A	Stone fragment		2	Slate
Plaza B / 11th-B	Celt		1	Basalt
	Stone fragment	Chunk/shatter	3	
	Stone fragment	Chunk/shatter	1	Granite
	Smoothing tool	Banano	3	River cobble
	Adornment	Triangle	1	Serpentine
	Non-formal tool		1	Slate
	Smoothing tool	Banano	1	
	Stone fragment	Chunk/shatter	1	
Plaza B/12th	Metate		1	Granite
	Adornment	Triangle	1	Jadeite
	Celt, small		1	River cobble
	Pendant		1	
	Smoothing tool	Banano	2	
	Spheroid ball		1	
	Celt		1	Serpentine
	Adornment	Rectangle	1	
	Stone fragment	Chunk/shatter	1	
	Stone fragment	Chunk/shatter	5	Slate
	Non-formal tool		1	

Table 6. 8. Morphological types and raw materials of ground stone artifacts by construction phase (continuation).

Construction phase	Type	Subtype	Frequency	Raw material
Plaza B / 12 th -2	Stone fragment	Chunk/shatter	1	Basalt
	Mano		1	Granite
	Metate		2	
	Mano		2	Limestone
	Abrading tool		1	River cobble
	Non-formal tool		1	
	Smoothing tool	Banano	3	
	Spheroid ball		1	
	Abrading tool		1	Sandstone
	Adornment	Triangle	1	Serpentine
	Stone fragment	Slab	1	
	Celt, small		1	Slate
	Disk		2	
	Preform		1	
	Stone fragment	Chunk/shatter	18	
Plaza B / 13 th	Metate		1	Basalt
	Non-formal tool		1	
	Mano		1	Granite
	Celt		1	River cobble
	Stone fragment	Chunk/shatter	7	Slate
		Slab	2	
TOTAL			99	

The ground and polished stone collection from early Kanluk contexts in SW Plaza B is limited. It consists of spheroid balls and smoothing tools fabricated with river cobbles. This adds to the items recovered in the southern area: greenstone triangulates, a chert hammerstone, a limestone smooth stone, and limestone spheroids (Horn 2015). The northern buildings of Plaza B also displayed a limited inventory (Cheetham 1996; Horn 2015; Table 6.9). They yielded chert and limestone spheroids, quartzite hammerstones and *manos*, granite *manos*, slate unworked fragments, a basalt fragment, and a greenstone

item. In addition, most of the artefacts recovered in the Phase IV dated to the end of the early Kanluk phase when Platform B was constructed and in use (Table 6.10). The inventory of Phase IV includes a variety of goods made of local and non-local raw materials.

Table 6. 9. Ground and polished artifacts uncovered in Cunil and Early Kanluk contexts of Cahal Pech (Awe 1992; Cheetham 1996; Horn 2015; Ianonne 1995; Lee 1996; Lee and Awe 1995; Powis 1996; Powis and Hohmann 1995).

Phase	Group	Structure/ Area	Type	Raw material	Frequency
Cunil	Plaza B	Str. B-4	Adorno	Jadeite	1
			Plaque	Slate	1
	Trench, N		Hammerstone	Quartzite	2
			Mano	Granite	1
			Metate	Vesicular lava	1
			Spheroid	Limestone	24
				Quartzite	1
			Disk/plaque	Slate	1
			Pendant		1
			Worked fragment		2
	Trench, S		Mano	Granite	1
			Metate	Vesicular lava	1
			Spheroid	Limestone	1
				Quartzite	1
			Worked fragment	Slate	2
			Unworked		4
Early Kanluk	Plaza B	Str. B-4	Bead	Jadeite	2
			Mano	Granite	2
	Units 4 & 8		Mano	Quartzite	1
			Pendant	Slate	1
	Units 5 & 6		Small balls	Chert	2
	Unit 9		Mano	Quartzite	1
			Worked	Basalt	1
	Unit 11		Worked	Greenstone	1
	Trench, N		Hammerstone	Quartzite	2
			Spheroid	Limestone	4
			Unworked fragment	Slate	1
	Trench		Hammerstone	Chert	1
			Spheroids	Limestone	3
			Smooth stone	Limestone	1
			Triangulate	Greenstone	1

Table 6. 9. Ground and polished artifacts uncovered in Cunil and Early Kanluk contexts of Cahal Pech (Awe 1992; Cheetham 1996; Horn 2015; Ianonne 1995; Lee 1996; Lee and Awe 1995; Powis 1996; Powis and Hohmann 1995; continuation).

Phase	Group	Structure	Type	Raw material	N
End of Early Kanluk- Late Kanluk	Plaza B	Trench, C	Mano	Granite	1
			Triangulate	Greenstone	3
			Disk	Slate	1
	Trench, N	Trench, N	Triangular stone	Basalt	1
			Hammerstone	Chert	1
			Mano	Granite	3
			Metate		2
			Spheroid		1
			Bead	Greenstone	6
			Chunk		3
			Mosaic/Inlay		4
			Tooth-shape		1
			Triangulate		20
			Smooth stone	Igneous stone	2
			Smooth stone	Limestone	2
			Spheroid		7
			Hammerstone	Quartzite	1
			Disk	Slate	2
			Slab		1
			Unworked		42
			Worked		1
			Metate	Vesicular lava	1
			Stone fragment		2
	Trench, S	Trench, S	Mano	Granite	2
			Bead	Greenstone	1
			Spheroid	Limestone	1
			Unworked	Slate	2
Late Kanluk	Plaza B	Str. B-4	Mano	Granite	2
	Cas Pek	Str. 1	Plaque	Slate	1
			Mano	Granite	1
			Metate		1
	Tolok	Str. 1, midden	Worked	Slate	1
			Metate	Granite	8
			Mano		1
			Polished pieces	Jadeite	2
			Chunk	Slate	Several
	Str. 14	Str. 14	Mano	Granite	3
			Pendants	Slate	3
			Fragment		45
	Zubin	Str. 15	Adornment	Jadeite	2
		C9-7 th	Beads	Jadeite	2
			Modified pebble	Greenstone	1
		C9-6 th	Triangle	Greenstone	2
			Bead	Jadeite	2
		C9-5 th	Triangle	Greenstone	1

During the second part of the Kanluk phase, the occupants of SW Plaza B acquired a wide variety of raw materials obtained through local (river cobbles and limestone), regional (granite, sandstone and slate) and long-distance exchange (basalt, jadeite, and serpentine; Figure 6.20). These materials were employed to fabricate a variety of tools and ornaments.

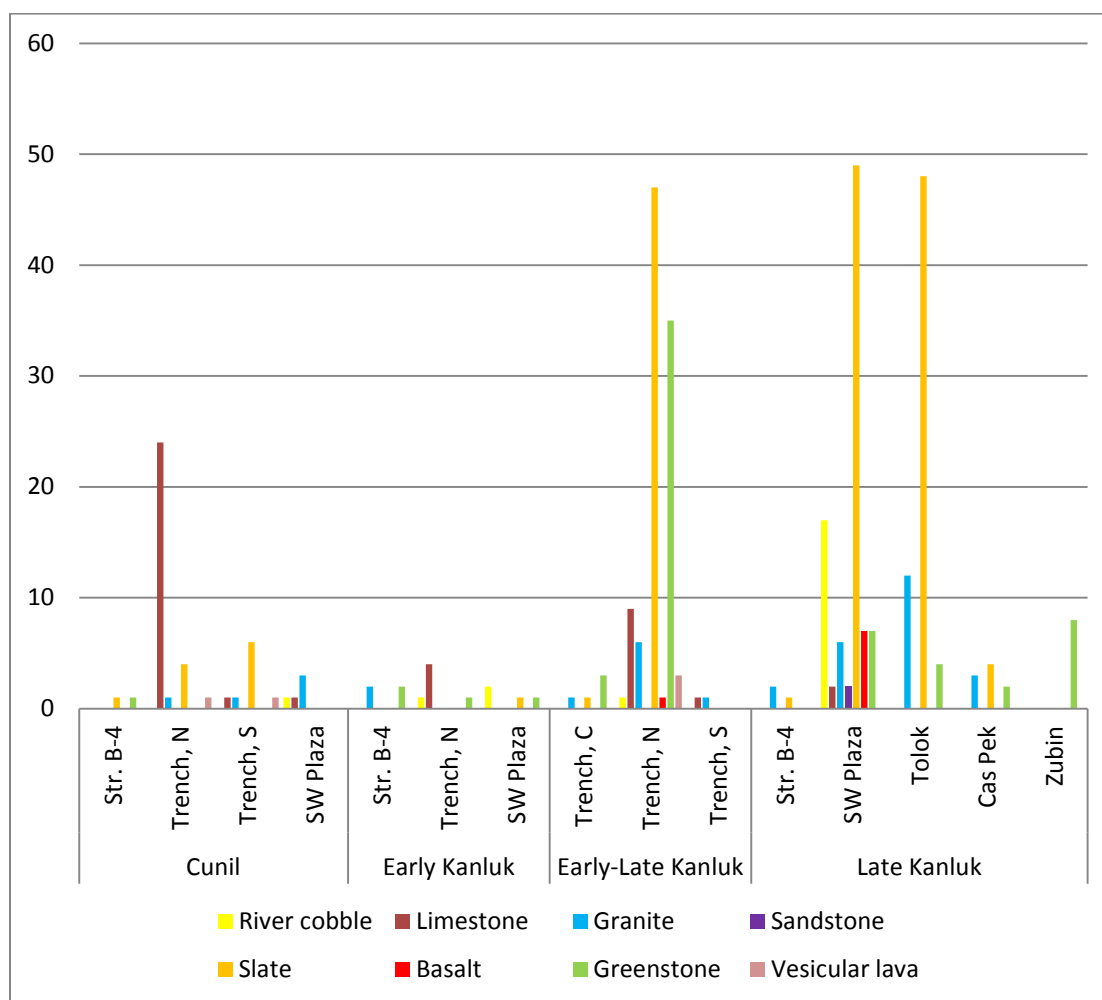


Figure 6.20. Distribution of ground and polished tools by raw materials, area, and ceramic phase.

The collection dating to the end of the Kanluk phase, when the Plaza B/11th group was functioning, is especially rich. In contrast, the inventory associated with the cobbled platform Plaza B/12th is scant. Ground and polished items were practically absent in other contexts of Plaza B during the late facet of the Kanluk phase. The exception is the northern group that yielded some ground and polished goods made of local and non-local raw materials, although it is not possible to determine what materials were used exclusively during the late facet of the Kanluk phase (Horn 2015; Table 6.10; Figure 6.20).

The Cas Pek and Tolok households also acquired goods obtained through regional and long-distance exchange, such as granite, slate, greenstone, and jadeite. Nevertheless, the presence of jadeite and other greenstones was limited. These goods were typically recovered from special deposits, such as caches. The special role of jadeite/greenstone items is confirmed by data from Zubin. The only ground and polished items recovered from this early public building consisted of jadeite/greenstone ornaments.

Objects fabricated with slate also were obtained by the Cas Pek and Tolok households but again, their presence was scarce and was limited to ornaments and fragments. Disks used as mirror backings—objects considered as power symbols—were not present in these peripheral spaces. Basalt artifacts also were absent. The presence of grinding implements made of granite, however, seems to be more frequent than other foreign materials. Interestingly, artifacts made of modified river cobbles also were uncommon in the Cas Pek and Tolok groups.

6.4 SUMMARY

Lithic material offers relevant information about a variety of economic activities conducted during the Cunil and Kanluk phases. Based on lithic data, we know that people occupying SW Plaza B engaged in a variety of activities and were involved in different scales of exchange—local, regional and long-distance—to ensure the procurement of raw materials and goods for their daily needs.

Through local exchange, inhabitants of SW Plaza B acquired formal tools and raw materials of chert and limestone. They also modified casual flakes, percussion blades, and burin spalls (see Chapter 8). River cobbles also were obtained in the region to be modified into pendants and a variety of tools—particularly masonry and cooking implements. Limestone and river cobbles were modified into disks that could have functioned as beehive lids. These activities were conducted throughout the Middle Preclassic period. At the end of the late facet of the Kanluk phase, the SW Plaza B social group consumed microdrills made of chert, which suggest the practice of ornamental production. The practice of all these activities almost disappeared when the cobbled platform Plaza B/12th was in use.

In addition to the exploitation of local resources, inhabitants of SW Plaza B were involved in regional exchange networks through which they acquired a variety of tools and other finished products. Participation in these networks started as early as the Cunil phase and through them, the SW Plaza B inhabitants obtained granite tools and slate items. Interestingly, people occupying SW Plaza B consumed slate disks beginning in the Cunil phase. Slate disks likely supported mirrors. These items were used to wield power over others, as they were involved in rituals meant to communicate with the supernatural

realm. These valuable items, however, were not restricted to this social group, as Structure B-4 and the northern group also yielded slate plaques.

The social group using SW Plaza B participated more intensively in regional exchange networks at the end of the Kanluk phase. At this time, a larger variety of goods were procured. Formal tools made of chert were acquired from northern Belize. Ornaments and mirror backs made of slate, as well as granite grinding tools came from the Maya Mountains. The slate and granite tools were obtained to carry out domestic activities such as food processing and masonry, while the slate mirror backs indicates the practice of rituals. Although peripheral groups and other areas of Plaza B had access to most granite and slate goods, mirror backings were restricted to the people using SW Plaza B and Structure B-4. This suggests that power symbols were not widely distributed among the other emerging elite.

The inhabitants of SW Plaza B also were involved in long-distance exchange networks to ensure access to a variety of goods (obsidian, basalt, jadeite and serpentine) that were required due to social convention. These networks were in operation since the Cunil phase and, through them, this social group obtained obsidian from SMJ to manufacture casual flakes. These exchange networks were not restricted as the northern group obtained obsidian flakes through them. Prismatic blades were absent in the Cunil assemblage of Cahal Pech, although they may have been known in the Belize Valley, as Kanocha contexts in Blackman Eddy yielded a single prismatic blade made of CHY obsidian. During the early facet of the Kanluk phase, the northern and southern groups continued to be involved in the long-distance exchange networks through which they acquires spalls from SMJ to manufacture expedient tools. These individuals did not have

access to prismatic blades technology. In addition, people from SW Plaza B and the northern group obtained greenstone items. In contrast, basalt tools were restricted to SW Plaza B.

Involvement in the long-distance networks intensified during the second part of the Kanluk phase, when a larger variety of non-local goods was consumed. Through these networks, the social group that occupied SW Plaza B acquired prestigious ornaments made of serpentine and greenstone, as well as grinding tools manufactured of basalt. The northern group may have continued participating in the long-distance exchange networks to obtain greenstone. Nevertheless, as the Phase IV includes artifacts dating to the early and late facets of the Kanluk phase, it is difficult to evaluate the importance of the jadeite items during the late Kanluk.

Although greenstone and jadeite goods were not restricted to the core, these types of goods were mainly found in peripheral public constructions rather than domestic buildings, and in some caches and burial offerings. Basalt grinding tools were restricted to Plaza B. Apparently, during the late facet of the Kanluk phase, there was a differential consumption of long-distance goods made of greenstone, jadeite and basalt among the occupants of Plaza B and periphery groups. These particular objects may have had a meaning similar to that of the mirrors. They may have been power symbols. Their limited presence in public contexts, caches, and burials could mean that they were regarded as inalienable possessions.

Obsidian played a different role in the community. The public and domestic buildings located in the southern area of Plaza B yielded prismatic blades from the SMJ deposits. Based on a polyhedral core fragment, it is possible that prismatic blades had

been produced in this area. The northern household of Plaza B also had access to prismatic goods, as well as the periphery groups. Prismatic blades also were produced at Cas Pek. Prismatic blades could have served as strategic goods, but they were not considered as power symbols that needed to be restricted to the household of the founder of Cahal Pech. Interestingly, the variety of goods and non-local raw materials decreased when the cobbled platform Plaza B/12th was in use.

In brief, the range of economic activities conducted in most of the constructions in SW Plaza B suggests that these structures were domestic in character. The exception was the cobbled platform Plaza B/12th, which most likely functioned as a public building. In addition, the lithic data provides evidence to support, at least partially, my main hypothesis: a chiefdom political formation developed in Cahal Pech during the early facet of the Kanluk phase (900-600 B.C.) when the political actors living in the southern area of Plaza B manipulated and integrated both material and symbolic valuable resources to wield power over others using a network system to organize their political economy. The unequal power relationships were enhanced during the late facet (600-350 B.C.).

Although the southern and northern social groups were engaged in non-local exchange networks since the Cunil phase, the manipulation of non-local goods of economic and symbolic power (slate mirror backs and basalt) was present until the early facet of the Kanluk phase. This indicates that a change in political formation likely occurred during the early Kanluk phase, with the emergent elite inhabiting the southern area of Plaza B. Social inequality intensified during the second part of the Kanluk phase, a time in which the participation in long-distance exchange intensified. Although the participation in exchange networks continued being unrestricted, the southern group of

Plaza B manipulated a wide variety of material and symbolic valuable resources. All this evidence reveals that the Cahal Pech elite employed network strategies to organize their political economy and wield power over others.

CHAPTER 7.
BETWEEN MUNDANE ACTIVITIES AND RITUAL PERFORMANCES: THE
FIRED CLAY ARTIFACTS

7.1 INTRODUCTION

At Cahal Pech and other Maya sites, clay was modeled and fired to manufacture a variety of ceramic artifacts. Although vessels were the most common produced objects, clay also was utilized for other small items. Artifacts like figurines, musical instruments, personal ornaments, and certain crafting tools were made by modeling and firing clay or even by modifying broken ceramic vessels. These were designed to meet different particular needs and, consequently, to be used in different social contexts. Accordingly, all these small ceramic objects can inform us about recycling and crafting activities, personal ornamentation, ritual and to some extent, the nature of social spaces.

In total, the assemblage from SW Plaza B included 202 small ceramic artifacts recovered from Middle Preclassic contexts. Most artifacts were recovered from construction fill and some middens. Although these contexts of discard do not necessarily represent specific original use contexts, they provide insights into the general locations where the ceramic artifacts were used and who had access to them (Halperin 2014).

I divide this chapter into two sections. Ceramic artifacts that enlighten us about the activities of recycling, crafting, and personal adornment are discussed in the first part. Most of these artifacts were produced by recycling and reshaping sherds (i.e., pendants, perforated sherd, spindle whorls and *tejos*), although some of them were modeled out of clay and then fired (i.e., a ball, beads, tubular artifacts, and unidentifiable artifacts). The

second section concentrates on figurines and musical instruments, which provide information about ritual performance and ideology.

7.2 RECYCLING AND MODELING: CLOTH PRODUCTION AND PERSONAL ORNAMENTS

7.2.1 The Artifacts

Fragments of vessels were sometimes recycled to make tools and ornaments. In the SW Plaza B assemblage, eleven objects were manufactured by reshaping broken pieces of Savana Orange and Jocote vessels into disks and drilling them bi-conically at their center. It has been suggested that these perforated disks were used as weights or spindle whorls¹³ for hand-spinning yarn. So far, spindle whorls are the most common archaeological indicator of textile production across the Maya lowlands as most tools used during weaving were made of perishable materials and textiles do not preserve well in the humid Maya lowlands (Voorhies 1989:197). Fortunately, the presence of these spinning tools is well documented from the Middle Preclassic to colonial times across the lowlands. Most spindle whorls have been discovered in domestic contexts (Ardren et al. 2010; Halperin 2008; Hendon 2006; Hernández Álvarez and Peniche May 2012), although there are cases in which they were placed as part of ritual deposits (Kamp et al.

¹³ Most archaeologists usually accepted that disks with a central perforation functioned as weights for hand-spinning thread (e.g., Ardren et al. 2010; Beaudry-Corbett and McCafferty 2002; Halperin 2008; McCafferty and McCafferty 2000; Stark et al. 1998). Yet some archaeologists argue that the use of these perforated disks as pendants, tokens, and ornaments cannot be ruled out (e.g. Barlett 2004; Moholy-Nagy 2011). Perforated disks also could have been used as gaming pieces. In fact, there is a game in Yucatán named *tinjoroch'*, in which a thick thread is passed through central perforations of a thin, small disk. The thread is rolled up and pulled to make the disk spin as long as possible. These disks, however, display two small central perforations.

2006), dedication ritual deposits (Pool Cab 2011; Serra Puche 2002), and mortuary offerings (e.g., Chase et al. 2008).

Spindle whorls were manufactured using a variety of materials (e.g., seeds, coral, wood, bone, a variety of lithics, and fired clay). Those made of ceramic and stone preserve best in the archaeological record (Hernández Álvarez and Peniche May 2012; see Taschek 1992). Spinning tools also were quite diverse in terms of their morphology and decoration, especially during the Classic and Postclassic (see Carrillo Góngora 2003). A recurrent form in most other Maya lowland sites was the disk, which was fabricated by recycling broken pieces of vessels. The disk-shaped whorls have been reported in the northern lowlands (e.g., Candel, Chunchucmil, Poxilá, Xamán Susulá), the Petén (e.g., Motul de San José and Tikal), the Pasión River region (e.g., Altar de Sacrificios), and northern Belize (e.g., K'axob and Cuello; Ardren et al. 2010; Bartlett 2004; Hammond 1991; Halperin 2008; Hernández Álvarez and Peniche May 2012; Moholy-Nagy 1991; Willey 1972).

The earliest spindle whorls in the lowlands reported from Middle Preclassic contexts in the northern lowlands (Hernández Álvarez and Peniche May 2012) and northern Belize (Bartlett 2004; Hammond 1991) are perforated ceramic disks. Other forms did not appear until the Classic period. In the northern lowlands, the Middle Preclassic ceramic whorls are usually found in elite spaces. Because they are small and weigh less than twelve grams, they were likely employed to hand-spin high quality threads using short fibers, such as cotton or feathers (Hernández Álvarez and Peniche May 2012).

Disk-shaped spindle whorls recovered at SW Plaza B were all found in Middle Preclassic contexts. Most of them come from late Kanluk constructions (n=9), but two

were associated with early Kanluk material. In order to determine the type of thread that they produced, I classified the spindle whorls following the typology established by McCafferty and McCafferty (2000:46-47). The metric attributes of diameter, central perforation size, height, and height-to-diameter ratio were measured (Table 7.1). These variables control functional properties of whorl rotation. Consequently, they are directly linked to the quality of thread that is produced (i.e., thread thickness and degree of twist) and, indirectly, to spinning technique and fiber material (McCafferty and McCafferty 2000).

Table 7. 1. Dimensions of spindle whorls recovered in SW Plaza B. Dimensions were taken in millimeters, while weight was measured in grams.

Condition	Diameter	Height	h/d	Hole size	Weight	Type	Construction phase
Fragment	41.2	8.4	0.2	---	9.4	H	Plaza B 8 th
Fragment	45.3	8	0.18	9.1	11	H	Plaza B 8 th
Complete	55.3	9.9	0.18	8	42	H	Plaza B 10 th
Complete	53.9	9.4	0.17	6.1	18.2	H	Plaza B 11 th -B
Fragment	---	5.4	---	12.1	5.8	---	Plaza B 11 th -B
Fragment	---	6.9	---	16.3	7.1	---	Plaza B 12 th
Fragment	45.8	7	0.15	12.8	10.5	H	Plaza B 12 th -2
Complete	47.3	8.9	0.19	7.4	26.5	H	Plaza B 12 th -2
Fragment	49.4	7.9	0.16	8.5	11.4	H	Plaza B 12 th -2
Complete	65.1	6.3	0.10	5.5	39.4		Plaza B 12 th -2
Fragment	---	6.6	---	---	12.5	---	Plaza B 13 th

Disk-shaped spindle whorls from SW Plaza B fall within the range of Type H on McCafferty and McCafferty's (2000) typology. The H-type whorls had a relatively large diameter, small central hole, a low height-to-diameter ratio, and weight between 18 and 42g (Figure 7.1). All these metric attributes imply that the whorls were used for spinning long and coarse staple fibers (e.g., palm, yucca, or agave fibers such as maguey or

henequen) to produce a thick and loose thread twist. These threads ranged from two-strand threads to cordage, depending on the weight of the whorl (Parson and Parson 1990:322-328). Information provided by the spindle whorls suggests that cotton thread was not made by people occupying the SW Plaza B. Nonetheless, they could have woven cotton thread from elsewhere.



Figure 7. 1. Middle Preclassic spindle whorl classified as Type H following McCafferty and McCafferty's (2000) typology.

Spindle whorls recovered in late Kanluk contexts at Structure B-2 support this interpretation. In addition to Structure B-2, a few disk-shaped weights have been discovered in Kanluk contexts in Plaza B and the Tolok periphery group¹⁴ (Awe 1992; Cheetham 1996; Horn 2015; Peniche May 2012b; Powis 1996; Powis and Hohman 1995; Table 7.2). Unfortunately, measurements are not available for these implements and,

¹⁴ Cask Pek group may have yielded late Kanluk spindle whorls but Lee (1996) only reports that some modified sherds were drilled.

therefore, it is not possible to assess the quality of the thread that they spun. The same can be said about the spindle whorls associated with early Kanluk contexts. Interestingly, a significant sample of these Kanluk tools (n=11) was recovered from refuse and fill deposits associated with Platform B in the northern group (Horn 2015).

Table 7. 2. Spindle whorls found in early and late Kanluk contexts at Cahal Pech (Awe 1992; Cheetham 1996; Horn 2015; Peniche May 2012b; Powis 1996; Powis and Hohman 1995).

* Items described as drilled disks (Cheetham 1996; Powis and Hohman 1995).

** One spindle whorl was found during the 1990s excavations by Awe (1992), while the other three were discovered during the 2011 field season (Peniche May 2012).

*** Includes items from the end of the early facet and late facet of the Kanluk phase.

Group	Structure/area	Early Kanluk	Late Kanluk
Plaza B	Structure B-4	1	2
	Structure B-2		4**
	Unit 3	1*	
	Unit 10	2	1
	Trench, N	19	11***
	Trench, C		6***
Tolok	Structure B-1, midden		2*
	Structure 14		3
TOTAL		23	29

The modified sherds or *tejos* that exhibited a round and oval shape could have been blanks for disk-shaped spindle whorls. In fact, one specimen exhibited an incomplete conical perforation at its center, indicating that it was intended to become a spindle whorl (Figure 7.2). Alternatively, the unperforated sherds could have functioned as gaming pieces, vessel lids, or beehive stoppers. Modified sherds or *tejos* displaying rectangular and triangular forms also could have functioned as scrapers for ceramic production (see López Varela et al. 2002) or as polishers for soft materials. Thus, *tejos* were likely used for crafting activities.



Figure 7. 2. Disk-shaped *tejo* with an incomplete central perforation.

Other artifacts that may be associated with the textile industry are three irregular ceramic fragments that exhibited conical perforations of diverse dimensions. These perforations did not go through the entire ceramic piece (Figure 7.3). A similar object was discovered associated with the round platform exposed by Garber and colleagues in the southern area (Horn 2015). It is likely that these artifacts served to support spindles during hand-spinning for thread production. Ceramic or gourd bowls were used during the spinning process to have more control over the task and produce a higher quality thread (Ardren et al. 2010; Stark et al. 1998). If the perforated sherds discovered in SW Plaza B were used during hand-spinning, then the resulting thread should have had a slightly better quality despite the size of the whorls and could have allowed the production of soft textiles for clothing. Alternatively, these objects could have been employed to support chert microdrills during the production of shell ornaments (see Chapter 8).



Figure 7. 3. Sherd with incomplete perforations, used for supporting spindles or microdrills.

Personal ornaments also were created by recycling fired clay. Broken pieces of pottery were reshaped into rectangles, squares, or disks and then were further perforated near one edge to serve as pendants. Even the rectangular strap handle of a Savana Orange vessel and a broken vessel appliqué displaying a vulture were modified to be used as pendants (Figure 7.4).



Figure 7. 4. Pendants made of recycled broken vessels. A) Perforated strap of a Savana Orange vessel, B) Triangular pendant made of an Ucu Red vessel, C) Pendant manufactured from a broken vessel effigy displaying a vulture.

Raw clay also was modeled and fired to produce ornaments. Two tubular beads were manufactured using this technique (Figure 7.5). A few similar items have been reported at the early-late Kanluk contexts of the northern group of Plaza B (n=4), the late Kanluk midden in the Tolok group (n=1), and Unit 10 placed in Plaza B (n=3; Cheetham 1996; Horn 2015; Powis and Hohman 1995). Objects of the modeled and fired clay industry also include three small tubular artifacts and objects whose form and function are not established because of their fragmentary condition. Three of these items could have been fragments of censers, suggesting the practice of ritual activity in the area (Figure 7.6).



Figure 7. 5. Tubular beads recovered in late Kanluk contexts beneath Plaza B.



Figure 7. 6. Possible censer fragment made of Jocote paste.

7.2.2 Temporal Distribution

As seen in Table 7.3, Cunil contexts lack small ceramic artifacts. The early Kanluk construction phases exhibit a paucity of small ceramic objects. Only one perforated sherd, two spindle whorls, a round *tejo*, and a tubular bead were found

associated with early Kanluk ceramics. A scarcity of early Middle Preclassic artifacts also was observed in other contexts, such as Structure B-4 and Zubin (Awe 1994; Iannone 1995). Small ceramic artifacts become relatively more common during the latter part of the Kanluk phase, particularly when the Plaza B/11th group was in use. A total of five spindle whorls were associated with these platforms, as were two perforated sherds, four *tejos*, three pendants, and a tubular artifact.

Table 7. 3. Temporal distribution of fired clay artifacts recovered from Middle Preclassic contexts in SW Plaza B.

CONSTRUCTION PHASE	TYPE	SUBTYPE	N
Plaza B 4th	Unidentifiable		1
Plaza B 8 th	Perforated sherd		1
	Spindle whorl	Disk	2
	Tejo	Round	1
Plaza B 9 th	Bead	Tubular	1
Plaza B 10 th	Spherical ball		1
	Pendant		2
	Spindle whorl	Disk	1
	Tejo	Rectangle	2
	Tubular artifact		1
Plaza B 11th-B	Censer		1
	Spindle whorl	Disk	2
	Tejo		1
Plaza B 12th	Pendant		2
	Spindle whorl	Disk	1
	Tejo	Round	1
		Triangle	1
Plaza B 12th-2	Pendant	Perforated strap	1
	Perforated sherd		2
	Spindle whorl	Disk	4
	Tejo	Irregular	2
	Tubular artifact		1
Plaza B 13 th	Bead	Tubular	1
	Censer		1
	Pendant	Zoomorphic	1
			1
	Spindle whorl		1
	Tejo		1
	Tubular artifact		1
TOTAL			39

The fact that disk-shaped spindle whorls were used to produce thick and loose threads using long staple fibers (e.g., palms or agave fibers) is worth noting. This yarn could have been used for basketry. Alternatively, cordage could have had a symbolic use. In the Gulf Coast Olmec and Izapa sculptures, cords were often represented in association with jaguars, animals that carried both terrestrial and celestial associations. Based on these interpretations, it has been suggested that cords were in contact with both supernatural and terrestrial realms and served as a conduit to facilitate the contact between both worlds (Kappelman and Reilly 2001). Consequently, cords “may have been associated with ritual power in Middle Preclassic Mesoamerica” (Follensbee 2008:89) and may have been used to validate the position of leaders. In fact, sculptures depict individuals wearing cords as part of their garment and headdress (Kappelman and Reilly 2001).

Additionally, finer threads could have been obtained in spite of the spindle whorls and the long staple fibers. Nowadays, finer threads are obtained by using the softer innermost leaves of agave plants and by processing them (Parson and Parson 1990; Stark et al. 1998). The count-spinning technique also helps produce a higher quality yarn with agave fiber (Parson and Parson 1990:180). In addition, the use of spindle supports allows a better spinning control and, therefore, a finer thread (Stark et al. 1998). A higher quality thread of agave would have allowed weaving soft textiles for clothing. Thus, the fact that five whorls dated to the Plaza B/11th phase suggests that spinning and textile manufacture were important activities carried out at the end of the Kanluk phase. Nevertheless, as agave textiles were not a valued regional exchange good, these textiles were likely produced for local use.

Although it is possible that cotton spindle whorls were made of perishable materials (Hernández Álvarez and Peniche May 2012), I think that the SW Plaza B household did not have access to cotton as a raw material for spinning. Cotton was highly valuable and, although weaving was practiced across the lowlands, not all regions were suitable for cotton growing such as the Belize Valley (Mason 2002; Stark et al. 1998). This does not mean that people inhabiting SW Plaza B did not wear cotton but if they did, they acquired thread or cloth through exchange networks.

7.3 RITUAL PERFORMANCE: FIGURINES

7.3.1 The Figurines

Figurines are another type of modeled-clay objects recovered from Middle Preclassic contexts in SW Plaza B. Portraying people, animals, and supernatural beings, figurines have fascinated archaeologists because they seem to display “an intimate glimpse” (Triadan 2007:269) into the social conventions of how subjects portrayed themselves, and the social processes of people who produce and use them (Faust and Halperin 2009). Figurines are known across Mesoamerica (e.g., the Olmec Coast area, Central Mexico, Oaxaca, and the Maya area), occurring from the Middle Preclassic through the Postclassic period, although they are rare between 400 B.C. and A.D. 600 (Coe and Diehl 1980; Cyphers Guillén 1993; Grove and Gillespie 1991; Derilo Tway 2004; Drucker 1943; Follensbee 2013; Hepp and Joyce 2013; Lesure 1999a; Marcus 1998, 2009; Porter 1953; Rands and Rands 1965; Vaillant 1930; Weiant 1943; Zweig 2010).

The function of the Mesoamerican figurines has been an enduring concern, because these fired-clay items have been interpreted as having a variety of functions. It has been suggested that figurines were used as children's toys, decorative items, or amulets (Cyphers Guillén 1993; Hammond 1991; Hepp and Joyce 2013; Ruscheinsky 2003). The most accepted interpretation, however, is that these specialized goods held a variety of ritual functions (e.g., Cyphers Guillén 1993; Hendon 2003; Marcus 1998, 2009; Moholy-Nagy 2003; Rands and Rands 1965).

Based on contextual data from the Formative Valley of Oaxaca, Marcus (1996, 2009:27) states that figurines served as vessels to which ancestors could return during domestic ritual practices carried out by women. Alternatively, focusing on the Middle Preclassic figurine collection recovered at Chalcatzingo, Morelos, Cyphers Guillén (1993:209) argues that helmeted and cross-eyed figurines, the principal form used by Olmecs from the Gulf Coast, were associated with domestic ceremonies focused on female life-crisis events. These ceremonies were hosted by the women of leaders' households. Hosting ritual performance with Olmec-like images helped create rights and obligations, which were the means through which power and influence were acquired. From this perspective, figurines were used in domestic ceremonies that tied people together on a public scale of interaction (Hepp and Joyce 2013).

It is important to take into consideration that figurine forms and methods of manufacture changed through time and differed over space (Rands and Rands 1965; Triadan 2007:269). Accordingly, figurine use, function, and meaning also varied through time and, most importantly, between cultural groups (Hammond 1989; Triadan 2007). Grove and Gillespie (1984) provide an example of how the form, meaning, and function

of figurines changed. They argue that Early Preclassic figurines usually portrayed females with large hips and stylized facial details. These were probably used in fertility cults. In contrast, during the Middle Preclassic, figurines exhibited a greater variety, with the Olmec-like figurines portraying male rulers. Like Cyphers Gillén (1993), Grove and Gillespie (1984) point out that these figurines were associated with the ancestor cult, but the ancestors were all deceased male leaders.

Most interpretations give a central role to women because the Middle Preclassic figurines are usually interpreted as depicting females (e.g., Follensbee 2013; Hepp and Joyce 2013; Marcus 2009). Nevertheless, it is worth noting that gender identification is not always straightforward when dealing with Middle Preclassic collections. This period marked the introduction of a figurine form that was gender-neutral and often depicted nude people without clay garments (Flannery and Marcus 1994b:390; Hepp and Joyce 2013; Rands and Rands 1965). The problem of gender assessment is increased by the fragmentary state in which most figurines are uncovered. Few complete figurines haven been recovered from Middle Preclassic contexts. They are usually found broken into heads, appendages, and torsos.

Aside from gender, establishing the specific social uses of these specialized artifacts also is problematic because figurines are often found in fill deposits or middens. Few examples have been discovered in primary contexts, such as burials or caches, making difficult a correct evaluation of their social use (Hammond 1989). Nevertheless, the fact that most figurines are discovered in domestic fill across Mesoamerica suggests that they were mainly used in residential settings. Based on this contextual evidence, Halperin (2014:202) argues that figurines were similar to the Hopi kachina dolls of US

Southwest households. There, *kachinas* were treated as both everyday images displayed and use in residential spaces and sacred objects used in ritual ceremonies.

Figurines were produced and used during the Middle Preclassic throughout the Maya lowlands. These specialized objects have been recovered in the Petén (e.g., Uaxactún), the Pasion River region (e.g., Altar de Sacrificios and Ceibal), northern Belize (e.g., Cuello), and the Belize Valley (e.g., Barton Ramie, Cahal Pech, Pacbitun, and San Jose) (Awe 1992; Cheong 2012; Rands and Rands 1965; Thompson 1939; Willey et al. 1965, Zweig 210). So far, Cahal Pech has yielded the largest sample of Preclassic figurines in the Belize Valley and, perhaps, across the Maya lowlands¹⁵. Although the total number of recovered items in the Cahal Pech figurine collection is unknown, because not all reports include the amount of figurines recovered during the excavations, it includes at least 775 specimens (DeLance 2015; Horn 2015). Of these, 130 figurines are from the Middle Preclassic contexts in SW Plaza B. Like in other collections, the concept of “figurines” at Cahal Pech refers to three different artifact types: figurines, musical instruments, and vessel appliqués. All these objects represented human beings, animals, and some unidentifiable forms (Table 7.4).

¹⁵ A subset of this figurine collection, consisting of 389 figurine fragments recovered from Preclassic contexts, was analyzed by Christina Zweig (2010) as part of her MA thesis. In the last years, however, the collection has increased thanks to the multiple operations undertaken in the acropolis by the BVAR project. Currently, Lisa DeLance is investigating the figurine assemblage (including the 2011-2013 collection from Plaza B) as part of her dissertation research. Focusing on the Preclassic and Classic figurine assemblage, DeLance (2015) has processed a total of 633 figurine fragments. Unfortunately, some specimens lacked contextual data.

Table 7.4. Figurine types uncovered in Middle Preclassic contexts in SW Plaza B.

Form	Anatomy	Frequency
Anthropomorphic	Appendage	43
	Head	29
	Nose	1
	Torso	18
	Complete	1
Zoomorphic	Appendage	1
	Body	1
	Head	5
	Complete	1
Musical instrument	Resonating chamber	2
	Whistle	6
Unidentifiable		22
TOTAL		130

Like most of the Middle Preclassic anthropomorphic figurines (e.g., Lesure 1997, 1999a; Marcus 1996; Rands and Rands 1965), the SW Plaza B specimens were solid and hand-modeled out of clay. Most figurines seemed to be locally made. Their pastes and slips resemble the pottery classified as Savana Orange: Rejolla variety. Some figurines were made of an ashy cream paste, similar to the Cocoyol Cream type. Like their container counterparts, the cream-paste figurines are highly eroded.

The anthropomorphic figurines were recovered from construction fill. Fragments include heads (n=29), appendages (n=43), torsos (n=18), and a nose. The fact that most Middle Preclassic figurines have been recovered in fragmentary stages has intrigued archaeologists. Some researchers state that figurines were subject of natural breakage because joints between heads, limbs and torsos are the weakest points of these artifacts (e.g., Cyphers Guillén 1993; Lesure 2002). Other archaeologists point out that figurine fragments often showed a clean breakage and some even exhibited some defacement (e.g., Grove and Gillespie 1984). Thus, archaeologists argue that figurines were

intentionally fragmented after use as part of their termination, perhaps as a method for killing them or releasing their life spirit or *ch'ulel*. The Cahal Pech figurines seem to support the intentional fracture hypothesis because figurines displayed clean breakage along the neckline, punctuations around the neckline and defacement (Zweig 2010:92).

Only one ceramic figurine was found complete (Figure 7.7). Its discovery context is peculiar. It was the only figurine recovered in a primary context: a cache that included a concentration of freshwater shells. The complete figurine was solid and hand-modeled. Aside from this, it was completely different from all other described specimens. The complete figurine is relatively small, measuring 5.8 cm in height. It is made of dark-brown clay and was finished with a brown slip. It seems to represent an anthropomorphic being but its facial features and superior appendages are just schematic. The being is portrayed as naked, perhaps wearing a small helmet or headdress. It is standing with its hands across the chest and its feet pointing outward. Because of its features, the figurine lacks gender. It is similar to the “Charlie Chaplin” figurines reported elsewhere, although this artifact type is usually associated with caches dating to the Late Preclassic and Classic periods (see Lomitola 2012).



Figure 7.7. Complete figurine discovered as part of a cache.



Figure 7.8. Anthropomorphic torsos depicting gender-neutral and nude individuals in seated and standing position.

All figurine fragments discovered in SW Plaza B portray nude individuals either standing or seated (Figure 7.8). Individuals only wear turban-like headdresses, which display certain stylistic variability (Figure 7.9). Gender was not established due to the absence or ambiguous nature of primary anatomical attributes. For instance, breasts and genitals are not depicted. Reaching the same conclusion, Zweig (2010) points out that body forms are often neutral and, consequently, the identification of female and male figures varies depending on how gender is interpreted. As Marcus (2009) emphasizes, gender could have been signaled through clothing or other signs that did not preserve. Another possibility is that figurines did not require explicit gender to fulfill their function. Although ancestors needed a tangible venue to return to, they did not require a realistic depiction of any specific ancestor. Calling the figurine with the ancestor's name could have been enough to imbue the artifact with the ancestor's spirit and animate it to

participate in ritual ceremonies (Marcus 1998:19). It is also possible that figurines were used as venues for others animate forces from the supernatural realm with which the households tried to communicate during rituals for healing, pregnancy, or childbirth (Denilo Tway 2004).



Figure 7.9. Anthropomorphic figurine heads. Each object portrays a different individual with a different headdress style.

The figurines from SW Plaza B also portray supernatural beings and animals. The best example of supernatural representation consists of a grotesque character's head whose facial features are not well defined (Figure 7.10). Like anthropomorphic objects, zoomorphic figurines are solid and hand-modeled using Jocote, Savana, or Cocoyol pastes (n=8). With the exception of a complete specimen, most faunal figurines were recovered as fragments (i.e., heads, bodies, and limbs). Although Zweig (2010) identified

a variety of animals (feline, frog, howler monkey, dog, armadillo, and some unknown forms), I only recognized a bat (Figure 7.11). The particular form of most zoomorphic figurines was not identified, including the complete specimen and a pendant (Figure 7.12).



Figure 7.10. Figurine portraying a supernatural being.



Figure 7.11. Zoomorphic figurine depicting a bat.



Figure 7.12. Complete figurine with a unknown zoomorphic form.

Figurines also took the form of hollow objects that functioned as musical instruments. These are made of ashy-cream, orange-brown, and orange pastes. With the

exception of one specimen with an orange-red slip, all items are unslipped. The category of musical instrument includes whistles in several stages of completeness, such as three mouthpieces, two resonating chambers, and three complete or almost complete whistles (Figure 7.13). Mouthpieces and resonating chambers were likely fragmented *ocarinas* or three-tone whistles. Some zoomorphic heads were probably part of these particular objects because most ocarinas in Cahal Pech are zoomorphic in form, as Zweig (2010) has concluded. There exists the possibility that wind instruments also were ritually terminated after their use.



Figure 7.13. Musical instruments discovered beneath Plaza B. The object at the right has one single stop, while the other two at the left exhibited several stops.

Because musical instruments fall into the figurine category, one can argue that they held a similar function to anthropomorphic figurines. This notion, however, needs to be tested because the particular form of these objects differs from the solid

anthropomorphic figures. For instance, Triadan (2007, 2014) has examined the musical instruments discovered in Aguateca. She argues that musical instruments depicting animals, women, men, and supernatural beings were used to play music in domestic performances, which were public but which had a limited audience. These performances could have been part of rituals but, because the instruments were recovered from domestic middens, they probably did not have a purely ritual function. The whistles of the SW Plaza B could have been used to play music during rituals, as well as daily mundane performances. Wind instruments also could have served as toys for children. So far, the social use of these instruments remains poorly understood.

7.3.2 Temporal and Spatial Distribution of Cahal Pech Figurines

Establishing the temporal and spatial distribution of Middle Preclassic figurines from the acropolis and peripheral groups is a real challenge since contextual information from excavations is inconsistent, ranging from very detailed to absent (Zweig 2010). Table 7.5 and Figure 7.14 present figurine data from Cahal Pech based on the information provided by excavation reports of Plaza B, Cas Pek, Tolok and Zubin, as well as the database of the artifacts recovered during the 2011-2013 excavations in SW Plaza B. Unfortunately, morphological classification into musical instruments, anthropomorphic, and zoomorphic categories was not mentioned in most reports (Awe 1992; Iannone 1995; Lee 1996; Lee and Awe 1995; Peniche May 2012b; Powis and Hohman 1995; Powis 1996). In addition, relative percentages were not calculated because of the lack of information about ceramic fragments discovered in the different contexts. Temporal

distribution of Middle Preclassic figurines recovered in SW Plaza B is displayed in Table 7.6 and Figures 7.15, 7.16, and 7.17.

Table 7. 5. Temporal and spatial distribution of figurines recovered at Cahal Pech (Awe 1992; Iannone 1995; Lee 1996; Lee and Awe 1995; Peniche May 2012b; Powis and Hohman 1995; Powis 1996; Zweig 2010).

- * Corresponds to the Plaza B 10th construction phase.
 ** Corresponds to the Plaza B 11th-A construction phase.
 *** Specimens discovered during the 2011-13 excavations.

Phase	Group	Structure/ Area	Frequency
Cunil	Plaza B	Str. B-4	5
		PU-94-1	2
		SW Plaza B	***1
Early Kanluk	Plaza B	Str. B-4	29
		Unit 3	5
		Units 4 & 8	5
		SW Plaza B	***20
		Trench, N	5
		Trench, S	3
	Zubin	C9-8 th	1
	Early-Late Kanluk	Plaza B	Trench, N
Trench			92
Late Kanluk	Plaza B	Str. B-2	12
		Str. B-4	56
		PU-94-1	48
		Unit 10	*13
			**2
		SW Plaza B	***109
	Cas Pek	Central platform	3
		Str. A	18
	Tolok	Str. 1, midden	12
		Str. 14	7
	Zubin	C9-7 th	4
		C9-6 th	5
TOTAL			497

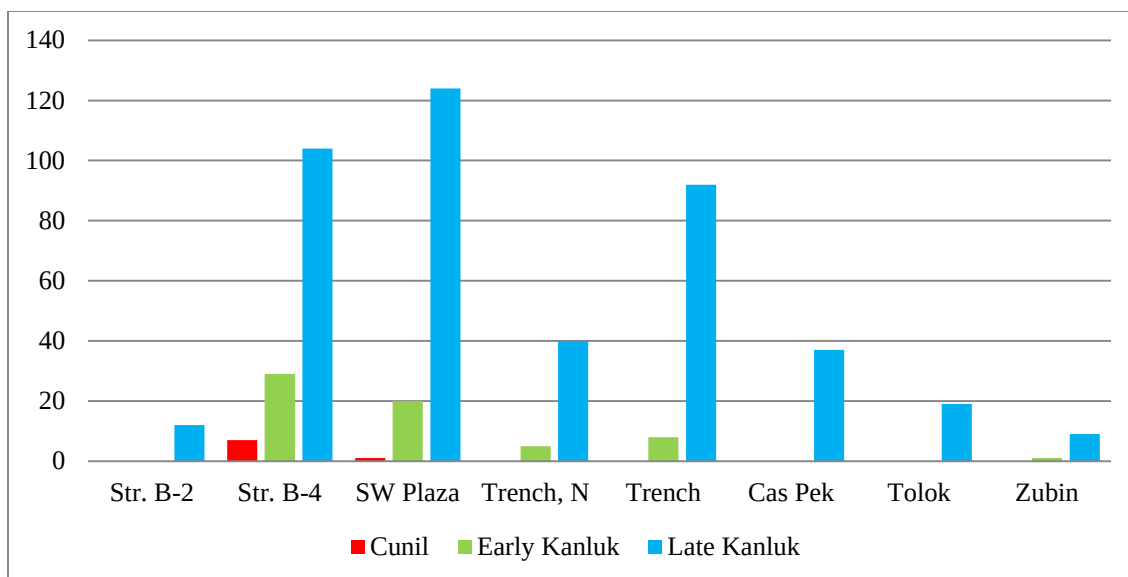


Figure 7.14. Temporal and spatial distribution of figurines by area and ceramic phase.

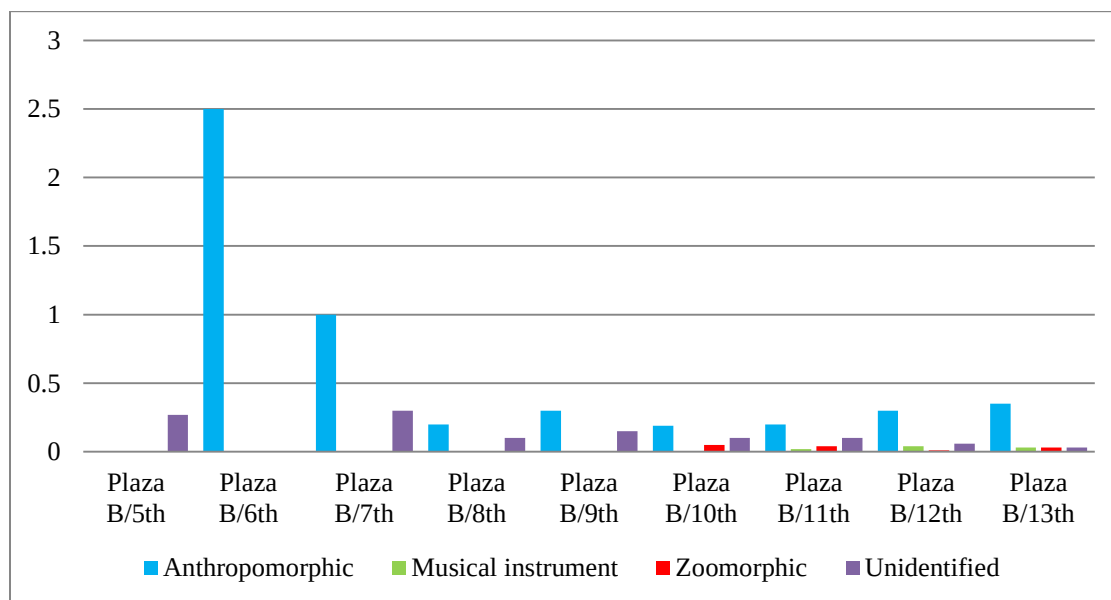


Figure 7.15. Percentages of ceramic figurines by construction phase relative to the number of ceramic fragments.

Table 7.6. Temporal distribution of figurines recovered in SW Plaza B.

Construction Phase	Form	Condition	Frequency	% (N/Sherds)
Plaza B 5 th	Unidentified		1	0.3
Plaza B 6 th	Anthropomorphic	Appendage	3	2.5
		Torso	1	
Plaza B 7 th	Anthropomorphic	Appendage	1	1.3
		Head	2	
	Unidentifiable		1	
Plaza B 8 th	Anthropomorphic	Head	1	0.3
		Torso	1	
	Unidentifiable		1	
Plaza B 9 th	Anthropomorphic	Appendage	3	0.5
		Head	2	
		Torso	1	
	Unidentifiable		3	
Plaza B 10 th	Anthropomorphic	Appendage	4	0.4
		Head	1	
		Torso	2	
	Zoomorphic	Head	1	
		Complete	1	
	Unidentifiable		4	
Plaza B 11 th -A	Anthropomorphic	Torso	1	0.3
Plaza B 11 th -B	Anthropomorphic	Appendage	6	
		Head	4	
		Torso	1	
	Musical instrument	Complete?	1	
	Zoomorphic	Appendage	1	
		Head	2	
Plaza B 11 th -C	Unidentifiable		2	0.4
Plaza B 12 th	Anthropomorphic	Appendage	11	
		Head	7	
		Torso	4	
		Nose	1	
		Complete	1	
	Musical instrument	Resonating chamber	1	
	Zoomorphic	Head	2	
	Unidentifiable		5	
Plaza B 12 th -2	Anthropomorphic	Appendage	12	
		Head	8	
		Torso	4	
	Musical instrument	Resonating chamber	1	
		Whistle	4	
	Unidentifiable		4	
Plaza B 13 th	Anthropomorphic	Appendage	3	0.5
		Head	4	
		Torso	3	
	Musical instrument	Whistle	1	
	Zoomorphic	Body	1	
	Unidentifiable		1	
TOTAL			130	

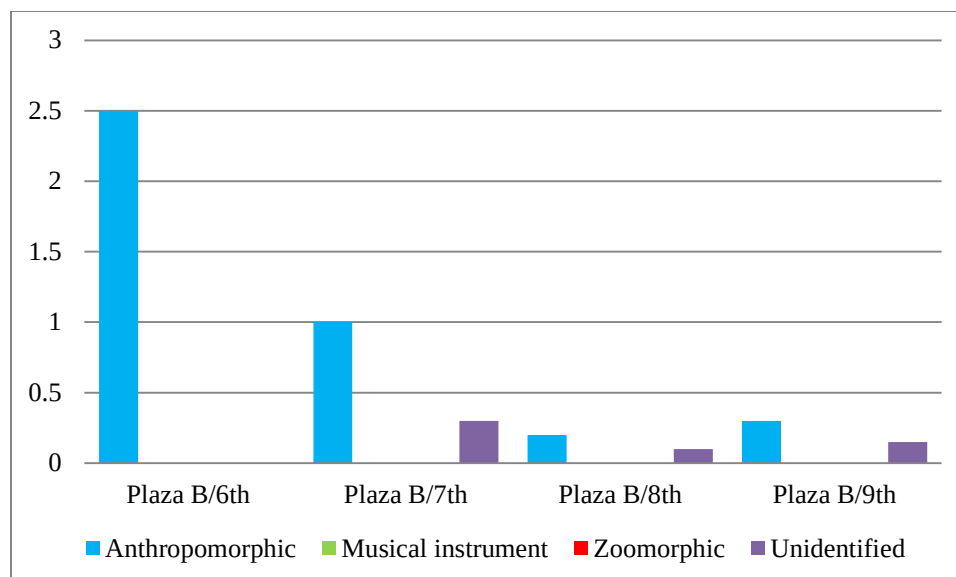


Figure 7.16. Percentages of figurines recovered in early Kanluk contexts in SW Plaza B relative to ceramic fragments.

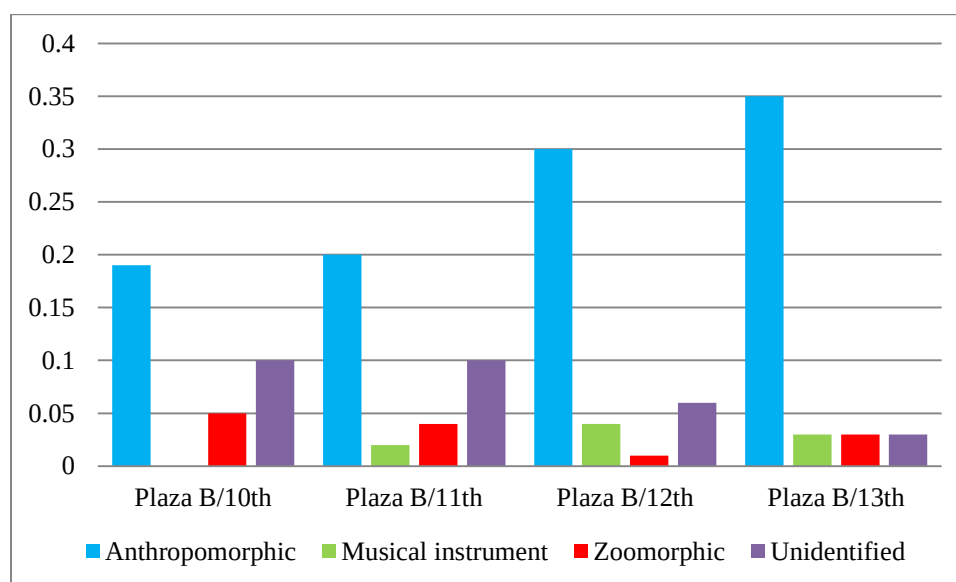


Figure 7.17. Percentages of figurines recovered in late Kanluk contexts in SW Plaza B relative to ceramic fragments.

During the Cunil phase, known figurines are limited to the space occupied by Structure B-4, the oldest constructed area at Cahal Pech and most likely the residence of the Cahal Pech founder's household (Awe 1992). These figurines were recovered from

construction fill. The structures located in SW Plaza B did not yield figurines, although the possibility exists that this is a result of the excavation strategies used for these early contexts.

Figurines appeared in SW Plaza B until the early facet of the Kanluk phase (Figures 7.15 and 7.16). All these figurines portrayed human beings. The relative numbers of figurines based on the frequency of sherds suggests that people occupying the early Kanluk buildings consumed a larger amount of figurines compared to the late Kanluk inhabitants of SW Plaza B, particularly during the Plaza B/5th and Plaza B/6th construction phases. The relative numbers of figurines decreased significantly during the following Plaza B/7th construction phase. This may indicate that, at the onset of the Kanluk phase, the performance of ancestor veneration rituals was particularly important for the people occupying SW Plaza B. During the early facet of the Kanluk phase, Structure B-4 yielded a similar amount of figurines to SW Plaza B implying that ancestor veneration rituals continued to be performed in Structure B-4, even when this building had become public in character.

Beyond Structure B-4 and SW Plaza B, figurines also appeared in smaller amounts in spaces in front of Structures B-1 and B-7 (Cheetham 1996). Platform B in front of Structure B-6 also yielded a significant amount of figurines dating to the end of the early facet and the late facet of the Kanluk phase (Garber and Awe 2008). Figurine fragments beneath Platform B also displayed anthropomorphic forms and included one headless figurine and two heads. These three fragments have been interpreted as part of a complex cache program associated with the change in function of this building, from private to public. The anthropomorphic figurines could have represented an ancestor who

was buried beneath the southeast corner of this building (Garber and Awe 2008; see Chapter 3). Interestingly, the use of figurines in this cache implies that they were regarded as objects with sacred value. Nevertheless, most early Kanluk figurines were discovered in construction fill suggesting that they may have not been considered as inalienable possessions but everyday items (Halperin 2014).

Except for one fragment reported in Structure C9-8th of Zubin, the occurrence of figurines seems to be limited to the core area of Cahal Pech during the early facet of the Kanluk phase. Interestingly, the presence of figurines in Structure B-4 and Structure C9-8 of Zubin indicates that these specialized objects were likely used in public spaces as well as in domestic settings. It is also worth noting that the spatial distribution of figurines in the site core suggests that the rituals of ancestor veneration were not exclusive to a single household during the early Kanluk phase, although they were mainly performed in the southern area of Plaza B.

Figurines were more commonly used in the periphery during the second part of the Kanluk phase (Ianonne 1996; Lee and Awe 1995; Powis 1996; Powis and Hohman 1995). The late Kanluk residence at Cas Pek provided the largest sample of figurine fragments in the periphery, followed by Structure 1 of Tolok. Interestingly, both residences were the oldest places of construction in their respective groups, perhaps serving as the residences of the founder's households. Figurines also occurred in public buildings in the Tolok and Zubin periphery groups (i.e., Structure 14 of Tolok and Structures C9-7th and C9-6th of Zubin), although their numbers in those contexts were very low. In Zubin, two figurine fragments were discovered in an "apparent cache-like arrangement" in front of the retaining wall of Structure C9-7th, which served as

dedicatory deposit for the later Structure C9-6th (Iannone 1995:46). Although most figurines were recovered as part of the construction fill of domestic public buildings, these specialized objects also were used in caches and the fill of public structures, again, implying that they were both sacred and everyday objects (Halperin 2014).

Even though peripheral groups yielded figurines, by far, the majority of late Kankuk fragments have been discovered in Plaza B (n=240, 78.7%). Other areas of the site core occupied during the late Kanluk have yielded only a few figurines or none at all. In Plaza B, these specialized objects were concentrated on the southern area, where the oldest constructions of the entire site were built (Awe 1992; Cheetham 1995, 1996; Peniche May 2013, 2014b). It is quite interesting that Structure B-4, which served public functions during the late Kanluk, yielded as many figurines as the SW Plaza B. The occurrence of figurines in Structure B-4 and the public buildings at Tolok and Zubin corroborates that the use of these items was not restricted to domestic spaces.

Based on the contextual evidence, Awe (1994) has argued that figurines were associated with the worship and veneration of male ancestors representing the heads of different lineages at the site. This interpretation is highly plausible based on the fact that figurines: (1) were concentrated on the southern area of Plaza B where the oldest Cahal Pech constructions were placed; (2) were discovered in the oldest constructions of the periphery groups that were likely occupied by the founders' households, and (3) were used in caches indicating the ritual meaning and sacred value of these artifacts. Nonetheless, most figurines do not display explicit attributes that allow gender to be determined. Therefore, even though figurines were likely used in ceremonies to worship ancestors, it is not possible to establish whether those ancestors were male or female. As

Marcus (1998) has argued, portraying a specific gender may have not been required. Calling the figurine by the ancestor's name could have been enough to imbue the object with the ancestor's soul-force or *ch'u'lel*.

The practice of ancestor veneration ceremonies may have increased throughout the late facet of the Kanluk phase. In the SW Plaza B, for instance, Structure Plaza B/9th built at the beginning of late Kanluk yielded nine figurine fragments or 3% of the late-Kanluk figurine collection considered in this research. At the end of the Kanluk phase, when the Plaza B/11th group was occupied, the concentration increased to 21.3%. Nevertheless, when the relative percentages of all types of figurines are considered, the increasing importance of these specialized objects during the late facet is not corroborated (Figure 7.17). These percentages remained relatively constant from the second part of the early facet of the Kanluk phase to the end of the Kanluk phase (Table 7.6, Figure 7.15), suggesting that the frequency in which ancestor veneration ceremonies were performed did not vary during most of the Kanluk phase. In contrast, the relative percentage of anthropomorphic figurines increased through the late facet of the Kanluk phase (Figure 7.17). If this type of figurine is related to the frequency in which ancestor veneration rituals were performed, then the performance of these ceremonies increased through the late facet of the Kanluk phase, particularly when the Plaza B/11th group and the cobbled platform Plaza B/12th were in use.

It is likely that music was played while ancestors were venerated and worshiped during the late facet of the Kanluk phase. The figurine collection recovered in SW Plaza B reveals that, during the second part of the Kanluk phase, solid zoomorphic figurines and musical instruments were used for the first time along with the anthropomorphic

forms. In Halperin's (2014:203) words, "[m]usical production as a performative act bridges the sacred and magical qualities of some rituals with entertainment and play." Music in this sense could have facilitated the participation of different groups of people, particularly in terms of age.

If we take into consideration the large open space surrounding the round platforms in use during the Plaza B/9th, Plaza B/10th and Plaza B/11th construction phases, it is possible that ancestor veneration rituals were witnessed by a larger audience than the hosting household. Neighboring households could have participated either directly or indirectly. The involvement of other households is highly significant as differential participation in the ceremonies dedicated to worshipping the founder may have contributed to social distinctions among households and individuals. The domestic and public constructions placed in the SW Plaza B must have played an important role in the Cahal Pech community. Those structures that were highly visible may have been important in building a sense of community and ceremonies may have been means of manipulating existing social norms and reinforcing new sociopolitical orders and ideologies.

Interestingly, veneration of ancestors was not an activity restricted to the households occupying Plaza B. Figurines also have been found in some residences and public structures located in the periphery. Nevertheless, the low numbers of figurine fragments in the peripheral structures indicates that those ceremonies were conducted sporadically. This implies two things. First, peripheral households were not as old as those of Plaza B. Second, the founder's household did not have enough economic or ideological resources to turn their ancestors into those of the entire community, although most likely they were the most prominent ones.

7.4 SUMMARY

Even though small clay artifacts have not been the focus of many studies, they provide important information about daily activities conducted in domestic settings. Individuals occupying SW Plaza B engaged in recycling broken fragments of vessels to manufacture tools, such as spindle whorls and rests. Spindle whorls and rests were used to spin threads of varied quality, ranging from double-thread to cordage. The thick and loose threads could have been employed for basketry or as power symbols indicating a connection with the supernatural realm, while the highest quality yarn could have been used to weave textiles for clothing. Evidence of the spinning of cotton yarn was not found, which means that cotton was not imported in raw form. The role of weaving in the Kanluk community of Cahal Pech is hard to assess because we do not have enough information from other spaces. Based on the evidence from the northern lowlands and later periods, however, I can suggest that weaving was mainly an elite activity. This is because ceramic whorls have not been found in non-elite spaces. In addition to clothing, beads and pendants also were manufactured as ornaments. The use of fragmented vessels to produce ornaments suggests that the vessels could have been regarded as heirlooms or inalienable possessions, which did not lose their meaning even when they were broken.

Figurines also offer valuable information. These items were the venue through which ancestors' *ch'u'lelo'ob* were invoked in order to be venerated and worshipped. During the Cunil phase, these rituals dedicated to venerated ancestors were restricted to Structure B-4, a space that was probably inhabited by the founder's household of Cahal Pech. This may imply that, during the Cunil phase, the Structure B-4 household was the only one with ancestors in the Cahal Pech community. During the early facet of the

Kanluk phase, the performance of ancestor veneration rituals spread. People occupying the SW Plaza B and the northern architectural group also consumed figurines. Nevertheless, the largest amount of figurines was concentrated in the southern area of Plaza B that included the structures in SW Plaza B and Structure B-4. The relative percentage of figurines from SW Plaza B reveals that this social group consumed the largest amount of figurines during the onset of the Kanluk phase.

During the late facet of the Kanluk phase, figurines were concentrated in the oldest constructed spaces of Plaza B. People inhabiting Structure B-4 and the construction in SW Plaza B performed ancestor veneration ceremonies on a regular basis. The importance of these rituals may have increased through the second part of the Kanluk phase, particularly when the Plaza B/11th architectural group and the cobbled platform Plaza B/12th were in use. In addition, the performance of these rituals may have been different from those practiced during the early facet of the Kanluk phase. The late Kanluk rituals included music and, perhaps, a more varied audience in terms of gender and age. Neighboring households could have been involved indirectly in those ceremonies. This suggests that the ancestors of the SW Plaza B social group were prominent in the community, perhaps because they were the founders of Cahal Pech. Through these ritual events, the founder's household could have manipulated social norms and beliefs to reinforce and naturalize the emerging sociopolitical order.

Nevertheless, the household inhabiting SW Plaza B did not have enough economic and symbolic resources and, therefore, power over other households to forbid the worship of their ancestors. Founder households of Cas Pek and Tolok also invoke and venerate their own ancestors. As the figurine collection suggests, however, ancestor

vention ceremonies were sporadically performed in the peripheral structures, perhaps suggesting that they were less prominent in the Cahal Pech community and that fewer people participated in them.

The figurine data supports my main hypothesis: on the onset of the Kanluk phase, there was an important change in the ideology of Cahal Pech community. This change is reflected in an increase in the ancestor veneration performance in SW Plaza B. The people occupying this location were manipulating symbolic sources of power with great intensity, along with economic sources of power (Chapter 6). All this suggests a change in the political organization of Cahal Pech, in which the people inhabiting SW Plaza B became elites and a chiefdom political formation emerged. Due to the nature of the rituals and their concentration in the southern architectural group, I believe the emergent Cahal Pech elites organized their political economy following the principles of a network system. During the late facet of the Kanluk phase, the elites occupying the southern area of Plaza B continued employing exclusionary power strategies, in which elites continued manipulating symbolic sources of power. Thus, although other social groups practiced ancestor veneration rituals, the southern social group restricted the practice of these ceremonies and used them to differentiate themselves from the other social groups.

CHAPTER 8.
HUNTING, FISHING, EXCHANGING AND CONSUMING: TERRESTRIAL,
RIVERINE AND MARINE RESOURCES

8.1 INTRODUCTION

To date, the understanding of Middle Preclassic Maya utilization of faunal resources is vague due to the paucity of data (Stanchly 1995), although the northern Belize sites of Cuello (Wing and Scudder 1991), Cerros (Carr 1985), Colha (Masson 2004a), and K'axob (Masson 2004b) are notable exceptions. One of the purposes of the excavations at Cahal Pech throughout the 1990s was to expand our knowledge about the exploitation of animal resources by Preclassic people. This western Belizean site has yielded one of the largest samples of faunal remains dating to Preclassic times (n=14,408; Stanchly 1992, 1993, 1994, 1995; Stanchly and Dale 1992). Based on this data, it has been established that people from Cahal Pech exploited a variety of terrestrial, marine, and riverine resources.

The exploitation of a variety of resources also was demonstrated during the 2011-2013 excavations. Freshwater shells, marine shells, and vertebrate remains were found in the Middle Preclassic contexts at SW Plaza B¹⁴. This faunal assemblage consists of 11,408 specimens, which have expanded the sample of the site and have shed light on patterns of procurement, consumption, and exchange, as well as the social use of faunal resources.

¹⁴ It is worth noting that the use of a ¼ inch mesh for screening is generally biased against the recovery of small faunal remains, such as fish and small rodent bones (Masson 2004b).

In order to analyze the faunal collection, I first divided the faunal remains into vertebrate and invertebrate. The vertebrate remains were analyzed by Martin Welker (2016) from Pennsylvania State University. Welker (2016) used a reference collection located at the Pennsylvania State University Zooarchaeological Laboratory, relevant reference manuals, and osteological atlases (Elbroch 2006; Gilbert 2003). Welker (2016) identified the lowest zoological taxa possible (i.e., class, order, family, genus, and species). When mammal bones were not identifiable at the family or genus level, they were classified into broader taxonomic groups, such as large, medium, or small mammals¹⁵ (see Emery 2007). The samples were quantified according to the relative frequency of counts of bone fragments (NISP) according to taxon and element. When applicable, element side, and element portion also were recorded. In addition, Welker (2016) registered burn or cut marks on both identifiable and unidentifiable specimens. Bone weight also was recorded individually for all identified specimens, and by size-sorted group for all unidentified remains from any given context. Minimum number of individuals (MNI) was not calculated because of the small size of the sample.

I analyzed the invertebrate assemblage. First, I divided marine and riverine shells into unworked shells, worked shell, and debitage. I classified the worked shells following Hohman's (2002; see also Cochran 2009:46-47) typology, which classifies the worked shells into types and subtypes based on formal distinctions. I recorded metric attributes for each worked shell including length, width, thickness, and weight. I

¹⁵ The large mammal category includes *Odocoileus virginianus* (white-tailed deer), *Mazama americana* (brocket deer), *Tapirus* sp. (tapir), and *Tayassu* sp. (peccary). Medium-sized mammals consist of *Canis familiaris* (domestic dog), *Dasypus novemcinctus* (armadillo), *Didelphis* spp. (opossum), *Dasyprocta punctata* (agouti), *Agouti paca* (paca), *Sylvilagus* spp. (rabbit), and Procyonidae (raccoons). The small mammal category is comprised of small rodents such as *Orthogeomys* spp. (gophers), Cricetidae (mice), and Sciuridae (squirrels) (see Boileau 2012).

classified all riverine and marine shells, attempting to identify the lowest zoological taxon possible. I recorded the number of identifiable specimens (NISP). When the situation demanded it, I registered the elements or portions as well. I also divided the freshwater shells into arbitrary size classes to register the dimensions of the shells and explore changes in the size of specimens through time.

As result of the classifications, I identified seven classes of fauna. Aves, mammalia, and reptilian species composed the sample of vertebrate remains. The invertebrate fauna consisted of brachyuran, scaphopoda, gastropoda, and pelecypoda specimens (Table 8.1).

Table 8.1. Classes of fauna represented in the Middle Preclassic assemblage from SW Plaza B.

Class	Frequency	Percentage
Mammalia	373	3.27%
Reptilia	27	0.24%
Aves	5	0.04%
Unknown bone	44	0.39%
Brachyura	1	0.01%
Scaphopoda	1	0.01%
Gastropoda	7,694	67.44%
Pelecypoda	3,263	28.60%
Total	11,408	100%

8.2 VERTEBRATE RESOURCES

The vertebrate assemblage consisted of 449 remains (Table 8.2). These faunal remains were heavily fragmentary and badly eroded. Thirty-five specimens were identifiable by element to a taxon lower than class. This sample included seven families, seven genera, and four species. Most of the sample, however, consisted of bone

fragments identifiable only to the class level (n=343, 76.4%). Forty-four bone fragments (9.8%) were not identifiable to a taxonomic class.

Table 8. 2. Vertebrate faunal remains recovered in the Middle Preclassic contexts of SW Plaza B.

Taxon (genus, specie)	Common name	Frequency	Percentage	Weight
<i>Mazama americana</i> (?)	Brocket deer	3	0.67	13.2
<i>Odocoileus virginianus</i>	White-tailed deer	16	3.56	147.9
<i>Odocoileus virginianus</i> (cf)	White-tailed deer (cf)	7	1.56	50.6
<i>Odocoileus virginianus</i> (?)	White-tailed deer?	1	0.22	2.1
<i>Tapirus</i> sp. (cf)	Tapir	27	6.01	89.2
Large mammal		203	45.21	201.1
Total large mammal		257	57.22	504.1
<i>Canis familiaris</i> (cf)	Domestic dog	1	0.22	4.9
<i>Canis</i> sp.	Domestic dog / coyote	1	0.22	1.5
Agouti / paca	Agouti / gibbon	2	0.44	1.6
<i>Nasua</i> sp.	Coati	1	0.22	1.8
<i>Sylvilagus</i> sp.	Rabbit	2	0.44	0.4
Medium mammal		88	19.60	64.3
Total medium mammal		95	21.14	74.5
Small mammal		6	1.37	2.0
Unidentified mammal		15	3.34	2.0
Total small and unidentified mammals		21	4.71	4.0
Aves		3	0.67	1.0
Aves (?)		2	0.44	6.6
Total aves		5	1.11	7.6
Iguanidae (cf)	Iguana	1	0.22	0.8
Sea turtle		26	5.79	25.3
Total reptilia		27	6.01	26.1
Unknown		44	9.80	7.0
TOTAL		449	100.00	623.3

Mammals were the most frequently identified animals in the sample. Among them, the most significant taxa were represented by large mammals, such as white-tailed deer, brocket deer, tapir, and unidentified large mammals (57.22% of the total vertebrate faunal sample). Deer dominated the large mammal collection with most of the elements classified as part of the limbs. As in other faunal assemblages recovered across the lowlands, two species of deer were represented in the vertebrate sample: the white-tailed

deer and the brocket deer. Larger white-tailed deer is known to have been the preferred source of meat since the Middle Preclassic period. These deer contributed large amounts of meat and protein to the diet (Masson 2004b; Stanchly 1995, 1999; Stanchly and Dale 1992; Wing and Scudder 1991). Wild venison was hunted for this purpose, and they also could have been tamed on occasion to be used in ritual ceremonies (Pohl and Fieldman 1982; White et al. 2004). In some cases, they were also part of ritual deposits. Pohl (1985:141 in Stanchly and Dale 1992), for example, has stated that the hind legs often were served as offerings.

Medium-sized mammals, such as dogs, coyotes, coatis, agoutis, gibnuts, rabbits, and unidentified mammals (20.04%) also were significant in the collection recovered in SW Plaza B. During the Classic period, dogs were the only domesticated animals and surely played an important role in households for hunting, guarding, food, and rituals (White et al. 2004). It is not known whether they fulfilled the same role during the Middle Preclassic, but data from several sites (e.g., Cahal Pech, Colha, Cuello, K'axob, Laguna de On, Pacbitun, and Pulltrouser Swamp) indicate that these animals were domesticated and consumed since this early time (Clutton-Brock and Hammond 1994; Masson 2004a, 2004b; Stanchly 1995, 1999). Nevertheless, at Cahal Pech, they do not appear to have been an important source of mammal protein, because only two specimens were identified (Welker 2016). These data contrast what was observed at Cuello (Clutton-Brock and Hammond 1994) and K'axob (Masson 2004b), where significant amounts of dogs were consumed. Rabbit, agouti, and gibnut were utilized by other Middle Preclassic sites as well, but they are less frequent (e.g., Masson 2004a; Stanchly 1999). Finally, rodents and small mammals are a minor component of the sample

(2.25%), as are birds (1.1%) and reptiles (6.01%). This could be a result of preservation or the recovery techniques (e.g., the use of a ¼ inch mess for screening).

The distribution of vertebrae remains by construction phase is displayed in Tables 8.3 and Figure 8.1. Except for one radius of a white-tailed deer, no faunal remains were recovered in Cunil contexts. During the early facet of the Kanluk phase, only the fill of Plaza B/5th and Plaza B/7th construction phases yielded faunal remains. These remains included large mammals, medium-sized mammals, and Iguanidae. Most of the bones were not identifiable. Three bone fragments classified as medium-sized mammal presented evidence of being scored and broken. Similar processed bones recovered at Aguateca (Emery and Aoyama 2007), Dos Pilas (Emery 2008, 2009) and Xunantunich (Freiwald 2010) have been interpreted as Stage 1 debitage from bone perforator production or bone ornament manufacture.

Interestingly, the percentage of vertebrate faunal remains relative to the frequency of sherds indicates that people occupying SW Plaza B consumed the largest percentage of fauna at the onset of the Kanluk phase (Figure 8.1). Nevertheless, except for some unknown fragments, the other early Kanluk contexts did not yield vertebrate faunal remains. This could be a result of the poor preservation of faunal remains or a consequence of the recovery techniques that were employed during the excavations.

Table 8.3. Vertebrate faunal assemblage recovered from the Middle Preclassic contexts in SW Plaza B.

Construction phase	Taxon	N	% (N/Sherds)
Plaza B / 4 th	<i>Odocoileus virginianus</i> (cf)	1	0.007
	TOTAL	1	0.007
Plaza B / 5 th	Iguanidae (cf)	1	0.003
	Large mammal	2	0.006
	Medium mammal	3	0.008
	Unknown	9	0.025
	TOTAL	15	0.042
Plaza B / 7 th	Unknown	8	0.022
	TOTAL	8	0.022
Plaza B / 9 th	<i>Odocoileus virginianus</i>	1	0.0005
	<i>Odocoileus virginianus</i> (cf)	2	0.001
	Large mammal	5	0.003
	Medium mammal	5	0.003
	Unknown	4	0.002
	TOTAL	17	0.0095
Plaza B / 10 th	<i>Mazama americana</i> (?)	1	0.0003
	<i>Odocoileus virginianus</i> (?)	1	0.0003
	<i>Odocoileus virginianus</i> (cf)	2	0.0005
	<i>Nasua</i> sp.	1	0.0003
	<i>Sylvilagus</i> sp.	1	0.0003
	Large mammal	45	0.012
	Medium mammal	21	0.006
	Small mammal	1	0.0003
	Unidentified mammal	1	0.0003
	Unknown	3	0.0008
	TOTAL	77	0.0208
Plaza B / 11 th -A	Small mammalia	1	0.0002
Plaza B / 11 th -B	<i>Odocoileus virginianus</i>	4	0.0007
	<i>Odocoileus virginianus</i> (cf)	2	0.0004
	<i>Sylvilagus</i> sp.	1	0.0002
	<i>Tapirus</i> sp.??	27	0.023
	Aves	2	0.0004
	Large mammal	33	0.006
	Medium mammal	18	0.003
	Unidentified mammal	12	0.002
	Unknown	9	0.002
	TOTAL	109	0.0377
Plaza B / 12 th	<i>Odocoileus virginianus</i>	8	0.0005
	<i>Canis familiaris</i> (cf)	1	0.00006
	Large mammal	40	0.003
	Medium mammal	14	0.001
	Small mammal	4	0.0003
	Unknown	7	0.0004

Table 8.3. Vertebrate faunal assemblage recovered from the Middle Preclassic contexts in SW Plaza B (Continuation).

Construction phase	Taxon	Frequency	N/Sherds
Plaza B / 12 th	<i>Odocoileus virginianus</i>	8	0.0005
	<i>Canis familiaris</i> (cf)	1	0.00006
	Large mammal	40	0.003
	Medium mammal	14	0.001
	Small mammal	4	0.0003
	Unknown	7	0.0004
Plaza B / 12 th -2	<i>Canis familiaris</i> / <i>Canis lupus</i>	1	0.00006
	<i>Cuniculus paca</i>	2	0.0001
	<i>Mazana americana</i> (?)	1	0.00006
	<i>Odocoileus virginianus</i>	3	0.0002
	Aves (?)	2	0.0001
	Large mammal	78	0.005
	Medium mammal	26	0.002
	Sea turtle	26	0.002
	Unknown	4	0.0003
TOTAL		217	0.00982
Plaza B / 13 th	<i>Odocoileus mazana</i> (?)	1	0.0003
	Bird	1	0.0003
	Medium mammal	1	0.0003
	Unidentified mammal	2	0.0007
TOTAL		5	0.0016

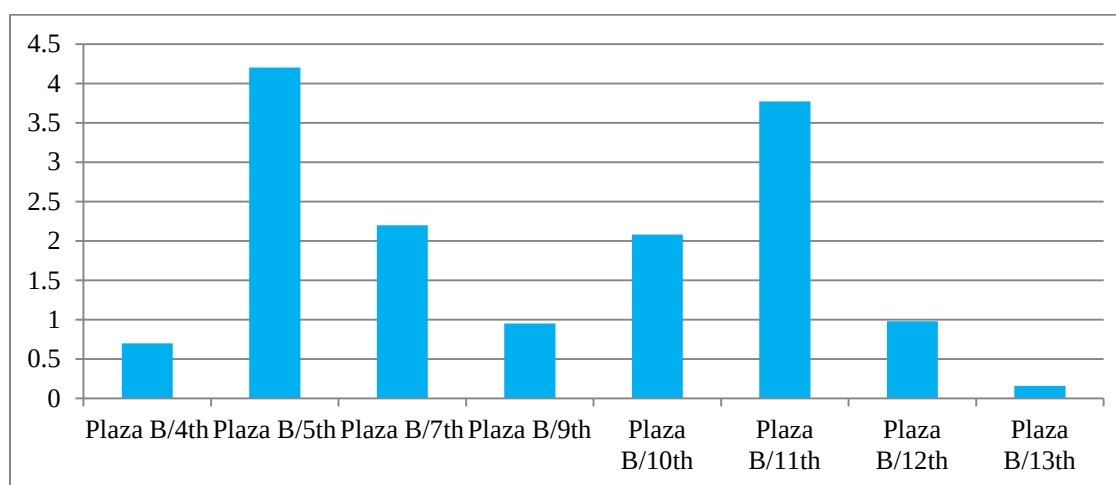


Figure 8.1. Percentage of vertebrate fauna by construction phase relative to the frequency of ceramic fragments.

The only other assemblage from Cahal Pech dating to the early Kanluk phase was found during the excavations of Structure B-4 (Stanchly and Dale 1992). This building displayed a greater variety of faunal remains than the space westwards (Table 8.4). The mammalia class included deer, peccaries, dogs/coyotes, opossums, and rabbits. Crocodile remains were present, as well as fish, and birds. Structure B-4 also yielded a large amount of these faunal remains, which contrasts with the few bones recovered in the SW Plaza B. The particular amount and variety of fauna remains in Structure B-4 could have been associated with the activities conducted in this public space (e.g., feasts). Nevertheless, it is worth noting that this comparison is based on raw numbers. Relative frequencies were not calculated for the sample of Structure B-4, because the frequency of ceramic sherds recovered in this structure was not available.

Table 8.4. Vertebrate fauna assemblage recovered in Cunil and early Kanluk contexts at Structure B-4 and SW Plaza B (Stanchly and Dale 1992).

Taxon	Structure B-4	SW Plaza B
<i>Odocoileus virginianus</i>	16	
<i>Odocoileus virginianus</i> (cf)	--	1
<i>Mazama Americana</i>	2	--
<i>Cervidae</i> sp.	6	--
<i>Tayassu</i> sp.	2	--
<i>Canis</i> sp.	14	--
<i>Didelphis marsupialis</i>	12	--
<i>Sylvilagus brasiliensis</i>	11	--
Unidentified mammals	9	5
<i>Crocodylus</i> sp.	41	--
Turtle	1	--
Iguanidae (cf)	--	1
Fish	11	--
Aves	3	--
Unknown	579	17
TOTAL	707	24

The late Kanluk construction phases of SW Plaza B yielded a greater variety of faunal remains than the early Kanluk contexts (Table 8.3). Fill used to construct the rectangular platform Plaza B/9th produced eight large mammal specimens. Among them, three white-tailed deer bones were identified. Based on this, it is likely that the other large mammals also were deer, although they could have been remains of peccary or tapir. Five medium-sized mammals also were registered, as well as four bone fragments that were not identifiable to the class level.

The exploitation of fauna seems to have increased in the following construction phase. The fill used to construct Plaza B/10th and buried Plaza B/9th included 77 specimens that represent 17.15% of the vertebrate faunal sample. The percentage of vertebrate faunal remains relative to the frequency of ceramic sherds corroborates this increase (Figure 8.1). Large mammals were the most significant category during this time (n=49), and included white-tailed deer, brocket deer, and unidentified large mammals. Medium-sized mammals, such as coati (n=1), rabbit (n=1), and unidentified medium-sized mammals (n=21), were also significant. In contrast, the presence of unidentified small mammals (n=1), unidentified mammals (n=1), and unknown fragments (n=3) was minor.

In the following construction phase, when the rectangular platform Plaza B/10th was in use, the exploitation of fauna continued to increase. This sample included 109 specimens that represent 24.28% of the vertebrate faunal sample. The increase in the exploitation of fauna is corroborated by the relative percentage of faunal remains relative to the frequency of sherds (Figure 8.1). Large mammals (i.e., white-tailed deer, tapir and unidentified large mammals) are the most significant taxon (n=66). Some medium

mammals are also present (n=19) and, once again, small mammals (n=1), and birds (n=2) were present in minor amounts, perhaps as a result of poor preservation and recovery techniques used during the excavation. There is evidence that some of these bones were modified. At least one deer femur was cut. This raises the possibility that the faunal assemblage could have been larger.

The fauna assemblage associated with the Plaza B/11th group consisted of 214 specimens, which represent 47.7 % of the total faunal collection of SW Plaza B. It is worth noting that although the raw numbers suggest an increase in the exploitation of vertebrate faunal resources, the percentage of faunal remains relative to ceramic sherds reveals that this exploitation decreased (Figure 8.1). 65.4% of the 254 faunal specimens were associated with Plaza B/11th-B. Once more, large mammals like white-tailed deer (n=11), brocket deer (n=1), and unidentified large mammals (n=118) comprised the most significant taxa. White-tailed deer were represented by long bones (i.e., humerus and femur), phalanx, and astragalus. Eight of these bones were modified. They were scored and cut to separate the diaphysis or shaft from the metaphysis and epiphysis. Emery (2009; see also Emery and Aoyama 2007) has identified similar processed bones as Stage 1 debitage from creating cores. Likely, the desired final product was bone ornaments (Figure 8.2) or perforators like needles, pins, or awls (see Emery and Aoyama 2007: Figure 2). One bone ornament recovered during the excavations corroborates the production of these goods in the area (Figure 8.3).



Figure 8.2. Deer bones that were scored and broken above the epiphysis.

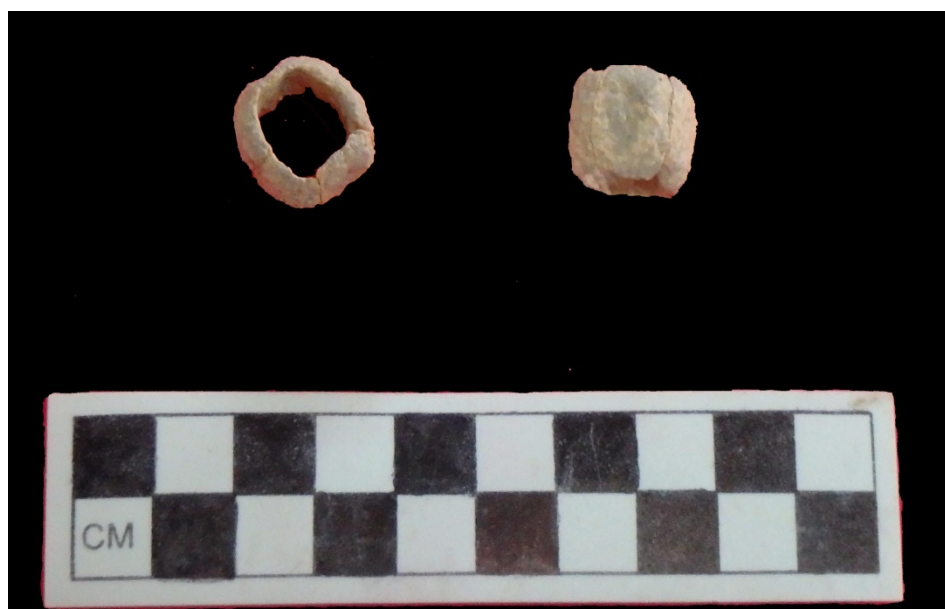


Figure 8.3. Ornament made of deer bone.

In addition to unidentified medium mammals (n=41), the medium-sized mammals sample included two specimens of the *Canis* family, either domestic dogs or coyotes, as well as two specimens of birds and two specimens of gibnuts. One medium-sized mammal bone presents cut marks, although there is no evidence to suggest butchering. Unidentified small mammals (n=4) also were part of the assemblage. The SW Plaza B collection included remains identified as sea turtle carapace. The specific family of turtle has not been identified. Finally, when the large cobbled platform Plaza B/12th was in use, the fauna utilization decreased considerably (Figure 8.1). Only five specimens were recovered including a brocket deer, a medium mammal, two unidentified mammals and a bird.

Two locations in the Cahal Pech periphery have yielded faunal assemblages associated with late Kanluk ceramic materials: Cas Pek and Tolok. Unfortunately, I was not able to calculate relative percentages of faunal remains from the peripheral groups, because the frequency of ceramic sherds was not available. Therefore, the comparison among SW Plaza B, Tolok, and Cas Pek is based on raw numbers.

At Tolok, most of the vertebrate fauna remains were found in the midden located beneath Structure 1 along with a large number of freshwater shells, which could explain the good preservation of faunal bones. Unfortunately, the majority of these bones was not identifiable beyond the class level (86.0%) or was not identifiable at all (12.1%). The same can be said about the Cas Pek assemblage, in which 20.5% was not identifiable and 67.70% was identifiable only at the class level. Even though a small percentage of the samples are identifiable, the distribution of vertebrate fauna shows interesting trends (Table 8.6).

Table 8.6. Vertebrate fauna remains recovered in late Kanluk contexts at Tolok, Cas Pek and SW Plaza B.

Taxa	Common name	Tolok	Cas Pek	Plaza B SW
<i>Lachnolaimus</i> sp.	Hogfish	1	--	--
<i>Epinephelus</i> sp.	Grouper	1	--	--
Scaridae	Parrotfish	15	5	--
<i>Sparisoma</i> sp.	Parrotfish	--	2	--
<i>Scarus</i> sp.	Parrotfish	--	1	--
Unidentified fish		1942	18	--
Total fish		1959	26	--
Chelonia	Turtle	2	17	26
Sauria	Lizard	3	--	--
Unidentified reptile		14	1	--
Total reptiles		19	18	26
Meleagridae	Turkey	--	1	--
<i>Crax rubra</i>	Curassow	1	--	--
Unidentified bird		34	2	5
Total birds		35	3	5
<i>Odocoileus virginianus</i>	White-tailed deer	9	5	16
<i>Odocoileus virginianus</i> (?)		--	--	1
<i>Odocoileus virginianus</i> (cf)		--	--	6
<i>Mazama Americana</i>	Brocket deer	--	1	3
Cervidae		1	--	--
<i>Tayassu</i> sp.	Peccary	--	1	--
<i>Tayassu</i> sp. (?)		--	1	--
<i>Tapirus</i> sp.	Tapir	--	--	27
<i>Canis</i> sp. (cf)	Dog/coyote	--	1	2
<i>Nasua</i> sp.	Coati	--	--	1
<i>Didelphis marsupialis</i>	Opossum	6	5	--
Didelphidae (?)		1	--	--
<i>Dasypus novemcinctus</i>	Nine-banded armadillo	1	1	--
<i>Dasypus</i> sp (?)		1	--	--
<i>Dasyproctidae</i>	Agouti or paca	--	1	2
<i>Dasyproctidae</i> (?)		--	1	--
Agouti paca	Paca	5	1	--
<i>Sylvilagus</i> sp.	Rabbit	1	--	2
<i>Sylvilagus</i> sp. (?)		1	--	--
Rodentia		2	--	--
Carnivora		2	2	--
Unidentified mammal		333	334	307
Total mammals		361	263	367
Unknown		326	80	27
TOTAL		2702	390	425

The peripheral groups consumed coastal reef fishes from the Caribbean, such as hogfish, parrotfish, and grouper (Stanchly 1995). The Tolok group yielded the largest amount of bony fish remains, which composed the majority of its vertebrate sample. Cas

Pek also yielded bony fish remains but their number was significantly less. In contrast, marine fishes were not found in the sample of SW Plaza B. These data may suggest differential access to marine resources. Nevertheless, people occupying SW Plaza B did have access to exchange networks from the Caribbean, which is evidenced by the presence of sea turtle remains and marine shells. Therefore, the difference between Tolok and SW Plaza B regarding marine fish presence may be explained by the use of different collection techniques employed during the excavations (different screen size, practice of floatation, etcetera) and different levels of preservation (the Tolok faunal remains were found in a midden along with shells, which could have increased the chances of faunal preservation).

Turtles and birds were utilized by the three groups, as were a variety of mammals. The peripheral groups, however, utilized a larger variety of mammals, which included agouti/paca, armadillo, brocket deer, dog, opossum, gibbon, peccary, rabbit, and white-tailed deer. The occupants of SW Plaza B consumed fewer species than the peripheral groups, although the amount of mammals recovered in that location can be put on a level with Tolok. Interestingly, deer was the mammal that predominated in the three locations, but the occupants of SW Plaza B yielded a larger amount of remains than Cas Pek and Tolok. This may suggest that there was certain differential access to this food source during the late facet of the Kanluk phase.

8.3 INVERTEBRATE FAUNA

The invertebrate remains recovered in SW Plaza B account for 96.10% of the total fauna sample (n=10,959) and include three classes, six genera, and seven species of

local riverine and marine shells (Table 8.7). Cahal Pech is located at the convergence between the Mopan and Macal Rivers, so it is to be expected that local freshwater univalves and bivalves account for the majority of the invertebrate sample (n=9,737, 88.86%). The inhabitants of SW Plaza B exploited four riverine species: *Pachychilus glaphyrus* (spiky jute), *Pachychilus indiorum* (smooth jute), *Nephronaias ortomanni* (river clam), and *Pomacea flagellate* (apple snail). The people of Cahal Pech also had access to marine shells, which were mainly represented by conchs, either *Strombus pugilis* or *Strombus gigas*. All of these conchs represent immature or juvenile individuals making difficult the distinction between these two species. Consequently, the marine conchs have been listed as *Strombus sp.* Other marine species included in the assemblage are *Dentalium sp.* (tusk shell) and *Oliva sp.* (oliva shell).

Table 8.7. Invertebrate animals recovered in the Middle Preclassic contexts of SW Plaza B.

Class	Taxon	Frequency	%
Brachyura		1	0.01%
Scaphopoda	<i>Dentalium sp.</i>	1	0.01%
Gastropoda	<i>Oliva sp.</i>	2	0.02%
	<i>Pachychilus glaphyrus</i>	2,089	19.06%
	<i>Pachychilus indiorum</i>	4,129	37.68%
	<i>Pomacea flagellate</i>	256	2.33%
	<i>Strombus sp</i>	1,218	11.11%
Pelecypoda	<i>Nephronaias ortomanni</i>	3,263	29.78%
Total		10,959	100%

8.3.1 Riverine Resources

Four species of freshwater shells were recovered from the Middle Preclassic contexts in SW Plaza B. Two species of the freshwater shell known as jute, *Pachychilus indiorum* and *Pachychilus glaphyrus*, account for most of the invertebrate faunal sample.

P. indiorum constitutes 37.68 % of the invertebrate inventory and *P. glaphyrus* accounts for 19.06% (Figures 8.4 and 8.5). These two species of jute shell are easily distinguished. *Pachychilus glaphyrus* presents some sculpturing, which is absent on the shell of *Pachychilus indiorum*. In addition, mature specimens of spiky jute are larger than those of smooth jute (Stanchly 1995). The *Pachychilus* mollusks inhabit swift and brackish water at depths ranging from 16 to 40 cm below the surface (Hohman 2002), such as the rivers near Cahal Pech.



Figure 8.4. *Pachychilus glaphyrus*.



Figure 8.5. *Pachychilus indiorum*.

The patterns of freshwater resource exploitation through time are interesting (Table 8.8, Figure 8.6). During the Cunil phase and the first half of the early Kanluk (Plaza B/2nd to Plaza B/6th construction fill), most of the jute exploited belonged to the *P. glaphyrus* species. This pattern changed during the second half of the early Kanluk phase when *P. indiorum* shells became predominant. *P. indiorum* also accounts for the majority of jute found in other late Kanluk contexts from the site core and periphery (Stanchly 1995). This tendency continued through the late facet of the Kanluk phase. It is also during the second part of the early facet of the Kanluk phase, when the platforms Plaza B/7th and Plaza B/8th were in use, that jute exploitation increased as well. This increase is corroborated by the percentage of jute relative to the frequency of sherds (Figure 8.6). The rectangular platform Plaza B/10th and the architectural group Plaza B/11th also provided a significant amount of jute shells (54.04% of the total jute sample, n=3,360). The biggest difference between *P. glaphyrus* (n=877, 14.1% of the jute sample) and *P.*

indiorum (n=2,483, 39.93% of the jute sample) also was reached during this time. By the Kanluk – Barton Creek transition, the amount of jute decreased dramatically compared with the sample from previous construction phases. This decrease is corroborated by the percentage of jute relative to the frequency of ceramic fragments. This event could be related to the shift of function of the area from private to public.

Table 8.8. Temporal distribution of riverine shells by construction phase.

Construction phase	<i>Pachychilus glaphyrus</i>		<i>Pachychilus indiorum</i>		<i>Nephronaias ortmanni</i>		<i>Pomacea flagellate</i>	
	N	% (N/sherds)	N	% (N/sherds)	N	% (N/sherds)	N	% (N/sherds)
Plaza B/2 nd	1	10	--	--	--	--	--	--
Plaza B/3 rd	11	13.25	5	6.02	12	14.46	1	1.2
Plaza B/4 th	14	9.66	6	0.11	27	18.62	1	0.69
Plaza B/5 th	12	3.29	2	0.55	33	9.04	--	--
Plaza B/6 th	9	5.70	8	5.06	18	11.39	--	--
Plaza B/7 th	15	4.93	27	8.88	82	26.97	2	0.66
Plaza B/8 th	113	11.93	172	18.16	309	32.62	7	0.74
Plaza B/9 th	275	14.05	256	13.08	378	19.31	2	0.1
Plaza B/10 th	209	5.72	309	8.46	368	10.08	61	1.67
Plaza B/11 th	34	0.62	31	0.57	55	0.20	1	0.02
Plaza B/11 th -B	460	8.39	636	11.6	404	7.37	78	1.42
Plaza B/11 th -C	6	0.11	26	0.47	14	0.26	--	--
Plaza B/12 th	418	2.66	1030	6.66	778	4.94	32	0.20
Plaza B/12 th -2	459	2.92	1453	9.24	740	4.71	71	0.45
Plaza B/13 th	53	1.84	168	5.83	32	1.11	--	--
TOTAL	2036		4129		3250		256	

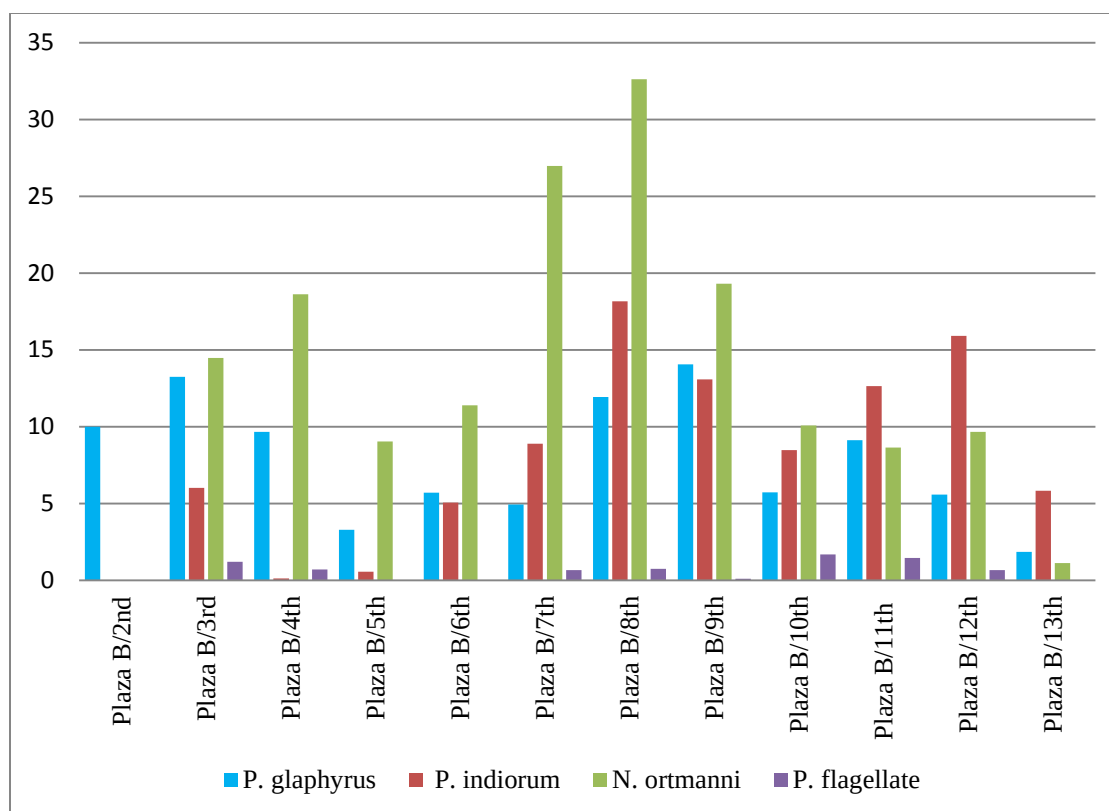


Figure 8.6. Percentages of riverine shells relative to ceramic fragments by construction phase.

Ethnographic data documents that jutes are an important food source for the modern Maya (Healy et al. 1990). Based on ethnographic data and the archaeological information, it can be stated that jute also was consumed during ancient times. In fact, excavations at Pacbitun (Hohman and Powis 1996), Barton Ramie (Willey et al. 1965), Blackman Eddy (Garber et al. 1997), and peripheral groups of Cahal Pech (Stanchly 1995) have showed high concentrations of riverine shells. Like the samples analyzed by Stanchly (1995), the Plaza B jute shells displayed broken or punctured spires. The practice of removing the distal end of the shell facilitated the extraction of the snail.

In addition to the dietary role, there is enough evidence to suggest that jute shells were used in ritual activities. Jute shells have been found in caves and architecture as part

of cache deposits and funerary offerings (Halperin et al. 2003; Healy et al. 1990). For instance, two Middle Preclassic ritual deposits were uncovered during the excavations of Structure B-1 of Blackman Eddy. These contained jute, river clams, apple snails, lithics, and ceramics (Brown et al. 1999, Hartman et al. 1999). The occupants of SW Plaza B included jutes in a small cache discovered beneath the Plaza B/Floor 11th, just in front of the cobbled platform Plaza B/12th. This cache consisted of twenty-three whole *P. indiorum* shells that were placed along with a complete figurine identified as a “Charlie Chaplin” figurine (Chapter 7). It has been suggested that ritual jutes were deposited as whole specimens and they were not used as food (Pendergast 1969). Nevertheless, complete jute cannot exclude the possibility of use as food, as spires are not removed when jute are cooked to make a broth (Halperin et al. 2003).

Another freshwater shell identified in the assemblage was the river clam *Nephronaias ortomanni* (Figure 8.7). *N. ortomanni* represents 29.78% of the whole shell sample recovered in SW Plaza B. These mollusks prefer habitats similar to those occupied by *Pachychilus* (Hohman 2002). In contrast, the number of apple snail or *Pomacea flagellata* was low (2.34% of the total shell collection). As Stanchly and Dale (1992) have suggested, the low numbers of apple snail may be attributable to the habitat preferences of these mollusks. *Pomacea flagellata* lives in slow-moving freshwaters (i.e., swamp, lakes, streams, and rivers) at a depth of 1-2 m and these types of habitats are not found in the immediate area surrounding Cahal Pech. Apple snails have been found in large number at many northern Belize sites dating to the Preclassic period, such as Blue Creek (Stanchly 1999).



Figure 8.7. *Nephronaias ortomanni*.

Unlike the consumption of *P. flagellata*, which remained low throughout the Middle Preclassic period, the consumption of *N. ortomanni* was important during the second part of the Cunil phase and the early facet of the Kanluk phase relative to the consumption of jute (Table 8.9; Figure 8.6). Its utilization decreased gradually during the Kanluk phase as jute became dominant. The consumption of river clams reached its lowest percentage when the cobbled platform Plaza B/12th was in use.

Like jute mollusks, *N. ortomanni* also were utilized as food source (Powis 2004:134). For instance, in the Tolok group, a large amount of river clam shells were found in a midden with intact or unmodified valves, although some were crushed (e.g., Powis and Hohman 1996). The river clams also were used in ritual contexts. At Blackman Eddy, for instance, 12,500 *N. ortomanni* were used as part of a ritual deposit placed at bedrock level below Structure B-1. *P. flagellata* also was used as part of ritual deposits. At the Cas Pek group, a large amount of apple snails (n=520) and other

freshwater snails (n=53) were deposited as part of a dedicatory cache associated with Structure A (Lee and Awe 1995).

Large quantities of freshwater shells have been reported in excavations conducted in the site core and periphery of Cahal Pech (Tables 8.9 and 8.10). It is worth noting that the temporal distribution by ceramic phase of the riverine shells recovered in the site core is not available. In addition, the percentages relative to ceramic fragments were not calculated because the frequency of sherds was not available during the analysis. Despite this, I observed interesting patterns when the percentages of each species in the different groups are compared. At the site core, *P. glaphyrus* was the preferred mollusk in Structure B-4, followed by *N. ortmanni* and then by *P. indiorum* (Stanchly 1995).

A similar pattern is observed in the riverine shell collection recovered in the round platform of Plaza C (Villarreal 2014). In contrast, people inhabiting SW Plaza B had a preference for *P. indiorum*, followed by *N. ortmanni* and then by *P. glaphyrus*. This is particularly true during the late facet of the Kanluk phase. In the Tolok and Cas Pek groups, *N. ortmanni* was the preferred mollusk, followed by *P. indiorum*. The Cas Pek group also consumed significant amounts of *P. flagellate*. The presence of *P. glaphyrus* was very low in both peripheral groups. Therefore, it may seem that each social group had a preference for different species of riverine mollusks. Nevertheless, the possibility exists that during the late facet of the Kanluk phase, these differences in riverine shell consumption were related to differential access to species of mollusks, with the site core having a preferential access to jute mollusks.

Table 8. 9. Freshwater shells recovered in Middle Preclassic contexts at the site core of Cahal Pech (Stanchly 1995; Stanchly and Dale 1992; Villarreal 2014).

Taxon	Str. B-4				Plaza B		Plaza C	
	Unit 4 & 5		Plaza Unit		SW Plaza B		Round platform	
	N	%	N	%	N	%	N	%
<i>P. glaphyrus</i>	490	35.3	872	30.2	2089	21.5	381	66.8
<i>P. indiorum</i>	416	30.0	939	67.7	4129	42.4	189	33.2
<i>Pachychilus</i> sp.	32	2.3	10	0.4	--	--	--	--
<i>P. flagellata</i>	15	1.1	36	1.3	256	2.6	--	--
<i>Pomacea?</i>	--	--	--	--	--	--	--	--
<i>N. ortomanni</i>	432	31.2	1033	0.4	3263	33.5	--	--
TOTAL	1387		2890		9737		570	

Table 8.10. Freshwater shells recovered in Middle Preclassic contexts at the periphery of Cahal Pech (Lee and Awe 1995; Powis and Hohman 1996; Powis et al. 1999; Stanchly 1995).

Taxon	Cas Pek		Tolok	
	N	%	N	%
<i>P. glaphyrus</i>	189	8.2	573	11.2
<i>P. indiorum</i>	640	27.8	1339	26.3
<i>Pachychilus</i> sp.	--	--	61	1.2
<i>Pomacea flagellate</i>	564	24.5	232	4.5
<i>Pomacea?</i>	--	--	10	0.2
<i>N. ortomanni</i>	905	39.4	2883	56.6
Total	2298		5098	100

8.3.2 Marine Shells

Although the nearest coastline is located more than 110km east of Cahal Pech, a total of 1,221 marine shells coming from the Caribbean Sea were found in the sample. Marine shells were mainly represented by either *Strombus pugilis* or *Strombus gigas*. As the specimens were immature or juvenile, I was not able to distinguish between these two species, except for the spire fragments that were identified as *S. pugilis*. It is likely that the majority of the conch is the Indian Fighting Conch or *S. pugilis*. In fact, in Pacbitun, this taxon was abundant in the sample (Hohmann 2002). In the sample from Blackman Eddy, the Strombidae specimens also consisted of young individuals. The abundance of

these *S. pugilis* or immature *S. gigas* suggests that they were preferred since their small size made them easier to transport. Both *S. pugilis* and *S. gigas* have similar habitats: they are found in the warm waters of western Atlantic, extending from southeastern Florida to the West Indies and the northeastern portion of South America, through the coast of Campeche to the Caribbean shores of Central America (Cochran 2009). A few specimens of the *Oliva reticularis* (netted olive) and *Dentalium sp.* (tusk shells) also were identified. The *Oliva reticularis* live in sandy habitats, in waters ranging from 0.6 to 12m deep. They can be found from Southeast Florida to the West Indies and Venezuela. The Caribbean *Dentalium* live in depths ranging from 3 to 152m, partially buried in the mud or sand, and are most often found in waters more than 30m deep (Hohman 2002).

The marine shell collection included worked shells (n=69) and debitage (n=1,153). The worked shells, which I discuss in the next section, include artifacts made from *Strombus sp.*, *Oliva reticularis*, and *Dentalium sp.* The debitage category consisted of shell fragments that only displayed signs of cultural modification related to the initial stage of shell reduction, such as flaking, cutting or grinding (Cochran 2009; Hohman 2002). All the debitage belonged to the Strombidae family and it was classified according to the shell part present—body, columella, lip, spire, shoulder and unspecified portion (Figure 8.8). All shell parts were present in the sample suggesting that the inhabitants of SW Plaza B had access to whole specimens (Table 8.11). Although a body fragment was identified in the Plaza B/8th fill, portions of all shells were present until the Plaza B/9th phase, with the fill of Plaza B/12th phase accounting for the largest percentage of debitage (n=963, 83.52%). This high presence of marine shell debitage associated with the

architectural group Plaza B/11th is corroborated by the percentage of marine shell debitage relative to ceramic fragments (Figure 8.9)



Figure 8.8. Different portions of *Strombus* sp. shells.

Table 8. 11. *Strombus* sp. debitage by construction phase.

Construction phase	Spire		Shoulder	Body	Lip	Columella	Unid	TOTAL		
	S. pugilis	Unid.						N	%	Weight
Plaza B/8 th				1				1	0.09	1.2
Plaza B/9 th	1		1	3	1	2	1	9	0.78	61.1
Plaza B/10 th	4		7	35	10	40	19	115	9.97	255.5
Plaza B/11 th -A			1	5			1	7	0.61	14.0
Plaza B/11 th -B		2	5	19	1	21	3	51	4.42	170.1
Plaza B/11 th -C						1		1	0.09	2.3
Plaza B/12 th	16	2	2	111	56	33	5	225	19.51	760.2
Plaza B/12 th -2	44		30	295	197	107	65	738	64.01	2609.2
Plaza B/13 th				2	1	3		6	0.52	25.3
TOTAL	65	4	46	471	266	207	94	1153	100.0	3898.9

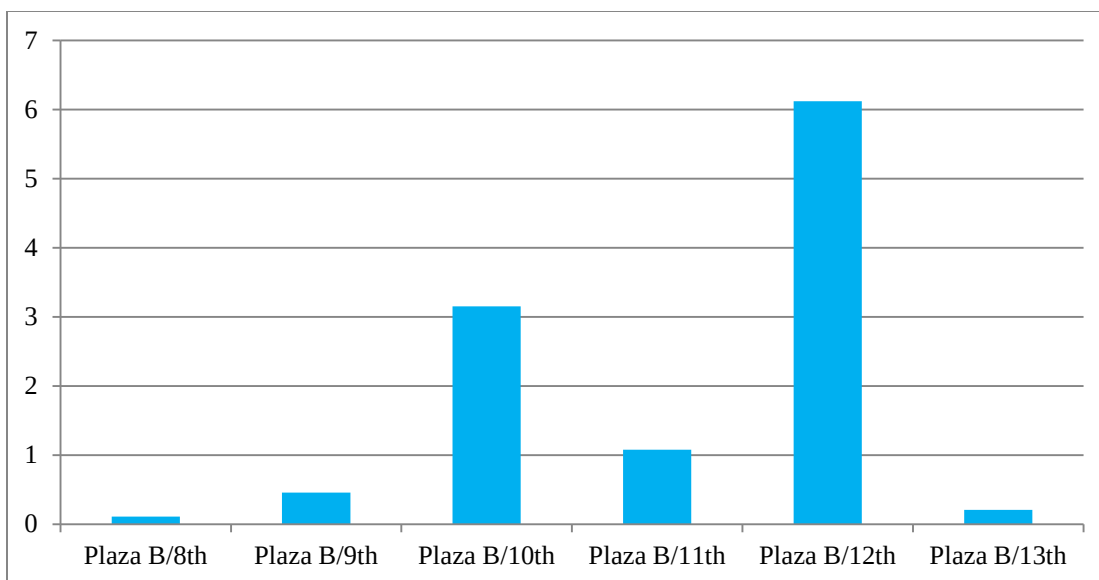


Figure 8.9. Temporal distribution of *Strombus* sp. debris relative to ceramic fragments.

Marine shells were unequally distributed at the site (Table 8.12). Structure B-4 and the area in front of this building provided 150 fragments of Strombidae (Stanchly 1995). The different structures found in the trench across Plaza B yielded 1,454 marine shell fragments and ornaments. 1,298 of these items came from Phase IV contexts dated to the early-late Kanluk phase (Horn 2015:452). Plaza C, where a late Kanluk round platform was exposed, provided only a few marine shell fragments (Villarreal 2014). Despite this, marine shells were not exclusive to the inhabitants of the site core. Conch shell remains have been found throughout the Cahal Pech periphery but in small quantities. The exception is the Cas Pek group, where 983 fragments of Strombidae were found in the late Kanluk contexts of Structure 1. At this peripheral group, however, the shell fragments consisted solely of shell body portions and columellas, suggesting that this group did not obtain complete specimens (Lee and Awe 1995). This clearly contrasts with the household that inhabited SW Plaza B, which obtained whole specimens

beginning in the late facet of the Kanluk phase. The same can be stated about the northern social group of Plaza B. The structures dated to the Phase IV of Horn's (2015:449) yielded spires, columellae, spires-and-columellae, shoulders, and body whorls/outer lips.

Table 8. 12. Marine shell specimens recovered in Middle Preclassic contexts in Cahal Pech.

Class	Taxon	Str. B-4		Trench	Cas Pek	Tolok	
		Units 4 & 5	PU-94-1			Midden Str. 1	Str. 14 & 15
Gastropoda	Strombidae	166	84	1062	983	22	49
	<i>Melongenena melongena</i>	--	--	1	--	--	--
	<i>Prunum sp.</i>	--	--	1	--	3	--
	<i>Oliva sp.</i>	--	--	6	1	1	--
	<i>Turbinella angulate</i>	--	--	1	--	--	--
	Unidentified	--	--	300	--	--	--
Pelecypoda	<i>Anadara notabilis</i>	--	--	1	--	--	--
Scaphopoda	<i>Dentalium sp.</i>	--	--		1	19	2
Unidentified		--	--	82	--	--	--
Total		166	84	1454	985	45	51

When compared to assemblages from other Belize Valley sites, it is interesting to note that the inhabitants of Cahal Pech had limited access to certain marine shells like *Spondylus*, *Turbinella*, *Melongena*, *Marginella*, *Conus*, and *Busycon*. These gastropods and pelecypods have been recovered in Pacbitun (Stanchly 1999) and Blackman Eddy (Cochran 2009), although in small amounts.

8.3.3 Worked shell

The shell collection includes specimens that were modified to create ornaments or tools. Based on Hohman's (2002) typology, the worked shells can be classified into

five types: beads, pendants, adornments, tinklers, and tools. In turn, each type can be further divided into specific subtypes based on formal variations (Table 8.13).

Table 8. 13. Types of worked shells by construction phase.

Construction phase	Adornment	Bead	Pendant	Tinklers	Tools	Total	% (total/sherds)
Plaza B/9 th	1	2	2			5	0.26
Plaza B/10 th		3	3	1		7	0.19
Plaza B/11 th -A		1	1			2	0.04
Plaza B/11 th -B	1	5	4			10	0.18
Plaza B/12 th	3	17	9	1	1	32	0.2
Plaza B/12 th -2	2	13	9		2	26	0.16
	7	41	28	2	3	82	

Beads are the most common type of modified shell. Six subtypes of beads were identified in the sample (Table 8.14). As in the assemblages from Blackman Eddy (Cochran 2009) and Pacbitun (Hohman 2002), discoidal beads are the most common subtype in the SW Plaza B assemblage (n=25). These goods are characterized by having a uniform disc shape with smooth lateral edges and a central perforation. In order to manufacture these artifacts, *Strombus sp.* body fragments and *N. ortmanni* fragments were used (Figure 8.10).

Table 8.14. Bead subtypes by construction phase.

Construction phase	Bead						Whole shell	Total
	Apsidal	Disc	Irregular	Rectangular	Square	Triangle		
Plaza B/9 th		2						2
Plaza B/10 th		3						3
Plaza B/11 th -A		1						1
Plaza B/11 th -B		3	2					5
Plaza B/12 th		11	3	2			1	17
Plaza B/12 th -2	1	5	4	1	1	1		13
Total	1	25	9	3	1	1	1	41



Figure 8.10. Discoidal shell beads.

Unlike disc-shaped beads, irregular beads have irregular shapes that show little to no modification (Hohman 2002:106). In the SW Plaza B assemblage, irregular beads are predominantly manufactured from marine gastropods ($n=7$). Different parts of the shells were used: body, lip, shoulder, spine and spire portions. At Blackman Eddy, *S. pugilis* was the preferred species to produce this subtype and it seems that the same can be stated for Cahal Pech. Nevertheless, two *N. ortmanni* shells were modified to obtain irregular beads. The edges of the irregular beads present different degrees of smoothing, but they were likely finished products. At Blackman Eddy, for instance, most of the irregular beads display smoothed margins and also are interpreted as finished products (Cochran 2009).

The other subtypes were apsidal, rectangular, square, and triangular in shape (Figure 8.11). The lateral edges of these artifacts were well smoothed, with the exception of a rectangular bead that seemed to be unfinished as its edges were sharp. A *Dentalium*

sp. shell was identified and interpreted as a bead. *Dentalium* shells interpreted as beads have been identified at Blackman Eddy (Cochran 2009) and Pacbitun (Hohman 2002). It is worth noting, however, that the natural formation of this shell is bead-like (Stanchly 1995). Therefore, if they were used as beads, they did not need modification.



Figure 8.11. Different subtypes of beads: triangular, rectangular, irregular, and square.

I identified twenty-eight pendants in the SW Plaza B sample of worked shells (Figure 8.12; Table 8.15). Pendants display one or more perforations located along their edges for vertical suspension (Cochran 2009; Hohmann 2002; Isaza Aizpurúa and McAnanny 1999). Freshwater pelecypods (*N. ortmanni*) and marine gastropods (*Strombus sp.*) were the most commonly used species for manufacturing this artifact type. I identified three subtypes of pendants: butterfly, rectangular, and irregular. Butterfly pendants were manufactured by modifying the edges of a *N. ortmanni* shell and creating four conical perforations along the edges. Complete *N. ortmanni* also were used as

pendants by making a single conical perforation near the hinge or distal edge. Rectangular pendants were manufactured using both *Strombus sp.* and *N. ortmanni*. Irregular pendants were produced exclusively from *Strombus sp.* Like irregular beads, different portions of the shells were used to produce this pendant subtype (i.e., body, lip, shoulder or spire), the lateral edges of which displayed different degrees of smoothing.

Table 8.15. Pendant subtypes by construction phase.

Construction phase	Pendant				Total
	Butterfly	Irregular	Rectangular	Complete shell	
Plaza B/9 th		2			2
Plaza B/10 th		3			3
Plaza B/11 th -A		1			1
Plaza B/11 th -B		4			4
Plaza B/12 th		6	3		9
Plaza B/12 th -2	1	4	2	2	9
	1	20	5	2	28



Figure 8.12. Pendants. Upper row: natural, butterfly and rectangular subtypes made of *Nephronaias ortomanni*. Lower row: Irregular pendants made of *Strombus sp.*

Adornments are artifacts that have been worked into various shapes without displaying perforations (Hohmann 2002:108). They have been interpreted as decorative items (e.g., facial ornaments, clothing adornments and mosaic inlay elements), toys, gaming pieces, and other items (Cochran 2009; Hohmann 2002). I identified five subtypes in the SW Plaza B collection: button, disc, rectangle, ring, and natural shape (Figure 8.13; Table 8.16). The button, disc, and ring were manufactured by modifying the conch body, while the rectangular and natural subtypes were produced with *N. ortmanni*. In the natural-shape subtype, the river clams exhibited a V-shape cut on their edges.



Figure 8.13. Adornments made of *Nephronaias ortomanni* and marine shell.

Table 8.16. Subtypes of adornments, tools, and tinklers by construction phase.

Construction phase	Adornments					Tinkler	Blank	Tool	
	Button	Disc	Natural	Rectangle	Ring			Drill	Spoon
Plaza B/9 th	1					1			
Plaza B/10 th						1			
Plaza B/11 th -A									
Plaza B/11 th -B			1						
Plaza B/12 th		1	1		1			1	
Plaza B/12 th -2			1	1			1	1	1
	1	1	3	1	1	2	1	2	1

I identified two modified *Oliva sp.* shells among the worked shells. In one *Oliva* shell, the apex was removed and a small slit was created along the shell base (Figure 8.14). In the other shell, the spire also was removed. The edges near the removal location were well smoothed and a tubular perforation was made along the shell base near the siphonal notch. A similar worked shell was identified at Blackman Eddy but using a *Conus sp.* shell (Cochran 2009). Traditionally, oliva shells that have been perforated at their posterior ends are known as tinklers, presumably because they were suspended to achieve a clapper effect (Hohmann 2002).



Figure 8.14. Tinkler made of *Oliva reticularis* shell.

In addition, three utilitarian shell artifacts were present in the assemblage. Two possible drills were manufactured by modifying the lip portions of a *Strombus* sp. Both drills exhibited similar measurements (40mm in length, 15 and 16.5 mm in width, and 2.4 and 2.8 mm in thickness) indicating that they were in fact tools, perhaps to perforate soft or special materials (Figure 8.15). A spoon was produced from the shoulder of a *Strombus* sp., with the horns used as supports. Its lateral edges were regular and smooth (Figure 8.16). It is possible that some unmodified fragments were used as expedient tools (Hohmann 2002:120). In coastal zones of the northern lowlands, for instance, conch portions were modified and used for cutting, scraping, and hammering (e.g., Eaton 1974).

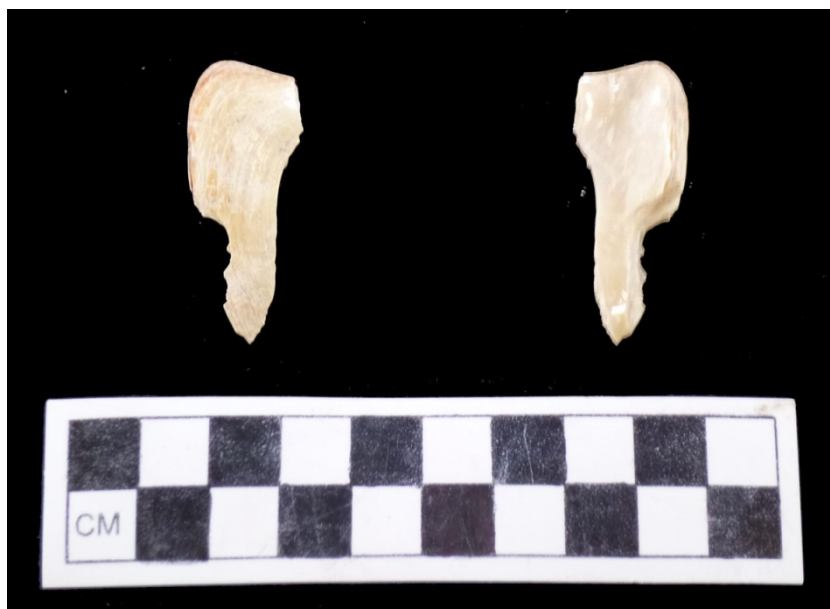


Figure 8.15. Drill made of the lip portion of a *Strombus* sp.



Figure 8.16. Spoon made of *Strombus* sp.

Modified shells in the form of adornments (n=1), beads (n=2), and pendants (n=2) appeared at SW Plaza B when Plaza B/9th was in use, implying that the inhabitants of SW Plaza B did not have access to these goods until the beginning of the early Kanluk.

Nevertheless, shell ornaments recovered in the southern area during the excavations of the BVAP indicates that people occupying the southern area of Plaza B had accessed to a few shell ornaments during the Cunil and early Kanluk phases (Horn 2015; Table 8.17). In SW Plaza B, the numbers of worked shells increased through time, with the people living in the Plaza B/11th group accounting for the largest amount and greatest variety of worked shells (n=58, 70.70% of the worked shell sample; Table 8.13).

Table 8.17. Shell ornaments recovered across Plaza B during the excavations of BVAP (Horn 2015).

Phase	Area of Plaza B	Bead	Pendant	Blank	Whole shell	Total
Early-Late Kanluk	North	55	11	1	2	69
	Trench	38		3		41
Early Kanluk	North	1				1
	South	2				2
	Trench	5				5
Cunil	North	2				2
	South	5				5
		108	11	4	2	125

Shell ornaments have been recovered at the site core (i.e., Structure B-4, across Plaza B, and the round platform at Plaza C) and the periphery (i.e., Cas Pek, Tolok and Zubin) of Cahal Pech. Shell ornaments were valuable goods that they have been uncovered from special contexts like burials (n=22) and caches (n=37). The majority of shell artifacts, however, came from construction fill (n=124) and middens (n=86) (Table 8.18). Interestingly, the peripheral groups, including Cas Pek, yielded few shell ornaments when compared with the site core. 73 shell ornaments have been found in Structure B-4, 125 ornaments were discovered in several contexts across Plaza B, and 82

ornaments have been discovered in SW Plaza B. Therefore, it is possible to suggest that the inhabitants of the southern area of Plaza B enjoyed preferential access to shell ornaments, although the northern group also accessed a significant amount of shell ornaments.

Table 8.18. Contexts of shell ornaments recovered at Cahal Pech (Awe 1992; Cheetham 1995, 1996; Ferguson et al. 1996; Horn 2015; Lee 1996; Lee and Awe 1995; Powis 1996; Suhanara and Awe 1994; Villarreal 2014).

Context	Burial	Cache	Floor	Midden	Construction fill	Refuse	Total
Structure B-4		32			41		73
Trench	4	5	16	31	19	34	109
Plaza C				52	9		61
Cas Pek	4				39		43
Tolok	2			3	7		12
Zubin	12				9		21
Total	22	37	16	86	124	34	319

8.4 SHELL ORNAMENT PRODUCTION

Shell ornaments, particularly the bead type, were widely consumed during the Middle Preclassic and have been recovered at several sites in northern Belize (e.g., Altun Ha, Blue Creek, Chan Chich, Cerros, Colha, Cuello, K'axob, and Santa Rita), and Guatemala (e.g., Altar de Sacrificios, Seibal, Tikal, and Uaxactun) (Buttles 1992; Garber 1989; Haines 1997; Isaza Aizpurua and McAnany 1999; Moholy-Nagy 1994; Pendergast 1982; Ricketson and Ricketson 1937; Robichaux 1998; Robin 1989; Willey 1972, 1978). In the Belize Valley, the manufacture of these goods was carried out at several sites such as Blackman Eddy, Cahal Pech, Chan Noohol, Pacbitun (Cochran 2009; Hohman 2002; Keller 2012; Lee and Awe 1995). The production of shell ornaments has been documented by the association of broken and incomplete shell ornaments, shell debitage,

and production tools (Hohman 2002:172). At Pacbitun and Cahal Pech, production tools consisted mainly of microdrills (see Chapter 6), which came from burin spalls that exhibited wear and retouch on the proximal and distal ends.

Previously, it was believed that at Cahal Pech, the manufacture of these goods was restricted to the Cas Pek group. A large quantity of marine shell debitage, ornaments, and microdrills were found there in close association. The manufacture of shell ornaments at this group started at the end of the Kanluk phase (ca. 400 B.C.), although their importance was low. At the beginning of the Barton Creek phase, the presence of marine shell, broken unfinished objects, and microdrills increased, suggesting that the shell industry may have grown during the Late Preclassic. It is likely that finished shell ornaments were sent to the site core or exported to another site, as there were no complete specimens and there were broken, partially modified objects (Lee and Awe 1995).

It is probable that the production of marine shell ornaments began earlier at Cahal Pech. Based on the assemblage from across Plaza B, Horn (2015:453) has stated that the inhabitants of Cahal Pech produced these goods by late Kanluk times at the latest. The inventory of SW Plaza B confirms this notion. I identified shell debitage, complete and almost complete ornaments, and microdrills (Table 8.19; Figure 8.17; Chapter 6). These artifacts were present at the beginning of the late facet of the Kanluk phase, with the percentage of these artifacts increasing through time (Figure 8.17). By the end of the late Kanluk phase, when Plaza B/11th was in use, the largest amount of beads (n=30), pendants (n=18), adornments (n=5), shell debitage (n=963) and microdrills (n=229) was

present. Some shell fragments display modification through cutting or sawing, primary reduction techniques used to remove pieces from a parental material (Hohman 2002:139).

Table 8.19. Shell ornaments, shell debitage, and chert microdrills recovered in the Middle Preclassic contexts in SW Plaza B.

Construction phase	Shell Ornaments			Shell Debitage	Chert Microdrills
	Adornment	Bead	Pendant		
Plaza B/8 th	--	--	--	1	1
Plaza B/9 th	1	2	2	9	--
Plaza B/10 th	--	3	3	115	4
Plaza B/11 th -A	--	1	1	7	1
Plaza B/11 th -B	1	5	4	51	20
Plaza B/11 th -C	--	--	--	1	--
Plaza B/12 th	3	17	9	225	64
Plaza B/12 th -2	2	13	9	738	165
Plaza B/13 th	--	--	--	6	--
	7	41	28	1153	255

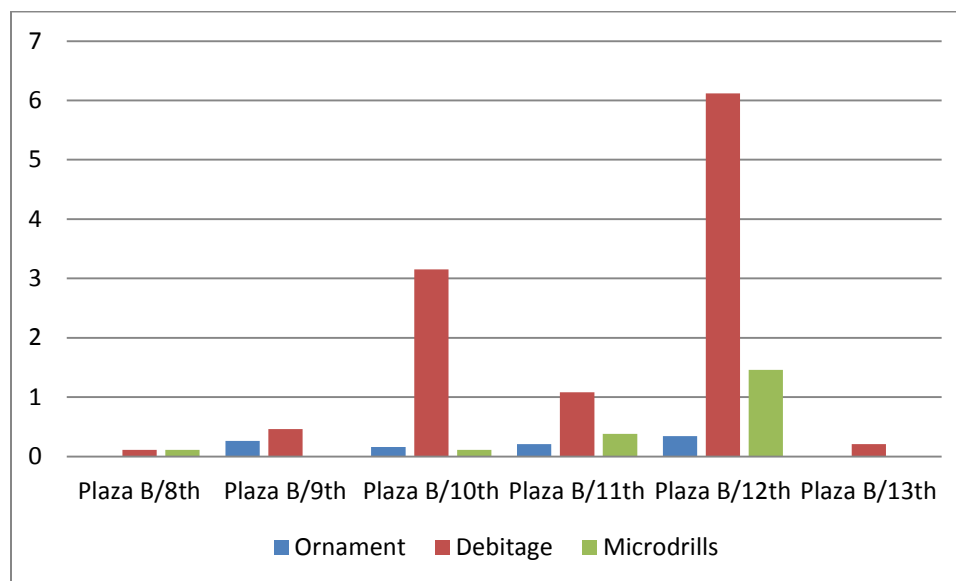


Figure 8.17. Percentages of shell ornaments, shell debitage, and chert microdrills by construction phase relative to the number of ceramic fragments.

My artifact data suggests that the people inhabiting Plaza B/11th group manufactured worked shells—mostly beads but also some adornments and pendants. Shell crafting could have been conducted as early as the beginning of the late facet of the Kanluk phase, but this activity could have been intermittent based on the low amount of debitage and microdrills. Earlier evidence of shell ornament production, dating to the early facet of the Jenney Creek phase, has been recovered at Blackman Eddy (Cochram 2009) and Pacbitun (Hohman 2002).

Like other sites in the Belize Valley, *Strombus* shells were the preferred material for manufacturing ornaments at SW Plaza B. Again, the presence of columella, spire, lip and body fragments indicates that the inhabitants of Plaza B/11th group imported whole snails for consumption and use as raw material (see Hohmann 2002:138-146 for reduction techniques and production process). By the Kanluk – Barton Creek transition, all evidence of marine shell bead production disappeared from the construction fill. This could be related to the transition from domestic to public of the area. As this area became the core of the community, shell manufacture could have moved to the Cas Pek group. Alternatively, beads could have been replaced by more elaborate shell artifacts, as was identified at K'axob (Isaza Aizpurúa 2004).

The fact that other late Kanluk groups did not practice shell crafting during the Kanluk phase indicates that this activity was not conducted by all households. In fact, it is likely that the marine shells and the knowledge needed to manufacture shell ornaments could have been controlled by the inhabitants of SW Plaza B, at least during the late facet of the Kanluk phase. This could have imbued the shell beads, pendants, and adornments with a certain ideological value. Coupled with this, people occupying this section of

Plaza B could have kept a large quantity of shell ornaments. Nevertheless, shell goods have been found at other areas of Plaza B, the round platform of Plaza C, Cas Pek, and Tolok, suggesting that these households had access to these goods, perhaps through gift-giving.

8.5 SUMMARY

The taxonomic composition of the faunal assemblage suggests that people occupying SW Plaza B selectively exploited jute shells, river clams, and deer for their consumption. Their diet included other riverine mollusks, a variety of medium-sized mammals (like dogs, gibnuts, coatis and rabbits) and birds. Exotic animals likely obtained through exchange networks from the Caribbean, such as turtles and marine invertebrates also were consumed.

The temporal and spatial distribution of faunal remains shed light on the patterns of consumption of these resources. During the Cunil phase and the first half of the early facet of the Kanluk phase, the large and spiky jute predominated in Structure B-4. The people occupying SW Plaza B also consumed *P. glaphyrus*, but they preferred *N. ortmanni* mollusks. During the second part of the early Kanluk, *P. indiorum* started gaining prevalence. Likewise, the consumption of jute increased while the exploitation of *N. ortmanni* decreased gradually. The occupants of SW Plaza B and Structure B-4 also consumed vertebrate fauna. Interestingly, at the onset of the Kanluk phase, the SW Plaza B social group displayed its largest index of vertebrate fauna exploitation, although the remains were not identifiable beyond their class. In contrast, the inhabitants of Structure

B-4 consumed a large variety of species that included deer, peccaries, dogs/coyotes, opossums, rabbits, crocodiles, fish, and birds.

During the late Kanluk, the occupants of SW Plaza B had access to a variety of mammals (predominantly large mammals like deer), riverine shells (particularly smooth jute), and marine shells. By the end of the Kanluk phase, when Plaza B/11th architectural group was in use, people occupying this location accessed the largest variety of vertebrate animals and the largest amount of marine mollusks in comparison with their predecessors. The occupants of Plaza B/11th also relied heavily on riverine resources, particularly *P. indiorum*. Heavy reliance on riverine resources has been found at Tikal (Moholy-Nagy 1978) and Barton Ramie (Willey et al. 1965).

This reliance on riverine mollusks also was reported in Tolok and Cas Pek. Nevertheless, the consumption pattern at those peripheral groups was different than that identified in Plaza B. Even though the peripheral groups yielded the four species of riverine shells identified in SW Plaza B, their percentages were different. The spiky jute was present to a lesser extent, while the river clam was the preferred mollusk for consumption. Something similar can be stated about the mammals. The inhabitants of SW Plaza B, Tolok and Cas Pek had access to a similar variety of mammals, but the residents of SW Plaza B enjoyed a larger amount of large mammals, particularly deer. In contrast, the inhabitants of the peripheral groups relied more on medium-sized mammals. The inhabitants of SW Plaza B could have also had differential access to marine shells. They received whole specimens, but the occupants of Cas Pek appear to have obtained only bodies and collumelas rather than complete conchs. Differential access to marine shells is still uncertain and this conclusion may be the result of sampling bias. Both Tolok

and Cas Pek did have access to exchange networks from the Caribbean, a fact supported by the presence of turtles and marine bony fish. Tolok yielded the largest amount of marine fishes, which were absent in SW Plaza B. Once again, this absence could be due to a bias sample or different degrees of preservation.

After the meat was consumed, some of the remainders, such as shells and bones, were modified to produce ornaments. This was the case for deer bones, marine shells, and to a lesser extent, river clam shells. The manufacture of marine shell ornaments began no later than the late facet of the Kanluk phase at SW Plaza B. The peak of the production, however, was reached at the end of the Kanluk phase, when the Plaza B/11th group was in use. It is likely that shell ornament manufacture in the northern group of Plaza B also dated to this time. In contrast, the manufacture of shell ornaments at Cas Pek started during the Kanluk–Barton Creek transition, when the cobbled platform Plaza B/12th was in use. This data suggests that shell ornament production was limited to Plaza B until the end of the Middle Preclassic. In fact, this area yielded the largest amount of finished shell ornaments. It is likely that shell ornaments were valuable items controlled by people occupying Plaza B.

Classic elites used animals as a valuable resource through which they enhanced their differential access to power over (Emery 2003). As Emery (2003) has stated, quantitative comparisons of Classic collections often show that most faunal remains come from a few elite middens. Elites used animals not only for food, but also as a valuable element in competitive feasting and ceremonies. Although the role of fauna during the Middle Preclassic is not yet fully understood, the data from Cahal Pech

suggests that differential access to certain fauna and goods manufactured from them began during this time, particularly during the second facet of the Kanluk phase.

Unfortunately, faunal information from other areas of Plaza B occupied during the Cunil and Kanluk phases are not available. This makes it impossible to establish whether the southern social group or other group manipulated faunal resources to acquire power over others. Consequently, my main hypothesis regarding the employment of a network system to institutionalize social inequality during the early Kanluk phase cannot be corroborated or refuted. Nevertheless, the information provided by the faunal collections of Cahal Pech corroborates the hypothesis that the southern group of Plaza B manipulated the access to terrestrial and marine animals during the late facet of the Kanluk phase. This social group also controlled the production of shell ornaments and the ornaments themselves, particularly at the end of the Kanluk phase. Thus, coupled with data obtained from stone tools and ceramic artifacts, the faunal remains corroborate the hypothesis that social inequality intensified through the late facet of the Kanluk phase.

CHAPTER 9.

MATERIAL MANIFESTATIONS AND POWER STRATEGIES

9.1 INTRODUCTION

In my research, I aim to understand how leaders and emerging elites at Cahal Pech manipulated the physical landscape and political economy to wield power over other members of the community in either a network or corporate system (Blanton et al. 1996). At the same time, I seek to clarify how political dynamics changed during the Middle Preclassic period (1100/1000-350 B.C.). I investigate these concerns by analyzing and comparing architecture and the distribution of artifacts and activities. My analysis is based on the notion that architecture symbolizes and reinforces political systems and reflects how they change through time (Aimers et al. 2000).

My assessment of activities is made difficult by the fact that most of artifacts used in this analysis came from construction fill. Nevertheless, I believe that most of these artifacts deposited in fill were used in or near the structures that they covered. Therefore they shed light on activities conducted in or near the buildings. Along with architectural form, these activities provide insights about the function of the different constructions. After discussing function, I compare the Middle Preclassic buildings in SW Plaza B with architecture exposed at other areas of the site core and periphery. Unfortunately, data from the other areas are not as extensive as the SW Plaza B dataset. In some cases, a complete description of architecture is lacking. In others, there is no analysis or description of the artifacts recovered from the different contexts. This is particularly true for the pottery, making it impossible to calculate relative frequencies of artifacts, which

allows comparison of contexts excavated through different excavation techniques or contexts with different dimensions. Nevertheless, the available information shed some light on similarities and differences.

There is another point worth considering. My analysis is based on the premise that the northern and southern structures in Plaza B were created and occupied by different social groups or households. This premise is based on the fact that the northern and southern edifices were built on different areas of the hill. The northern group was constructed on the summit of the hill, while the southern group was built south of the slope, approximately 80 cm below the hilltop. In addition, these groups were separated by an open space of 15 m.

Different interpretations of the relationship between these structures are possible (Horn 2015:589-591). The northern and southern structures could have been occupied by a single social group that scattered their structures in a previously unoccupied space, with each structure serving different functions. The different structures also could have been residences occupied by different social groups that formed a larger social unit. In these last two cases, the spatial distribution of spaces and the characteristics of the architecture would be not helpful in assessing the political dynamics during the Cunil and Kanluk phases. Analyses of variability in artifact distributions between the northern and southern groups, however, reveal that the first alternative interpretation was not the case (Horn 2015:591-656), while the second alternative interpretation is difficult to address, because little is known about the social organization of the Middle Preclassic population of the Belize Valley. Therefore, following Horn (2015:589), I interpret the northern and southern structures in Plaza B as two different social groups or households.

9.2 THE MATERIAL EVIDENCE DURING THE CUNIL PHASE

9.2.1 The Southwestern Locations of Plaza B: Defining Form and Function

Because the Cunil construction phases are in the lowermost strata at Cahal Pech, they have been revealed only in test pits and have been only partially exposed. Despite this, I identified four construction phases associated with Cunil materials.

The first evidence of occupation in SW Plaza B consists of a tamped-marl surface (Plaza Floor B/20) achieved by scraping and leveling the original bottom of the hill. A similar construction technique was employed in the neighboring Structure B-4/1st and other early buildings in the lowlands (Andrews V 1981; Garber et al. 2004; Gerhardt and Hammond 1991; Hansen 1998; Powis 1996; Rice 1976; Ringle and Andrews V 1988; Smith 1972; Willey et al. 1965). Plaza Floor B/20 was likely associated with the line of cut stones and wooden posts identified by Cheetham (1996) as the remains of the perishable building that I renamed Structure Plaza B/1st. At some point during the Cunil phase, a second platform was constructed north of Structure Plaza B/1st. This new platform was approximately 20 cm high and was delimited by large, uncut limestone blocks placed on top of Plaza Floor/20. Its dimensions, specific shape, and other formal characteristics are unknown.

Unfortunately, the fill covering Structures Plaza B/1st and Plaza B/2nd yielded few artifacts. Based on the recovered artifacts, I established that people using these constructions engaged in the sporadic production of expedient tools made of chert and employed further modification to create scrapers and celts. Consumption of riverine resources (*N. ortmanni*, *P. glaphyrus*, and *P. indiorum*) was carried out at Structure Plaza B/2nd. Ceramic evidence is limited to a few serving vessels, such as bowls. In

consequence, evidence suggesting a public or private function for these buildings is inconclusive.

At some point at the end of the Cunil phase, Plaza B/3rd was constructed. In this phase, the previous platforms were covered with a clay-like marl surface (Plaza B/Floor 18), which likely functioned as the patio of a structure located north of my excavations. The natural hill slope was modified by constructing a small stairway that connected the lower southern area with the raised surface of the hilltop. This modification of the natural hill was also identified in the south-central and southeastern sections of Plaza B excavated by Garber and colleagues (Horn 2015) and Cheetham (1995), respectively. The construction of this stairway may imply that, before this time, the northern and southern areas were not connected, supporting the notion that they were two independent architectural groups (see Horn 2015:589-591). The new stairway also meant that people using the southern structures began to access the central open space that divided the groups.

People occupying the space of Plaza B/3rd were involved in a wider range of activities in comparison with the two previous construction phases. Along with the sporadic production of casual flakes, people occupying Plaza B/3rd used disks made of limestone and river cobbles, perhaps indicating the practice of beekeeping. Food processing, consumption, and serving also were carried out around this construction. Activities involving food are evidenced by the presence of granite *manos*, vertebrate and invertebrate fauna (river clams, spiky jute, and a bone fragment of white-tailed deer), and slipped serving vessels (bowls and plates). All these activities suggest that Plaza B/3rd

likely functioned as a domestic space. In addition, the presence of granite suggests that this household was involved, either directly or indirectly, in regional exchange.

During the Cunil–Kanluk transition, a cobbled platform identified and an associated patio surface (Plaza B/Floor 17) were built (Cheetham 1996). With the construction of Plaza B/Floor 17, the constructed area was elevated by 50 cm, to reach the same level as the uppermost step of the stairway. This cobbled platform was located on the northeastern end of the patio floor made of tamped earth/marl. The horizontal extent of the patio floor is unknown. Garber and colleagues (see Horn 2015) exposed a similar surface in the southern section of their trench, suggesting that the patio could have extended towards the southcentral section. Evidence indicates that the occupants of Plaza B/4th continued manufacturing casual flakes and consuming spiky jute, river clams, and vertebrate fauna resources. Food serving also was carried out; I identified slipped bowls, dishes, and small bowls. Although evidence is not conclusive, Plaza B/4th may have functioned as a domestic space. The household occupying this location was involved in regional exchange and long-distance trade, as a slate pendant, a serpentine stone fragment, and an obsidian casual flake from CHY were part of their inventory.

9.2.2 The Other Sections of Plaza B

When data from SW Plaza B are compared with the scant Cunil evidence from other sections of Plaza B, interesting patterns emerge. Plaza B constructions neighbor Structure B-4. Although the first two construction phases of this structure were similar to the structures in SW Plaza B, the two following phases stood out based on their architectural form. Structure B-4/3rd consisted of a basal platform supporting a small

apsidal building made of two parallel rows of roughly-cut stones. Each of these rows was two courses high. Structure B-4/4th was even more complex. It consisted of a plastered basal platform located on the eastern end of a patio surface made of plaster and cobbles. The basal platform supported a perishable building whose walls were decorated with white plaster painted with wide vertical red bands (Awe 1992; Cheetham 1998).

Unlike the southern constructions, the northern group underwent less intense construction activity (Horn 2015). Its first occupations, placed on top of paleosol, were quite modest. In the northcentral section, this occupation consisted of a low cobbled platform with a tamped-marl patio floor. In the northwest corner, there were two sequential plastered floors. Southwards, there was a tamped marl surface and a foundation made of roughly cut stones that likely supported a perishable superstructure. Horn (2015) hypothesizes that all these constructions served as residences.

9.2.3 A Comparison: Implications of the Architecture

The architectural forms, construction techniques, and functions of the southwestern and northern structures were quite similar during the entire Cunil phase. These architectural groups, however, were different in two important aspects. The construction of the southwestern group required a considerable amount of labor as it involved the raising of the original surface level by approximately 80 cm. In contrast, all the Cunil northern constructions rested directly on bedrock or on the original land surface. Most importantly, the southwestern group enjoyed certain prominence in terms of its centrality because it was spatially associated with Structure B-4, perhaps as part of the same architectural group or as a related household's dwelling.

Structure B-4 stood apart from other residential buildings during the second part of the Cunil phase, when Structures B-4/3rd and B-4/4th were built. The unique architectural traits of these constructions may imply that social actors living in these locations were acquiring the ability to manipulate resources and, therefore, wielding power over the community to mobilize labor to build their residences. This is particularly true for the Structure B-4/4th, which was the only Cunil building finished and decorated with plaster. Lime and plaster are regarded as conspicuous construction materials because they fulfilled similar functions to tamped marl or earth (Sullivan 2015). The production of lime plaster required not only large amounts of wood fuel and considerable labor investment, but also the application of specialized knowledge (Sullivan 2015; Villaseñor Alonso 2009). In fact, in other areas of Mesoamerica (e.g., San José Mogote, Oaxaca), plaster was used as the distinctive feature of public architecture (Flannery and Marcus 1976). Although Structure B-4 has been interpreted as serving residential functions, it has been also proposed that it was a place where certain communal events took place (Awe 1992; Cheetham 1998).

The manipulation of valuable resources by Structure B-4 household also was demonstrated in other material culture. First of all, the inhabitants of this structure utilized serving vessels decorated with a variety of incised pan-Mesoamerican designs that have been interpreted as part of a belief system that spread across Mesoamerica through interregional interaction (Marcus 1989). The Structure B-4 household had the means to manipulate the long-distance interactions through which pan-Mesoamerican motifs and their social use were acquired. This household restricted the use of pan-Mesoamerican motifs within the community. The southwestern and northern groups did

not have access to them (Cheetham 1998). In this way, Structure B-4 actors created obligations of reciprocity with the participants, which could have led to some kind of unequal social relationships (Awe 1992; Brown 2007; Cheetham 1998).

Second, in addition to communal feasts, the Structure B-4 household practiced rituals associated with ancestor worship (Cheetham 1998). These ritual events seem to be restricted to this location as neither the southwestern nor the northern group consumed ceramic figurines during this phase. This could hint at the notion that only Structure B-4 household had ancestors, which could make sense if the household was the first one to settle in the Cahal Pech territory (see McAnany 1995).

Finally, the Structure B-4 household enjoyed preferential access to goods regarded as valuable in other Mesoamerican regions (Awe and Healy 1994; Cheetham 1998; Grove and Gillespie 2002; Stanchly and Dale 1992). Some of them were obtained locally (certain species of vertebrate fauna and riverine shells), while others were procured through regional interactions (slate items) or long-distance networks (CHY obsidian flakes, jadeite items, and marine shell beads). The preferential access of goods obtained through exchange networks seems to be a confirmation of the manipulation of interaction networks by the Structure B-4 household. Nonetheless, the control over the regional and long-distance interactions was not absolute. The northern and southwestern households also had access to some valuable items (slate plaques or disks), although in lower relative frequency than in Structure B-4.

Everything considered, the three residences discussed in this chapter were similar regarding their architectural forms, construction techniques, and functions during the first part of the Cunil phase. This conforms to the model of political organization proposed for

that time (Awe 1992; Cheetham 1998), in which this community was an egalitarian society. During the second part of the Cunil phase, however, there were significant changes in the ways in which the Cahal Pech actors organized their political economic system. The Structure B-4 household started manipulating certain valuable resources, particularly those belonging to the economic or material category. This household was able to constrain the use of architectural forms and construction materials, restrict the use of pan-Mesoamerican motifs and the knowledge for using them within the social sphere, and have preferential access to local and non-local goods. All these elements seem to indicate that Structure B-4 participated in and manipulated non-local interaction networks.

The southwestern household may have been part of the Structure B-4 faction or even part been of the same household, allowing it to invest a considerable amount of labor in their dwellings, particularly to the labor involved in raising the original surface of the hill by 80 cm. The northern household also took some part in the non-local networks, although its participation was limited to obtaining slate plaques, obsidian flakes and some greenstone items. The networks through which pan-Mesoamerican motifs circulated were controlled by the Structure B-4 household. This difference in network participation was also evidenced in the built environment, as the northern group was not able to mobilize as much labor as the southern faction.

This evidence suggests that social differentiation emerged during the second part of the Cunil phase, with the leaders occupying Structure B-4. These leaders focused on manipulating material sources of power that set them apart from the others households and in doing so, they employed a network system to organize their political economy.

9.3 EARLY FACET OF THE KANLUK PHASE

9.3.1 Form and Function of the Southwestern Buildings of Plaza B

During the early facet of the Kanluk phase, SW Plaza B underwent four construction phases. In the fifth construction phase, the inhabitants of this location constructed two small platforms resting on a tamped earth floor with yellow stones (Figure 9.1). With the construction of this surface, the built area was raised another 50 cm, reaching the summit of the original hill and placing the northern and southwestern groups at the same level. The total dimensions of the patio floor are unknown, but it extended as far as the southcentral section (Horn 2015).

The characteristics of the buildings were not determined either. Nevertheless, I documented that Plaza B/5th-A was delimited by two parallel rows of roughly cut stones, each row being one-course high. Plaza B/5th-B consisted of a double course of roughly cut stones. These buildings were placed on the eastern and northern edges of the patio suggesting that they could have been arranged around a courtyard. Although its date is difficult to ascertain, the ramp-like feature in the southcentral section (Horn 2015) was probably built during the construction phase Plaza B/5th. Even though the contemporaneous basal platform, its superstructure, and its associated patio floor made of tamped marl and small pebbles were built during this phase, they were not associated with Plaza B/5th-A and Plaza B/5th-B, since their access faced westwards.

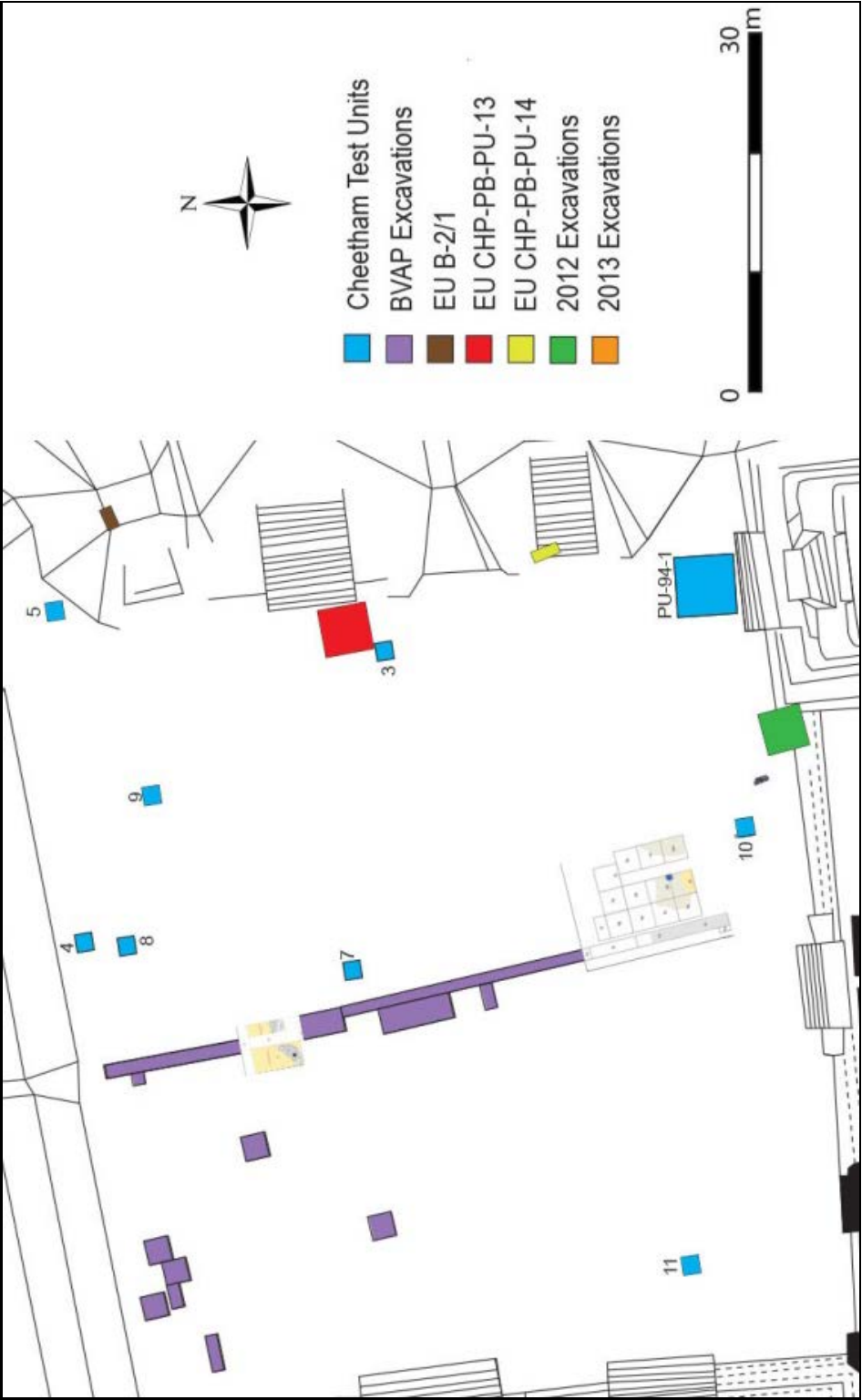


Figure 9. 1. Map of Plaza B during the construction phase B/5th, showing the northern and southwestern architectural groups

The occupants of Plaza B/5th were engaged in the manufacture and modification of expedient tools using chert that was locally available. The presence of a spheroid made of river cobble suggests food processing, under the premise that these items were used as cooking devices (Simms et al. 2013). Nevertheless, grinding tools were not found in the repertoire. There is evidence of riverine snail consumption and food serving using bowls, dishes, and tecomates. Unslipped bowls and jars could have been used for storage. The occupants of this space also had access to ceramic anthropomorphic figurines, implying that they were performing some ritual activities to communicate with beings from the supernatural realm. The small number of figurines, however, suggests that these activities were carried out intermittently. The previous activities coupled with the architectural arrangement suggest that the Plaza B/5th space functioned as a residence.

In the following construction phase, the previous buildings were covered by a tamped earth patio floor. On the eastern end of this patio, the inhabitants of SW Plaza B built a small structure—either apsidal or circular in shape—whose foundation was made of small slabs set upright (Structure Plaza B/6th). The rectangular Platform H, located about 4 m to the north, was probably contemporary (Figure 9.2). In addition to its innovative shape, this structure was built using large slabs (Horn 2015) and its dimensions were substantial (56 m²). Its proximity to the apsidal structure indicates that both structures were part of the same architectural group.

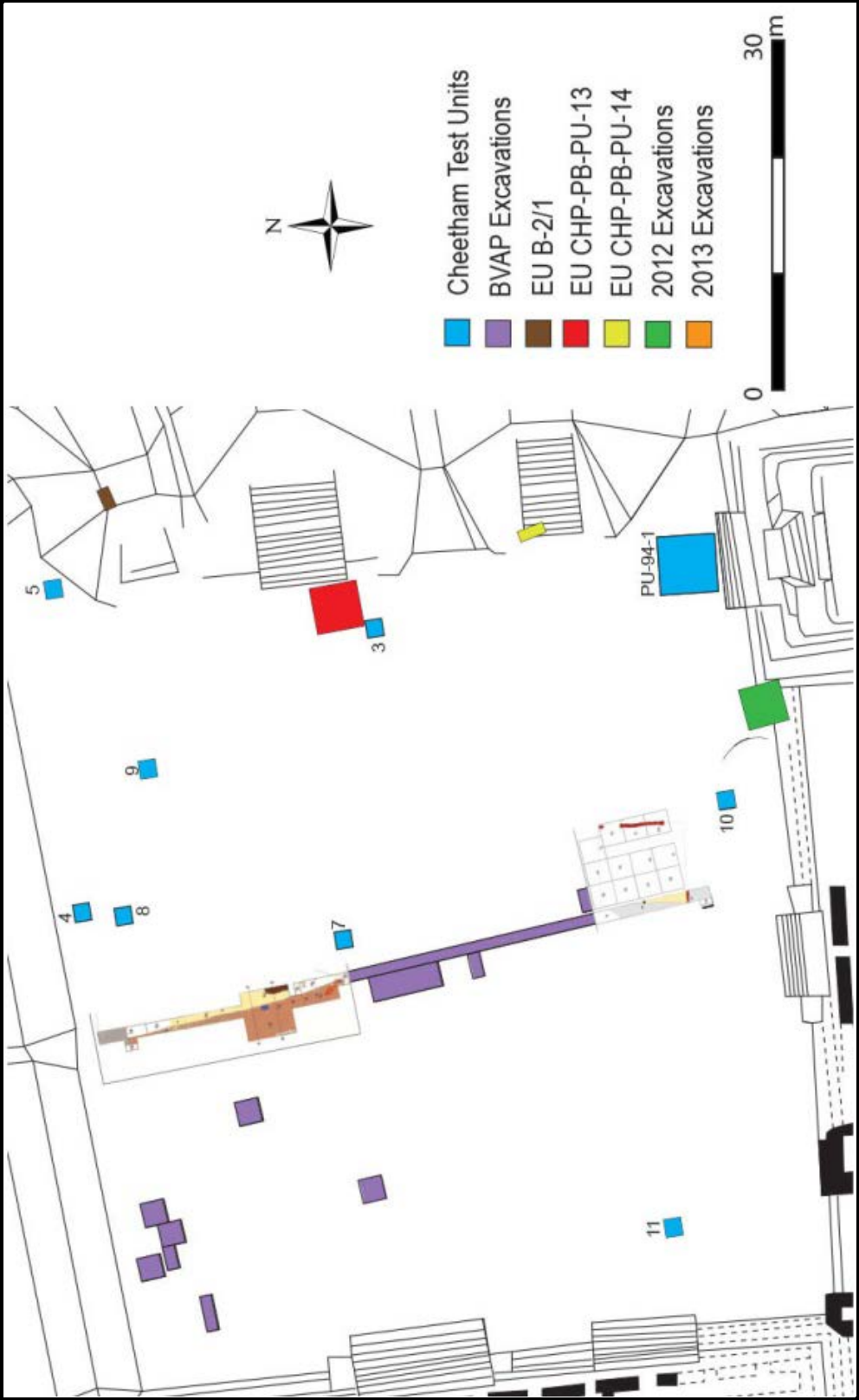


Figure 9. 2. Map of Plaza B during the construction phase B/6th, showing the northern and southwestern architectural groups

People using Structure Plaza B/6th continued practicing some activities associated with the previous phase, such as expedient tool production, freshwater mollusks and faunal consumption, and ritual performances (e.g., ancestor veneration). Although evidence suggesting food processing was not found, ceramic material indicates that food serving and storage were carried out. Nevertheless, the practice of these activities was limited. For these reasons, it is possible that this location was used for residential purposes.

The following construction phase, Plaza B/7th, is not well understood yet as it was only represented by a white, unpolished and chalky surface, made of tamped marl or lime. The small slabs continued to be exposed, which may suggest that this floor was a resurfacing event. Nevertheless, I interpret this surface as a different construction phase because each previous patio surface was elevated a few centimeters above the prior one. In addition, the inventory of artifacts associated with Plaza B/7th was larger than the previous phases, which allowed identifying a larger variety of activities.

The production and further modification of casual flakes continued to be carried out in this space. The first drills on flakes and microdrills on spalls appeared. These formal tools have been associated with craft production, such as the manufacture of shell ornaments or slate goods. Unfortunately, there is not clear evidence of production of shell or slate items, as no debitage or finished goods were recovered. In fact, only one marine shell fragment was associated with this location. In contrast, there is evidence that yarn was being hand-spun by the people using Plaza B/7th, because a ceramic spindle whorl was associated with this construction. Based on its metric attributes, it is possible that this spindle whorl was used to spin long and coarse staple fibers to produce a thick and loose

thread twist (Parson and Parson 1990). If the perforated sherd was being used as support for the spindle, then it is possible that the resulting thread had a slight better quality, allowing the production of soft textiles for clothing. In addition, the occupants of Plaza B/7th could have been involved in certain aspects of building construction, particularly surface plastering.

Plaza B/7th people displayed an increasing consumption of riverine resources (*N. ortmanni*, *P. indiorum*, and *P. glaphyrus*). Food serving and storage also persisted, as indicated by serving vessels (slipped bowls and dishes) and unslipped bowls and jars. Ritual activities also were performed, but these rituals may have been randomly practiced as only two anthropomorphic figurines, small jars and censers were identified. The previous aforementioned activities conducted in Plaza B/7th indicate that this space was domestic in character.

At the end of the early facet, a new surface made of tamped gray-brown clay was built. This surface served as the patio for an apsidal platform (Plaza B/8th-A) that perhaps faced Structure B-4 (Figure 9.3). Its retaining wall was made of four courses of roughly-cut stones, rising about 56 cm. Based on their spatial proximity, it is likely that Plaza B/8th-A was associated with a platform located a few meters north.

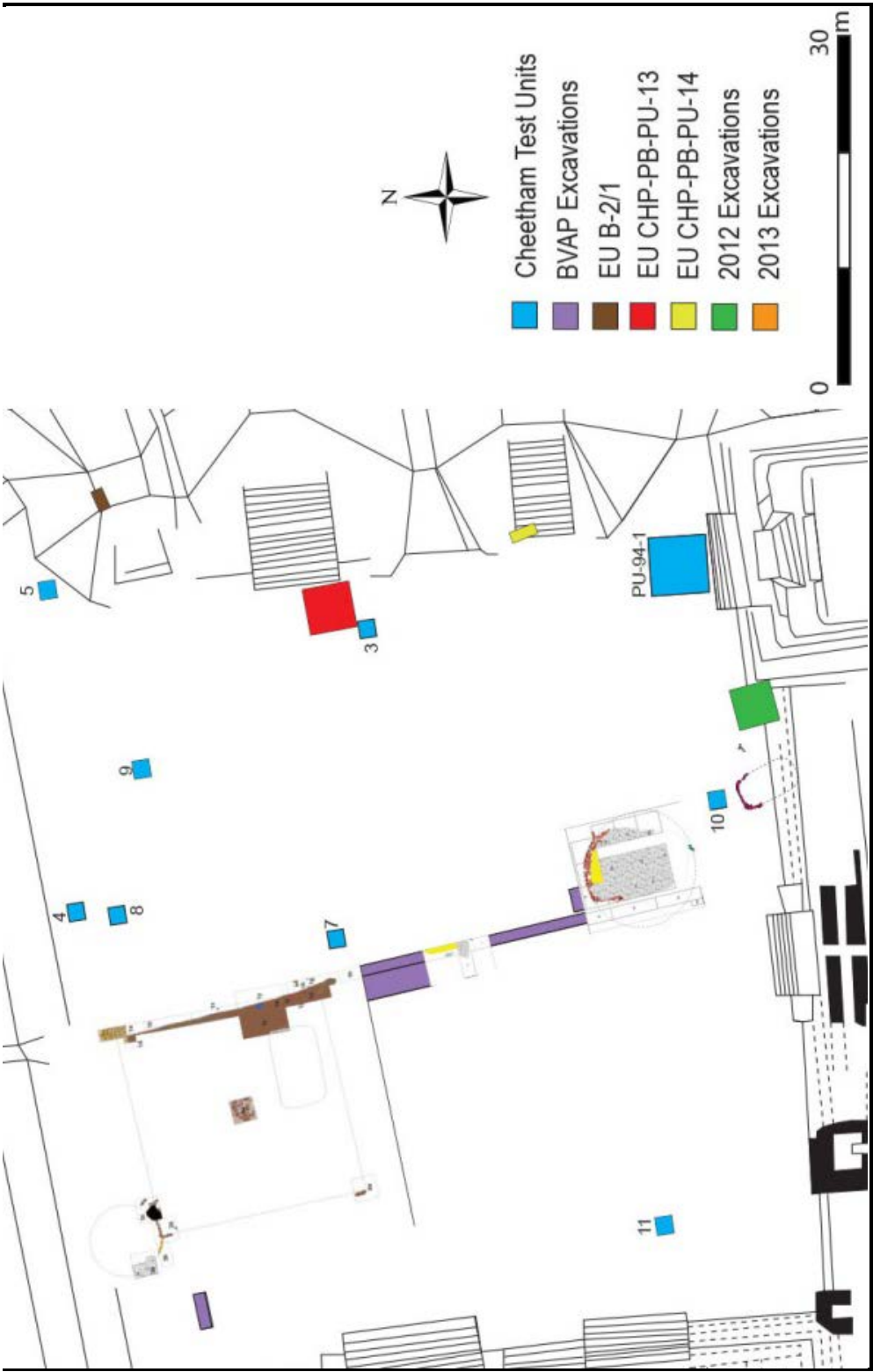


Figure 9. 3. Map of Plaza B during the construction phase B/8th, showing the northern and southwestern architectural groups

While Garber and colleagues (2010) describe this structure as a round platform, Horn (2015) depicts it as apsidal in shape. Horn inferred this layout based on the remains of its cobbled surface and its foundation made of roughly-cut stones and cobbles. The structure, however, was partially dismantled in ancient times. Consequently, only the northern section of the foundation was recovered. Based on this architectural evidence, it is difficult to fully assess the form of this building. Nonetheless, it is likely that this building displayed a rounded rather than an apsidal shape. During the excavations of EU CHP-PB-PU-26, two roughly-cut stones were exposed, which could have been part of this platform. If this platform was in fact round, then it measured about 9.5m in diameter. With regard to its function, Horn (2015) interpreted this building as a domestic space. Round buildings in the lowlands, however, have been usually interpreted as public in nature (Aimers et al. 2000; Hendon 2000). In consequence, it is difficult to assess the function of this platform.

Regarding the activities carried out by people occupying Plaza B/8th, the production and further modification of casual flakes continued to be practiced on an ad hoc basis. Plaster working also persisted. Plaza B/8th inhabitants also may have been involved in some food processing activities, at least cooking with hot stones. In addition, they were consuming significant amounts of riverine resources, particularly *P. indiorum* and *P. glaphyrus*. *N. ortmanni* was being consumed as well, but its numbers decreased relative to the previous construction phases. There is a minor presence of marine shell fragments, indicating that, even though the Plaza B/8th inhabitants consumed marine shells, they had limited access. Based on the ceramic materials, I suggest that food-serving was an important activity practiced by the ancient inhabitants of Plaza B/8th-A

because a large amount of slipped bowls and dishes were recovered. Food processing and storage—represented by unslipped jars and bowls—also were present, although these activities were not as significant as food-serving.

Ritual activities continued to be practiced intermittently. Only six anthropomorphic figurine fragments and a few miniature bowls and miniature jars were identified. All the activities mentioned above indicate that Plaza B/8th-A served residential purposes. The household occupying this space had access to some ornamental goods, such as a sandstone pendant, a ceramic bead, and shell ornaments. Nonetheless, with the exception of the marine shells and a few Mamom ceramic fragments, no exotic goods were found.

9.3.2 Material Culture across Plaza B

The different constructions placed in SW Plaza B were spatially associated with Structure B-4, which is characterized by its prominent architectural forms and conspicuous consumption of construction materials (Awe 1992:134-136, 1994; Ishihara-Brito and Awe 2013:125-126). Structure B-4/5th was constructed at the beginning of the early facet reached 70 cm in height. It consisted of a basal platform supporting a rectangular platform, both of which held perishable superstructures. The building became larger in the subsequent construction phases. At the end of the early facet, the basal platform stood 1.5 m high and supported one-course foundations on its eastern and western ends. These superstructures were reached through a staircase located on the northern side of the basal platform. The techniques used to construct Structures B-4/5th, B-4/6th and B-4/7th differed from the other Plaza B buildings. Although the retaining

walls were made of roughly-cut stones, these stones were mortared together and, then, plastered. Coupled with these innovative architectural forms and construction techniques, there was a shift in the function of Structure B-4 as, at the onset of the Kanluk phase, this location became public (Awe 1992). Although it is difficult to assess, it is likely that the southwestern constructions became the residences of the founder's household, as they were the most nearby buildings to Structure B-4. Together, the southwestern group and Structure B-4 would integrate the southern architectural group.

The northern group also witnessed construction activity during the first facet of the Kanluk phase, particularly in the north-central section. This activity started with two cobbled platforms and their associated patio floors made of tamped marl. These platforms were likely contemporaneous with the construction phase Plaza B/5th. At least one cobbled platform exhibited an apsidal form. These structures were covered by two consecutive platforms contemporaneous with Plaza B/6th or Plaza B/7th. The first platform was cobbled, while the second was delimited by a single course of stones. Roughly at this time, a rounded platform faced with roughly cut stones was built in the northwest corner of Plaza B. These northern buildings have been interpreted as domestic spaces by Horn (2015), although the round platform could have served a more public function (see Aimers et al. 2000; Hendon 2000).

At the end of the early facet, roughly contemporaneous with the Plaza B/8th construction phase, there was a significant change in the northern group as a massive basal platform (Platform B) supporting two superstructures was constructed. Despite its dimensions, the basal platform was delimited by roughly-cut stones and was surfaced with cobbles and tamped marl (Garber et al. 2007). The superstructures

consisted of one apsidal platform faced with two courses of roughly-cut stones and a cobbled platform (Horn 2015). No evidence of plaster was found. So far, there is disagreement about the function of this particular construction. On one hand, based on morphological characteristics and associated artifactual inventory, Horn (2015) argues that Platform B served as a residence. On the other hand, Garber and colleagues (2007; see also Garber and Awe 2008:187-188) support a public function based on the set of ritual deposits found beneath each corner of the basal platform. This ritual program has been interpreted as the remains of a ritual circuit associated with the death and resurrection of an important individual, perhaps an ancestor. Alternatively, the ritual deposits could have been part of dedication rituals associated with the construction of Platform B as residence.

9.3.3 Comparing the Material Manifestations: Power Strategies

Structure B-4 was the only building in Plaza B that stood out regarding its architectural forms—construction materials, retaining wall characteristics, and layout, which manifested the shift from private to public function. The private-to-public shift meant the creation of a sacred space where political actors performed a variety of ritual displays that were important for the community to witness in order to create and reinforce community solidarity (Grove and Gillespie 2002). The sacred space was perhaps built by and for the community, but it was likely controlled by the founder's household as they could have proclaimed rights over the space as the space where their ancestors lived (see McAnany 1995).

The construction techniques used to build the southwestern and northern domestic structures were similar in certain aspects. Building foundations were made of roughly-cut stones, patio surfaces were created by tamping marl or clay loam, and none of these structures were finished with plaster. Architectural plans were also similar, as most structures were apsidal buildings. Nevertheless, there were important differences. First of all, cobbles were not used to create surfaces in the southern group. Second, some building foundations in SW Plaza B were relatively more elaborate than those of the northern buildings, as they were either double rowed (e.g., Structure Plaza B/5th-A) or multi-course (e.g., Plaza B/5th-B and Plaza B/8th-A). Third, three structures located on the southwestern section were different in terms of their architectural plan. They consisted of a basal platform holding a superstructure (Plaza B/5th), a rectangular building (Plaza B/6th or Plaza B/7th), and a large round platform (Plaza B/8th).

The use of innovative architectural forms could have been a prerogative of the southwestern household as descendants of the founder's household. The introduction of the rectangular shape in domestic buildings meant not only a change in the architectural style, but also a means of social differentiation, because the only building displaying a rectangular shape thus far was public in nature: Structure B-4. By building their residence with this form, the southwestern household promoted its right to reproduce this form of sacred architecture. The more complex building forms, such as structures on basal platforms, and surely had the purpose of symbolizing social differentiation. Finally, if the large round structure was in fact a ritual space embedded within the residential group, then architecture was being manipulated once again so the household could differentiate itself from other households.

On the other hand, the northern group also displayed some innovative architectural layouts like the smaller round platform and Platform B, but this occurred only until the end of the early facet of the Kanluk phase. There are some points to consider regarding Platform B. First of all, its retaining walls rested directly on bedrock implying that the original surface of the northern area was not raised as was the original surface of the southern compound. Second, the retaining walls and layout of the superstructures were similar to the previous northern structures, and none of them displayed a rectangular form. This architectural shape was restricted to the southern group, perhaps because of its association with sacred architecture. Third, the northern group covered an area that was only slightly larger than the southwestern group, or even smaller if Structure B-4 is included. Thus, the construction of Platform B required an equal amount of labor or less than the contemporaneous southern compound.

To sum up, the southwestern group experimented with and restricted the use of new architectural forms from the beginning of the early facet, while the northern group continued using the same Cunil-era forms until the end of the early facet when the round platform and Platform B were constructed. In addition to the innovative forms, the southwestern residences were prominent regarding their centrality as they were spatially associated with Structure B-4, an attribute that clearly contributed to setting them apart from the other households.

Besides its architectural forms and public function, Structure B-4 also was notable because of the amount and variety of materials associated with its early Kanluk construction phases. These contexts provided a large number and variety of vertebrate faunal remains (particularly large mammals like venison and exotic fauna like crocodiles

and sea turtles), freshwater shells, non-local goods (obsidian flakes, jadeite beads, granite *manos*, shell beads, etc.) and twenty-nine ceramic figurine fragments. The southern compound was simultaneously participating in regional and long-distance exchange networks to obtain prestigious goods and foods. Nevertheless, this household failed to restrict participation in interaction networks, and the northern group had access to a considerable amount of goods obtained through long-distance (basalt grinding tools, obsidian flakes, Mamom pottery, greenstone ornaments) and regional exchange networks (e.g., slate items, granite grinding tools and sandstone goods).

Coupled with the participation in exchange networks and the manipulation of the built environment, the southern household continued worshiping their ancestors. Nevertheless, instead of performing the rituals exclusively in the new place of residence—the southwestern buildings—the southern household continued to venerate their ancestors in Structure B-4. This was perhaps an attempt to prevent the disassociation of their ancestors from their former residence and, thus, ensure the household's right to regulate the use of Structure B-4. Despite of the manipulation of the sacred space and rituals, the southern household was not the only one that had access to meaningful ritual knowledge and performed ancestor veneration rituals, as indicated by the significant amount of figurines and the set of ritual deposits recovered during the excavations of the northern group (Garber and Awe 2008; Horn 2015). The cache program in the northern group also indicates that ideology and ritual performance were changing at the end of the early facet, changes that were signaled by the incorporation of round buildings into the domestic groups. By offering innovative locations for the performance of ceremonies, the households had new means to manipulate the belief system and the behaviors of the

community. Although both households had access to this new architectural form, the southern household had the resources to build a larger round building. This might mean that ceremonies performed in this space included more participants compared to those of the northern group.

Changes in ideology and ritual performance also may be indicated by the disappearance of pan-Mesoamerican motifs on vessels, a phenomenon that also was observed in other areas of Mesoamerica during the Middle Preclassic (Grove and Gillespie 2002:30). Instead of being displayed on ceramic vessels, abstract symbols were sometimes portrayed in other media regarded as valuable because of their rarity, form, or the technological skills needed to manufacture them. These include greenstone, jadeite or marine shell. Because of their value, the availability of these goods was likely restricted to a few during the Middle Preclassic, becoming the new inalienable goods (Lesure 1999b). This shift in media may indicate that symbols were no longer displayed in communal ceremonies but in events that were more private in nature. Alternatively, they could have become the personal paraphernalia used by a few. Nevertheless, there is no evidence of this paraphernalia at Cahal Pech so far. In this community, the pan-Mesoamerican symbols stopped being displayed during the early facet, with the exception of the lighting motif, which continued to be incised on some vessels of the Savana group. Some of these vessels were likely used in feasts. Nevertheless, evidence from the southwestern residences regarding the practice of feasting is inconclusive. The only evidence suggesting feasting consists of food-serving vessels, as faunal remains and riverine shellfish were rare in the artefactual inventory. Nevertheless, serving vessels could have been used during the domestic routine rather than feasts. So far, only

Structure B-4 has yielded evidence of such activity (Cheetham 1998), which is coupled with the other power strategies used by political actors of the southern household.

9.3.4 Incursion into the Periphery

We have no architectural evidence suggesting that the periphery was inhabited during the early facet of the Kanluk phase. If the areas outside of the architectural core were populated, it is likely that people lived in what Willey and colleagues (1965) have called “locations,” which consisted of temporary dwellings placed directly on top of the original surface or bedrock.

The only exception could have been the earliest constructions located at Structure A-1 of the Zopilote group. According to Cheetham (2004), the two first construction phases of this structure date back to the early facet of the Kanluk phase. These consecutive buildings were quite notable because their basal platforms reached approximately 2 m in height. On their summit, they supported structures made of perishable materials. These buildings also are distinguished because they were public and were not associated with residences.

It is not known whether this public space was controlled by one of the Plaza B households or was controlled by some group (s) in the periphery of Cahal Pech. Nevertheless, the fact that there were not associated domestic structures suggests that this space and the activities carried out in it were at least supervised by some group from the core, probably the southern household. This group had access to material and symbolic resources to harness the labor needed to build this structure. Structure A-1 was likely

constructed to create a sacred space to perform ritual displays and attract the surrounding inhabitants and, in this way, to expand the Cahal Pech community.

In summary, the information recovered from the early Kanluk contexts of Cahal Pech indicates that the political actors inhabiting the southern architectural group manipulated a range of sources of power, which were material and symbolic in character (Chapter 1). The manipulation of these valuable resources set them apart from other households. The northern social group also had access to similar sources of power, but they were less successful in controlling them and, therefore, in building and legitimizing a power base. This suggests that the political actors of the southern architectural group of Plaza B became elites and, therefore, a chiefdom political formation emerged during this early facet of the Kanluk phase.

9.4 THE LATE FACET OF THE KANLUK PHASE

9.4.1 Defining the Form and Function of the Southwestern Buildings

SW Plaza B underwent a reconfiguration in its built environment during the late facet of the Kanluk phase. At the beginning of the facet, Structure Plaza B/8th-A was covered by a low rectangular platform that stood 50 cm above its tamped-marl patio floor. The rectangular platform was still constructed with roughly cut stones, although they were better shaped and had more regular dimensions than those used in the previous apsidal building. Based on the range of activities conducted by the people of Plaza B/9th, I suggest that this building also served as a residence (Figure 9.4).

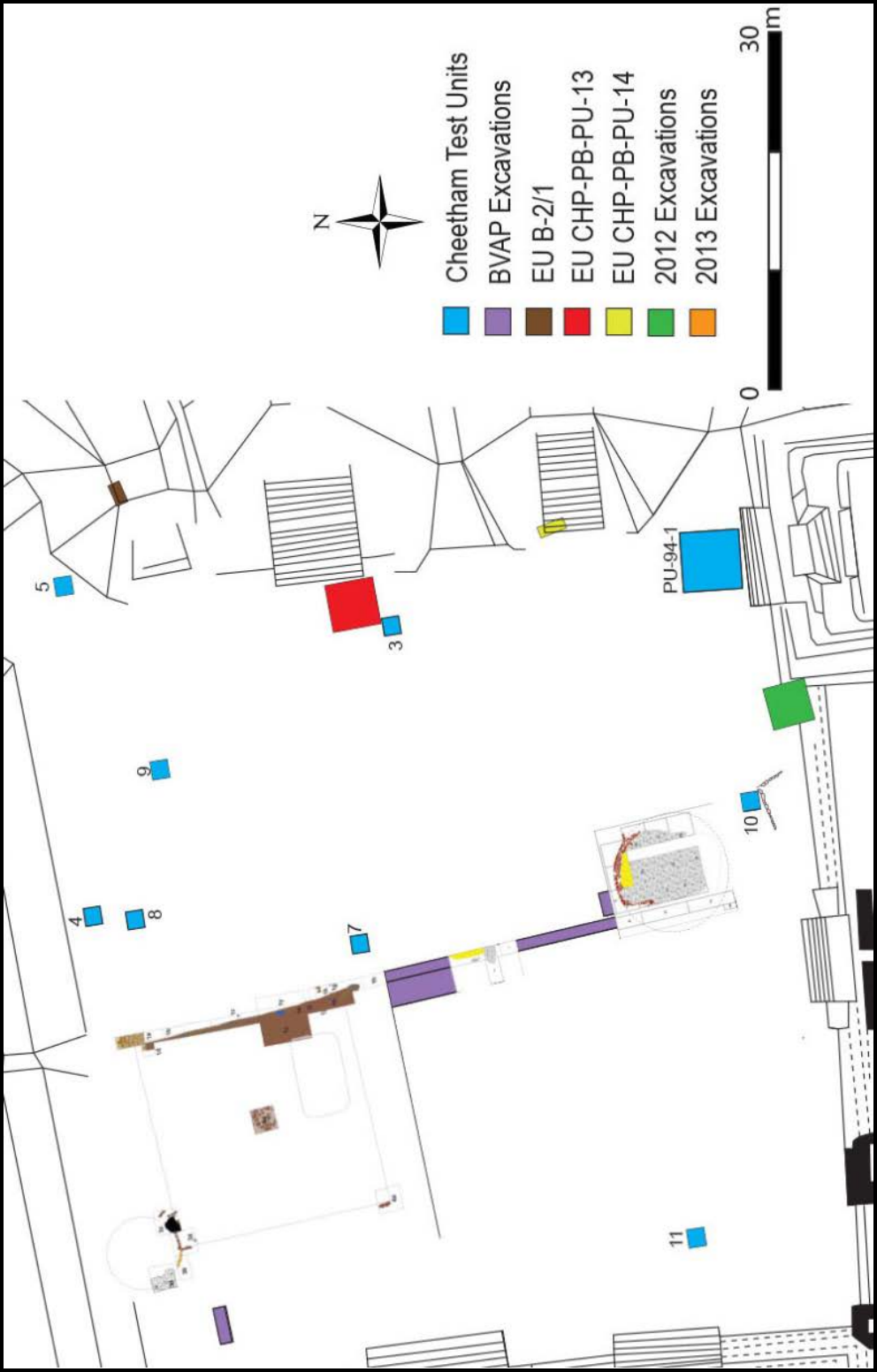


Figure 9. 4. Map of Plaza B during the construction phase B/9th showing the northern and southern group

The household inhabiting Plaza B/9th continued to be involved in craft production. They knapped expedient chert tools and modified them into scrapers and celts. They also carried out sporadic hand-spinning and produced textiles. Marine shell ornaments were also being manufactured in or near Structure Plaza B/9th, although the low frequency of drills on blades, microdrills on burin spalls, marine shell detritus, and shell ornaments suggests that this activity was part-time and randomly practiced. In addition to craft production, food-related activities also were conducted in this space.

Although no grinding tools were found, the spheroid stone suggests that some food processing was conducted by this domestic group. Moreover, people using this location consumed several riverine mollusks (*P. indiorum*, *P. glaphyrus*, *N. Ortmanni*, and *Pomacea flagellata*) and vertebrate fauna. It is likely that the imported conchs also were consumed before their shells were used to manufacture ornaments. Food-serving continued as an important activity as it is indicated by the slipped bowls and dishes. People occupying Plaza B/9th also performed ancestor veneration ceremonies, based on the number of figurines and miniature vessels. The household also engaged in regional and long-distance exchange, although their participation may have been occasional, as they only obtained a few slate items and some obsidian flakes from SMJ and blades from CHY.

The next construction phase, Plaza B/10th, consisted of a rectangular platform with a narrow terrace and a patio surface. The platform retaining wall consisted of five or six courses of roughly-cut stones, rising at least 50 cm above the tamped-marl patio surface. The terrace was three courses high, approximately 20 cm tall. I interpret Plaza B/10th as a household residence based on its associated activities (Figure 9.5).

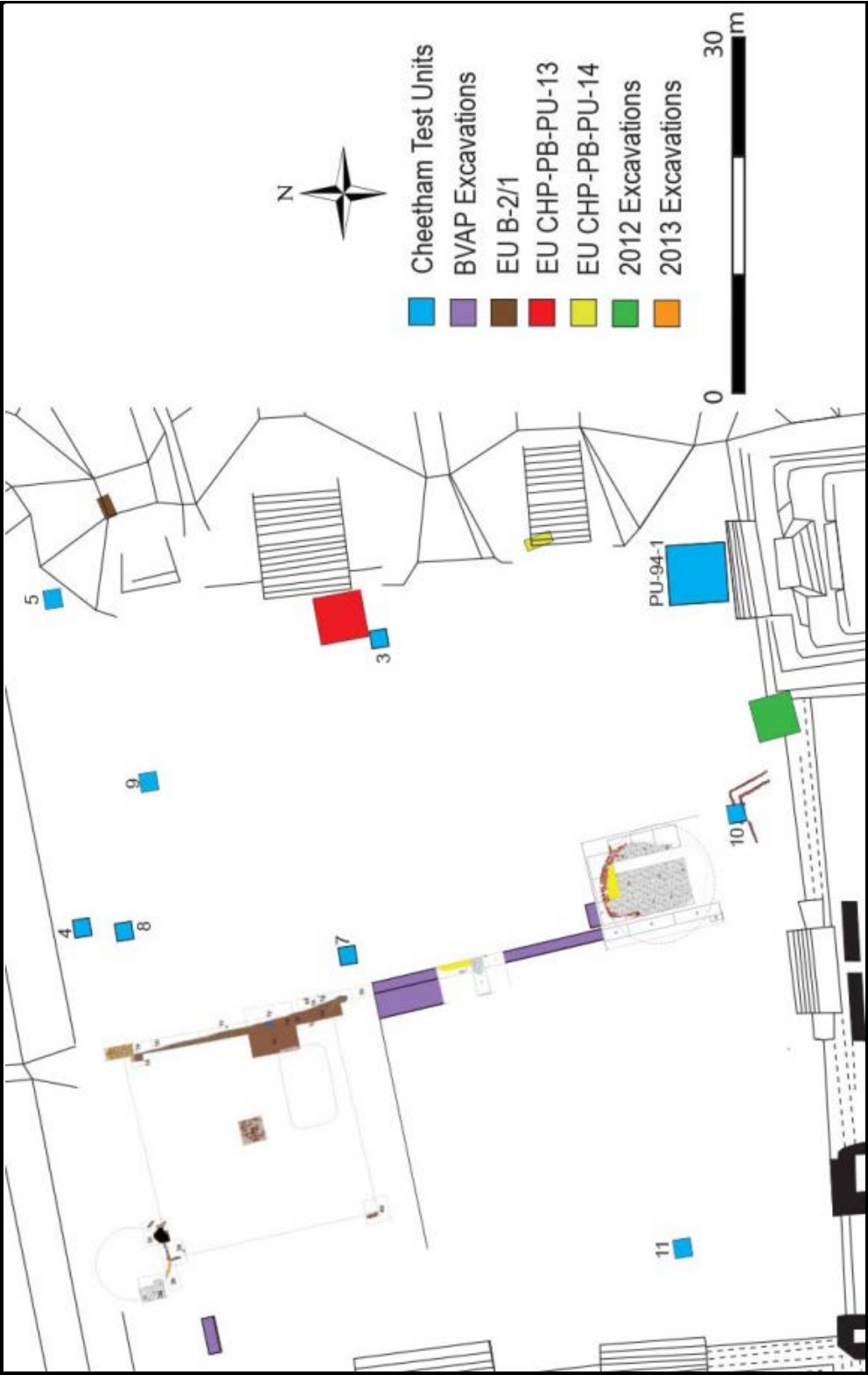


Figure 9. 5. Map of Plaza B during the construction phase Plaza B/10th showing the northern and southern group

The people of Plaza B/10th continued with the production of casual flakes and shell ornaments. Once more, these activities were part-time. The same can be said for the modification of deer long bones to produce bone ornaments or tools, the hand-spinning of yarn and plaster work. Even though evidence of food-processing has not been found so far, this household engaged in food-related activities. The household consumed large amounts of riverine resources (*P. indiorum*, *P. glaphyrus*, *N. Ortmanni* and *P. flagellate*) and a limited amount of marine invertebrate and vertebrate fauna—mainly large mammals like white-tailed deer and tapir. Food-serving persisted as an important activity. In fact, its significance may have increased, as a larger number of slipped bowls and dishes were recovered.

The significant amount of serving vessels along with the presence of spouted vessels and the consumption of a substantial amount of riverine mollusks suggests feasting in this location (Hayden 2001:40-41). Additionally, the performance of domestic rituals venerating the household's ancestors slightly increased relative to the previous construction phase. The construction fill covering Plaza B/10th yielded fourteen anthropomorphic figurines, three zoomorphic figurines, a musical instrument, a ceramic censer, and several miniature vessels.

Along with a rise of ritual displays, the household inhabiting Plaza B/10th had an increasing participation in regional and long-distance exchange networks, through which they obtained Mamom pottery and a variety of goods made of slate, granite, chert, marine shell, basalt, obsidian, and serpentine. It is unclear how some of these goods were procured as some materials are represented only by fragments and recycled tools. However, it is likely that basalt and granite were procured as grinding tools, while slate

was introduced as ornamental goods that, once broken, were recycled to create expedient tools. On the other hand, there is evidence to suggest that northern Belize chert was imported as complete tools such as hafted blades and stemmed macroblades, and that serpentine was introduced as adornments, obsidian was obtained as blades and flakes, and marine shells were introduced as whole specimens.

During Plaza B/11th construction phase, SW Plaza B went through a reconfiguration in its built environment. A rectangular platform interpreted as a dwelling (Structure Plaza B/11th-B) was constructed approximately 14 m west of Structure Plaza B/10th. This platform was oriented 15 degrees west of magnetic north, an orientation that differed from the previous structures. Even though its total dimensions were not established, the platform must have been a large construction as it covered at least 23.6 m² and stood approximately 50 cm high. The retaining wall consisted of four courses of roughly-cut blocks, mortared with marl and clay loam. A similar mixture of materials was used to create the surface of the platform and its associated patio flooring. A small construction abutted the northern retaining wall of Structure Plaza B/11th-B, and may have functioned as terrace or ancillary structure (Figure 9.6).

The rectangular domestic platform was associated with a small oval construction located three meters east. This oval feature measured 1.65 m by 1.35 m and stood approximately 10 cm above the patio surface. It was built with a single course of roughly-cut stones facing inwards, towards a cobbled surface covered with a tamped yellow clay surface. This structure was ritually terminated, suggesting a special function. Perhaps it was a private ritual space exclusively used by the Plaza B/11th household.

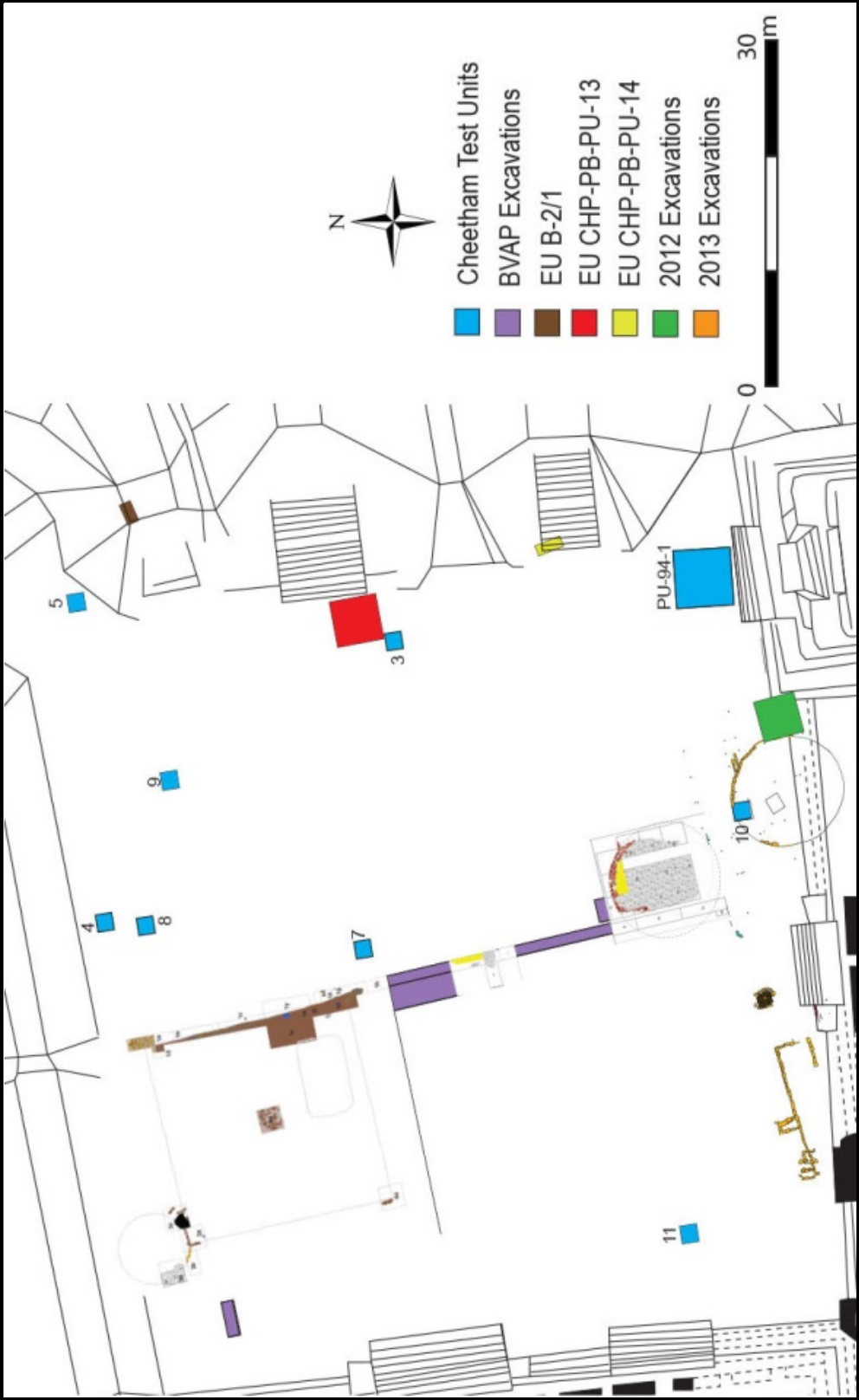


Figure 9. 6. Map of Plaza B during the construction phase B/11th showing the northern and southern group

In addition to this small special feature, the rectangular residence was associated with a round platform that was likely a keyhole-shaped platform (Structure Plaza B/11-A). This round platform covered Structure Plaza B/10th changing the function of the location. Structure Plaza B/11-A was likely a public structure where ceremonies were performed. This round platform measured 8.50 m in diameter and stood at least 30 cm above its plastered patio floor. Its retaining wall was made of three courses of well-cut stones, which were mortared together and covered with a thick layer of plaster. So far, it is unknown whether this building supported a perishable construction, although based on similar structures, it is possible that the platform was an open space. Additionally, it has not been determined if the round platform located to the north was dismantled and abandoned or remained functional.

Coupled with its particular architectural form, the special function of the key-hole shaped platform also can be inferred by the presence of two caches (a small Uck Red plate and a half section of a Savana Orange plate placed in an inverted position) deposited beneath its foundation, roughly in the northern and eastern sections. These caches were most likely part of a dedicatory ritual. It is possible that similar deposits were placed in the southern and western sections of the foundation. If so, the dedicatory ritual could be related to the symbolic reenactment of partitioning the universe. According to Mathews and Garber (2004:48; see also McAnany 1995:104), this concept is a metaphor for creation and it is used to invoke a supernatural involvement in many activities, including the rituals performed to animate a space and venerate ancestors. The intentional splitting of the Savana Orange plate into halves could have been related to this ritual notion as well (Brown 2007). Based on this, I believe that the keyhole-shaped

platform replaced the earlier round platform with regard to their functions, becoming in the new location where ancestor veneration rituals were performed.

Coupled with the special-function architecture, the significant amount of figurines and musical instruments associated with the Plaza B/11th group reveals the increasing practice of ceremonies dedicated to ancestor worship and veneration. These ancestor veneration rituals, as well as other ceremonies, could have been related to the ritual offering of foods in which miniature vessels and spouted vessels may have been used. As the key-hole shaped platform was integrated into the domestic Plaza B/11th group, it is likely that these displays were hosted by the Plaza B/11th household.

Spouted vessels also could have been used during feasting activities sponsored by the Plaza B/11th household. The practice of this activity is also suggested by the significant presence of slipped serving vessels and the increased consumption of freshwater snails (*P. indiorum* and *P. glaphyrus*, *N. ortmanni* and *P. flagellata*) relative to the previous late Kanluk construction phases. Vertebrate fauna deposited in the midden located east of the dwelling and elsewhere in the architectural group also could have been consumed during the feasting activities. This faunal sample included a considerable amount of large mammals (mainly deer), medium-sized mammals (e.g., dogs and gibnuts), and marine turtles. Conchs imported from the Caribbean also could have been consumed during these feasting activities. Like the vertebrate fauna and riverine resources, marine invertebrate consumption seems to have increased as well. Alternatively, the faunal resources could have been consumed during the household's daily activities. Besides food serving and consumption, the presence of manos, metates,

and spheroid balls implies that food processing was carried out in this architectural group. This last activity is usually considered as an important indicator of domesticity.

In addition to food related activities, the Plaza B/11th household was involved in craft production. They engaged in the production and modification of casual flakes. The manufacture of shell ornaments increased in importance, as indicated by a larger percentage of microdrills, marine shell debitage, and marine shell beads and pendants. Long bones of deer and medium mammals also were modified to manufacture ornaments or perforators like needles, pins or awls. In addition to the production of ornamental goods, people occupying Plaza B/11th group engaged in yarn spinning and plaster work. It is worth noting that these crafting activities appear to have been concentrated near the rectangular structure Plaza B/11th-B, rather than the keyhole-shaped round platform.

The Plaza B/11th household also demonstrated an increasing participation in long-distance and regional exchange networks through which they obtained large bifaces, slate objects (including mirror backs or complete mirrors), grinding tools made of granite and basalt, prismatic blades, greenstone and jadeite items, and Mamom pottery. This household was interacting, either directly or indirectly, with the northern Belize region, the Maya Mountains, the Maya Highlands, and the Petén. In addition to the goods obtained through exchange networks and ornaments manufactured locally, the Plaza B/11th household had access to a significant number of vessels belonging to the ceramic group Reforma Incised. Some of these vessels included the lightning motif, one of the pan-Mesoamerican symbols that remained in use. These symbols were incised on serving vessels, such as dishes and they may have been used in special events like feasts.

At end of the Kanluk phase, the area was reorganized again with the construction of a large cobbled platform (Structure Plaza B/12th), which was irregular in shape and at least 98m² in area. This platform was associated with a patio surface coated with stucco. The rectangular platform Plaza B/11th-B and oval feature Plaza B/11th-C likely remained exposed for some time. Nevertheless, they were covered during the Kanluk-Barton Creek transition when the cobbled platform and its associated patio surface were expanded westwards (Figure 9.7).

There are three lines of evidence indicates that the construction of the cobbled platform meant a radical change in function of SW Plaza B. First, a large limestone slab was discovered near the northeast corner of the cobbled platform. This slab was broken and incomplete. I believe that this slab represents a monument or altar associated with Plaza B/12th that was terminated when the cobbled platform was covered by the first Barton Creek-phase plaza floor. Second, further north, a cache consisting of a “Charlie Chaplin” figurine and twenty-three whole *P.indiorum* shells was deposited beneath the plaster surface. This ritual deposit was undoubtedly placed as part of a dedicatory ritual. Third, the artefactual inventory suggests that the cobbled platform did not serve as a domestic space.

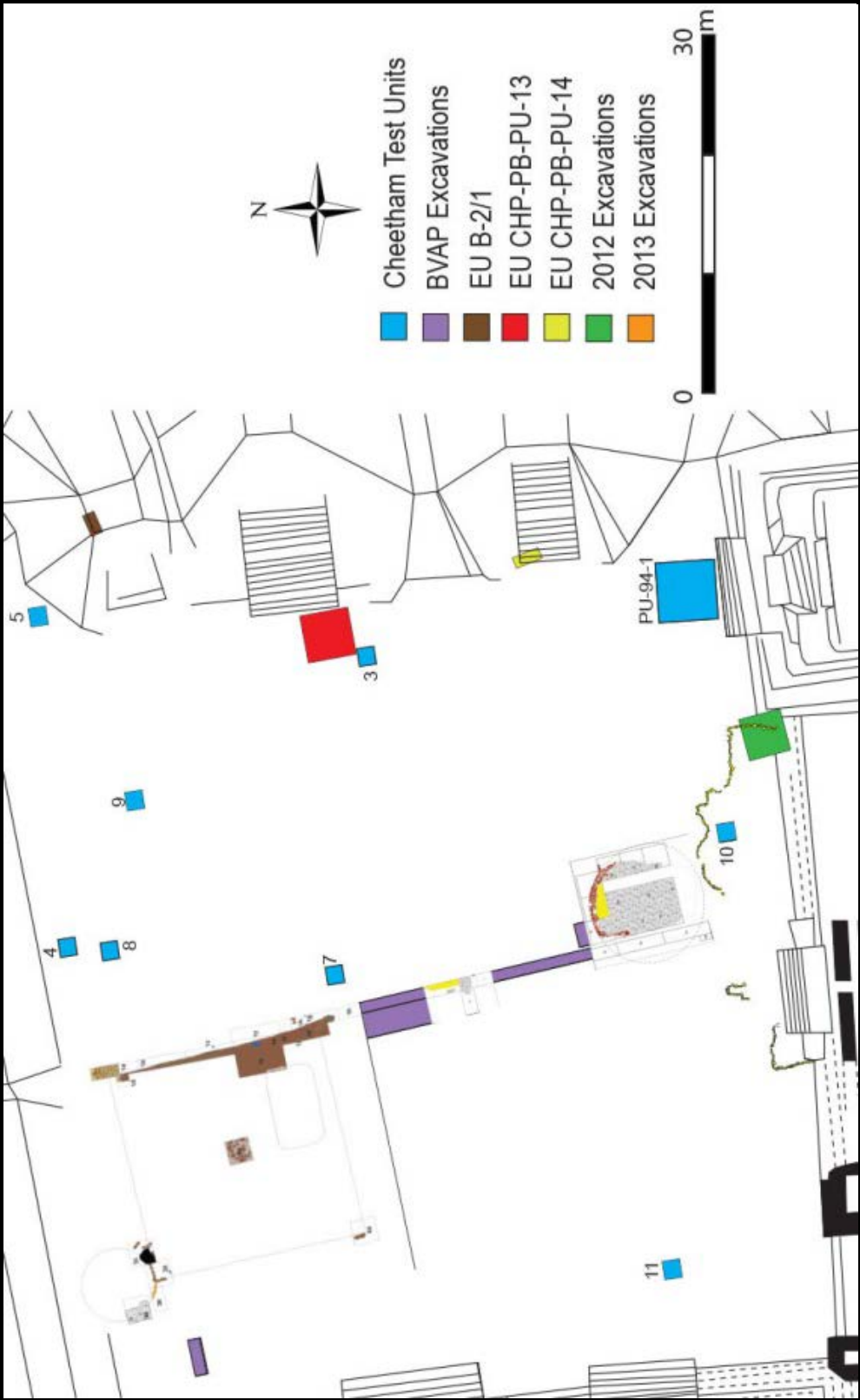


Figure 9. 7. Map of Plaza B during the construction phase B/12th showing the northern and southern group.

Despite the fact that food processing, yarn-spinning, and ritual performance continued to be carried out in this location, the intensity at which these activities were conducted significantly decreased. Additionally, evidence for the consumption of riverine resources, marine shells, and vertebrate fauna declined dramatically. Casual flake production and the manufacture of marine shell ornaments practically disappeared. Despite of this, people using the cobbled platform continued participating in regional and long-distance exchange networks, although the amount of imported goods also decreased. For these reasons, I have interpreted the cobbled platform as a space that served public functions. Perhaps it was at this moment that the founder's household moved their residence to Plaza A, courtyard that would house the Cahal Pech elite until its abandonment.

9.4.2 Architectural Evidence across the Site Core

The neighboring Structure B-4 took on monumental dimensions during the second part of the Kanluk phase: it consisted of a 2-meters-high basal platform that held a low platform supporting a circular building. During the transition to the Barton Creek phase, roughly corresponding to the Plaza B/12th construction phase, the basal platform stood 2.5 m high. The retaining walls of these buildings were made of well-cut limestone blocks, which were mortared together and coated with stucco. Few artifacts were recovered during the excavations of these late Kanluk buildings. Despite this, excavations in the buildings yielded goods obtained through regional (e.g., granite manos and slate plaques) and long-distance exchange networks (e.g., obsidian prismatic blades and Strombidae shells), as well as a significant amount of figurine fragments (n=104).

At the same time, other areas of the acropolis underwent their first occupation. A low platform made of one course of roughly-cut stones was built at the northeastern corner of Plaza B, a low round platform measuring 5 m in diameter was constructed in Plaza C, and two consecutive structures were built in Plaza F (Audet 2001; Peniche May 2012b; Santasilia 2013b:58). The buildings constructed in Plaza F were quite interesting. They consisted of low platforms that were built using river cobbles and limestone blocks. These retaining walls were all covered in a thick layer of plaster. The functions of the buildings constructed in Plazas B, C, and F have not yet been determined. Nevertheless, it is likely that the round platform served as a ritual space, while the Plaza F structures were public in function because they were constructed using high-quality construction materials. The low structure on the locus of Structure B-2 was most likely residential.

9.4.3 Architectural Evidence in the Periphery

It was during the late facet of the Kanluk phase that the peripheral groups of Cas Pek, Tolok, Tznic, Zopilote and Zubin were first settled. It has been proposed that the low plastered platform at Tznic (Conlon 1992), the single-course platform at Plaza B of the Zubin group (Iannone 1994) and the low platforms in the southern group of Tolok (Powis 1996) served as residences. Nevertheless, the evidence for a domestic function for these structures is still inconclusive. Another domestic area could have been located by the locus of Structure 1 of Tolok, near the midden. In contrast, data from Cas Pek indicates that its structure was domestic in function (Lee and Awe 1995).

The Cas Pek domestic building counted with two construction phases dating to the late facet of the Kanluk phase. The first construction phase consisted of a single-

course platform made of roughly-cut stones and tamped-marl flooring. The second phase was represented by an 8m-by-9m basal platform that supported a small single-course foundation on its southwestern section. The superstructure was built during the Kanluk-Barton Creek transition (Ebert et al. 2016; Healy and Awe 1995), suggesting that Cas Pek was settled late in the second part of the Kanluk phase. This household manufactured shell ornaments but this activity was likely conducted during the Kanluk-Barton Creek transition. The Cas Pek household also processed foods, as demonstrated by the grinding tools and they consumed riverine mollusks, mainly apple snail and river clams. Vertebrate fauna also were consumed, including marine fish, marine turtles, turkeys, deer, peccaries, dogs, and agouti. The marine fish and turtles were undoubtedly obtained through exchange networks that included the Caribbean. In addition, this group participated in other regional and long-distance networks through which they obtained granite grinding tools, slate items, and obsidian blades. Ancestor veneration also was performed in the Cas Pek domestic building, as twenty-one figurine fragments were associated with the three consecutive buildings.

In contrast, constructions discovered at Tolok, Zubin, and Zopilote held non-domestic functions. As the architectural characteristics of each building differed, it is likely that the nature of activities conducted in them also were different. At Tolok, late-Kanluk architecture was discovered at the southern group, and consisted of an architectural group comprised of a cluster patio and two consecutive round platforms—Structures 15 and 14 (Powis 1993, 1994, 1996; Powis and Hohman 1995). Structure 15 was a simple round platform that measured 5.5 m in diameter and stood 40 cm above its associated tamped-earth patio floor. Its retaining wall was made of five courses of cut

stones and its summit was coated with stucco. At some point, the cluster patio was expanded and two single-course platforms, perhaps domestic in function, were constructed on its southwestern and northeastern sides. At some point (ca. 755-265 cal B.C.), Structure 14 was abandoned and covered by a keyhole-shaped round platform measuring 9.5 m in diameter and 55 cm in height. Its retaining wall was made of nine courses of cut stones covered with a thick layer of plaster. As mentioned above, round platforms likely functioned as a ritual space.

Activities practiced by people inhabiting the Tolok group (Powis 1992:39-40) have been inferred based on the artifacts recovered from the midden located beneath Structure 1. The people of Tolok consumed a variety of local fauna (e.g., curassow, deer, paca, rabbit, and freshwater mollusks) and animals obtained from the Caribbean (e.g., marine fish, marine turtle, and conchs). In addition to Caribbean faunal remains, the people of Tolok had access to goods procured through regional and long-distance exchange networks (e.g., granite grinding tools, slate items, jadeite goods, and obsidian prismatic blades and flakes), as well as specialized ritual items (e.g., figurine fragments).

The Zotz group also was occupied during the late Kanluk phase (Awe et al. 1992a). The earliest construction there was a simple platform made of plaster, clay, and marl. This building was replaced by a three-course basal platform supporting a round building that reached 1.2 m high and an upper diameter of 3.6 m. This round platform was made of cut stones that were mortared together and covered with stucco. The patio surface in which the basal platform was resting also was plastered. Another public building with three construction phases was identified at the Cuz Platform of the Zubin group (Iannone 1994). Structure C9-8th and C9-7th consisted of two consecutive apsidal

structures made of roughly cut stones and tamped-clay flooring. The difference between the apsidal structures was that Structure C9-7th was slightly higher than its predecessor. Structure C9-8th was three courses high while Structure C9-7th was four courses tall. In addition, Structure C9-7th had a three-step axial stair. Finally, Structure C9-6th consisted of a steep-sided pyramidal structure measuring 80 cm high and with an axial stair.

The Zopilote group contained the largest public building in the periphery, which was even larger than Structure B-4 (Cheetham 2004). At the beginning of the late facet of the Kanluk phase, Structure A-1 stood approximately 4 m high and consisted of a basal platform supporting a perishable superstructure. It was built on top of bedrock without an associated formal plaza. By the end of the Kanluk phase (ca. 400 B.C.), this building reached 5.5 m in height and was associated with the first formal plaza at Zopilote. As during the early Kanluk construction phases, the late Kanluk buildings were not associated with any domestic space. They stood alone.

9.4.4 Material Culture during the Late Facet of the Kanluk Phase: An Assessment of Power Strategies

In the site core, the northern and southwestern groups were the only locations with domestic functions. Nevertheless, they went through different processes during the late facet of the Kanluk phase. The domestic northern group continued to be occupied, but the household ceased all construction activity, at least in this location. In contrast, the southwestern household went through a major transformation in its built environment, in which not only did the complex increased in size, but the buildings that formed it changed in their formal and functional attributes. Although all dwellings (Plaza B/9th,

Plaza B/10th and Plaza B/11th–B) displayed a rectangular shape and were at least 50 cm tall, they were built using construction materials that improved in quality over time (i.e., larger and better cut stones). The domestic architectural group also incorporated different public spaces (e.g., round buildings and cobbled platform). In fact, the original residential space became public over time and, by the end of the Kanluk phase, the entire southwestern region came to be public.

The difference in behavior between the northern and southwestern groups may be seen as a continuation of the socio-political and economic processes prevailing during the first facet of the Kanluk phase. While these groups were competing over some material resources during the first facet, in the following part of the Kanluk phase, the southern group may have achieved control of the exchange networks through which valuable goods were obtained. Without unrestricted access to these networks, the northern group was not able to obtain the resources to compete with the southern group (or other groups) and continue growing. This manipulation of the exchange networks is supported by the fact that other areas of the central precinct either enjoyed limited access to these goods or completely lacked them. I believe that this control over the networks occurred at some moment during the Plaza B/10th construction phase and that it intensified throughout the next Plaza B/11th construction phase. It is during those construction phases that there is evidence of increasing construction activity and reconfiguration of the architectural group, intensive participation in regional and long-distance exchange networks, craft production, ancestor veneration, and feasting.

During these construction phases, the changes in ideology that started during the early facet continued. For instance, musical instruments and spouted vessels were

introduced in the ritual repertoire. The introduction of musical instruments may signify a transformation in the way in which the communication with the supernatural realm was achieved, as rituals could have started to include dances or other activities involving music. It could also indicate the inclusion of a more varied audience in terms of age and gender. For instance, children may have played the ocarinas during the ceremonies, thus initiating the process of socialization and acquisition of ideology. It is likely that some of these rituals, particularly those focused on venerating the ancestors, were performed on and around the round buildings Platform 1 and the latter Plaza B/11th-A. Based on the proximity to Structure B-4, which most likely functioned as a temple, rituals in this location may have been performed in commemoration of the founder-household's ancestor or some ancestors who had obtained primacy in the community.

Additionally, the large dimensions of the round platforms and the open space surrounding them could mean that a relatively large audience (e.g., neighboring households or people living in the periphery) witnessed and participated in such ritual displays hosted by the southwestern household. The involvement of other households in the ceremonies hosted by the southwestern household is highly significant. On the one hand, the inclusion could have helped create a sense of solidarity among all participants. The domestic and public constructions placed in SW Plaza B must have played an important role in Middle Preclassic Cahal Pech as they may have been essential to build a sense of community. On the other hand, differential participation in the rituals (i.e., people performing rituals and audience) may have contributed to social distinctions among households and individuals.

The increasing performance of ancestor worship in the domestic architectural group did not mean these rituals stopped being conducted in Structure B-4. In fact they continued to be conducted as intensively as in the southwestern group. Again, this would have been a strategy to prevent the dissociation of the founder's ancestor from the sacred locus of Structure B-4. This building reached monumental dimensions and an architectural plan that promoted separation between the ritual performers and the rest of the community. Few people could have had access to the superstructure. Therefore, the control over ritual space, hosting, and manipulation of ancestor veneration ceremonies were definitely part of the political strategies that the southwestern group used to manipulate existing social norms and create and reinforce new sociopolitical orders and ideologies. Through these rituals of ancestor worship, therefore, the southwestern household obtained, maintained, and strengthened its power over other households or groups, starting or reinforcing the ideological program in which the ancestors of the founder's household became the ancestors of the entire community.

Other groups across the site core also incorporated round platforms during the late facet of the Kanluk phase. Nevertheless, round platforms located in the northern group and Plaza C exhibited smaller dimensions and simpler layouts as they were not key-hole shaped. This may indicate that, while ancestor veneration rituals were performed on these platforms, these ceremonies included a smaller audience compared to the spectators participating in the rituals hosted by the southwestern group. Rituals performed by the northern group and Plaza C were probably more private in nature, including only members of their respective households.

On the other hand, the specific form and functions of Structure F-2 have not been established, making difficult it to elucidate its meaning in the community. This building shared certain formal attributes with public buildings in Plaza B, particularly those located in the southern group (e.g., Structure B-4/8th, Structure B-4/9th and Plaza B/11th-A). These public buildings were constructed using the highest quality or most conspicuous construction materials, including large well-cut limestone blocks, lime mortar, and stucco. This contrasts with the round platforms located in the northern group and Plaza C, which were built with roughly-cut stones and without plaster, indicating that those groups did not have access to high quality materials nor to stylized forms.

Other areas neighboring the future Classic acropolis underwent major construction activities. It is important to emphasize, however, that the earliest radiocarbon date in the periphery is 530 B.C. (2-sigma calibration; Ebert et al. 2016; Healy and Awe 1995). So far, the only residences in the periphery that have been excavated are Cas Pek, Tolok, Tzinic, and Zubin (Conlon 1992; Iannone 1994; Lee and Awe 1995; Powis 1996). These dwellings displayed simple architectural forms, as they were one-course buildings made of roughly-cut stones and tamped-marl/clay floors, similar to some early Kanluk residences in the architectural core. Most of the buildings were not finished with plaster, except the Tzinic and Zubin dwellings. The use of plaster in those buildings may indicate a better treatment of decoration. Nevertheless, there is the possibility that these buildings served functions than other domestic as typically, only public buildings were decorated with stucco. Alternatively, these buildings could have been residences dating to a later moment when plaster was also used in the houses. At the end of the facet, the dwelling at Cas Pek displayed a more elaborated form as it rested on

a basal platform, but this form was still modest compared with the groups Plaza B/10th and Plaza B/11th.

The only domestic group that could have been similar to the southwestern architectural group in Plaza B, at least in the architectural configuration, was Tolok. The one-course dwellings rested on a basal platform, a space that they shared with two consecutive round platforms presumably used for ancestor veneration. It is likely that the round platform located in the Zotz group was associated with a residence as well, although this domestic construction has not yet been discovered.

The practice of ancestor veneration in the periphery is significant as it implies that these events were not exclusive to the groups inhabiting the architectural core. Nevertheless, it is important to emphasize that, based on the limited presence of figurines compared to these in the site core, it is likely that these rituals were conducted less intensively in the periphery. In addition, the peripheral constructions may have appeared late in the second part of the Kanluk phase and were, if anything, partially contemporary to round platforms built in the architectural core. Consequently, the households inhabiting in the architectural core had first access to innovative public architectural forms, which were later copied by peripheral households, perhaps adopted as loans or when these architectural forms began to fall into disuse in the center. Either way, the peripheral round platforms were built using high-quality materials, particularly well-cut stones and plaster, suggesting that the Tolok and Zotz groups had access to both stylized forms and conspicuous consumption of construction materials. Architecture was used, therefore, to set these particular households apart from the surrounding groups.

While the round platforms at Tolok and Zotz must be considered as part of the domestic space, the public buildings at Zubin and Zopilote are a different issue. Structure C-9 of Zubin was not directly associated with a residence, although most likely there were domestic groups in its neighboring area for which Structure C-9 may have functioned as a ceremonial space. Even though it was a public structure, Structure C-9 was not comparable to Structure B-4, as it started as modest constructions similar to the Cunil and early Kanluk buildings of the architectural core, obtaining a steep-sided pyramidal form until the end of the Kanluk phase or the Kanluk-Barton Creek transition. Despite its shape, its dimensions were not equivalent to Structure B-4. In fact, Zopilote reached dimensions that were even larger than Structure B-4. What is interesting is the fact that Structure A-1 continued to be isolated from any domestic architecture. In the same manner as in the early facet, Structure A-1 may have served as extension of the architectural core into the periphery¹⁶ providing a place to perform ritual ceremonies through which the southern household of Plaza B attracted people living in the surrounding areas or beyond and introduced them to their ideology. In this vein, Structure A-1 could have functioned in a similar way to the E-Group of Ceibal throughout the Kanluk phase (Inomata et al. 2015).

Besides the consumption of innovative architectural forms and conspicuous construction materials, the peripheral groups also acquired valuable goods, either obtained through exchange networks or locally manufactured. There are three possible explanations. First, it is possible that the southern group was not successful in restricting

¹⁶ Since the Late Preclassic, the Zopilote group was linked with the architectural core by a causeway. Based on this, it has been suggested that this group was as an extension of the architectural core into the peripheral residential zone (Cheetham 2004).

access to all regional and long-distance interactions. In consequence, some peripheral households could have been able to participate in either the same networks in which the southern household participated or others. Second, even though the objects acquired by the peripheral households may have been considered exotic or prestigious items, they were not valuable resources and, therefore, their use did not need to be completely restricted. Third, even though the peripheral groups had access to non-local goods and local prestige goods, it is possible that the amount and variety of goods they acquired was not the same as the southern household of Plaza B, suggesting that non-local interactions and local craft production were indeed regulated, at least partially. The third hypothesis seems to be most convincing based on the material evidence.

Supporting this hypothesis, data indicate that during the late facet, jadeite and greenstone items were concentrated in the southern group of Plaza B. Tolok also yielded greenstone items, but these were rare and were found mainly in caches. Basalt grinding tools were restricted to the southwestern household of Plaza B. This contrasts with the distribution of obsidian blades and granite grinding tools, which were found both in the core and in the periphery. In fact, the Tolok household obtained significant quantities of this material and the Cas Pek group yielded one of the two polyhedral cores found at late-Kanluk Cahal Pech.

On the other hand, there is evidence to suggest that marine shells were not equally distributed across the different groups. The southwestern group had access to complete conchs, while Tolok and Cas Pek obtained only body parts and columellas (Stanchly 1995; see Chapter 6). The manufacture of shell ornaments also was spatially restricted to the southwestern and northern groups of Plaza B during most of the late facet of the

Kanluk phase. It was not until the Kanluk-Barton Creek transition, when the southwestern group of Plaza B switched from a private to a public space, that shell ornament production started at Cas Pek. This may imply that the means to obtain marine shells and knowledge of shell-ornament manufacture was controlled by the northern and southern households of Plaza B. Nonetheless, at some moment, that knowledge became exclusive to the southern household of Plaza B, particularly the Plaza B/11th group. In fact, this household enjoyed a preferential access to shell ornaments during the late facet of the Kanluk phase—eighty two ornaments have been discovered in SW Plaza B compared to seventy three shell ornaments found across the rest of Plaza B. Textile production could have played a similar role as shell ornament manufacture, in the sense that it was an activity restricted to privileged households. In the northern lowlands, for instance, spindle whorls were only recovered in elite residences (Hernández Álvarez and Peniche May 2012).

Additionally, there is evidence suggesting a differential consumption of fauna. Although the peripheral groups also consumed local vertebrate fauna, the southern group of Plaza B consumed a greater amount and variety of this fauna, mainly large mammals. Coupled with this, there was certain differential consumption regarding freshwater mollusks. The southwestern group and peripheral groups consumed the four species of riverine mollusks. Nevertheless, the preferred mollusks in the periphery were the *N. otomanni*, while the *P. glaphyrus* were mainly consumed at the core.

Finally, there was a difference in the amount of specialized ritual items found in the different groups. The greatest quantity of figurines was concentrated in the southern architectural group of Plaza, where the oldest constructions of the entire site were placed

(Awe 1992; Cheetham 1995, 1996; Peniche May 2013, 2014b). Nevertheless, this household did not enjoy exclusive access to these specialized goods. The Cas Pek, Tolok and Zubin peripheral groups also yielded figurine fragments, although their number was low. Of course, this difference in numbers meant a manipulation of symbolic resources, as discussed above. Although ancestor worship was not exclusive to the southern household of Plaza B during the late facet of the Kanluk phase, the difference in numbers implies that ancestor veneration ceremonies were performed sporadically in the peripheral locations. In contrast, these ceremonies were practiced more frequently by the southern group of Plaza B, perhaps because their ancestors were the most prominent in the community.

In summary, the elites inhabiting the southern household were successful in restricting access to material and symbolic valuable resources during the late facet of the Kanluk phase. Once again, they employed a network system to enhance and legitimize the unequal power relations created during the early facet. Peripheral groups also had access to some material sources of power, but this access was limited in comparison to the southern group of Plaza B.

9.5 SUMMARY

In this chapter, I aimed to elucidate the range of power strategies and sources of power that leaders and emergent elites at Cahal Pech employed to wield power over other members of the community during the Cunil and Kanluk phases. My main hypothesis states that social inequality was institutionalized in Cahal Pech during the early facet of the Kanluk phase (900-600 B.C.) when the political actors living in the southern area of

Plaza B manipulated and integrated both material and symbolic valuable resources to wield power over others using a network system to organize their political economy. The unequal power relationships were enhanced during the late facet (600-350 B.C.). In order to achieve my main objective and corroborate or refute my hypothesis, I analyzed and compared the public and private architectural manifestations in the site core and the periphery. By analyzing the architecture based on its prominence, architectural form, function and associated activities, I obtained a more comprehensive understanding of the political dynamics prevailing during this early period of time. This understanding, however, is limited by the available data.

Based on the limited data dating to the Cunil phase (1100/1000-900 B.C.), I agree with previous interpretations stating that the Cunil community was organized following egalitarian political principles (Awe 1992; Cheetham 1996, 1998). It was during the second part of this early phase that the first signs of social inequality arose. The earliest residences inhabited by the founder's household, Structure B-4/3rd and Structure B-4/4th, displayed the conspicuous consumption of construction materials and architectural forms, which was likely used to set this social group apart from the other households. In addition, the domestic group spent a lot of energy modifying the original surface of the hill. Political actors living in these dwellings also participated in regional and long-distance exchange networks through which they obtained a variety of goods and knowledge. Even though access to these networks was not restricted, as another group inhabiting the northern of Plaza B was definitely participating in those non-local interactions, the household living in the locus of Structure B-4 was able to restrict the circulation of the pan-Mesoamerican belief system and motifs through the network (Awe

1992; Cheetham 1998; Garber and Awe 2008). Therefore, with the manipulation of the architectural forms, pan-Mesoamerican belief system, and feasts in which vessels with pan-Mesoamerican motifs were displayed, Structure B-4 household could start wielding power over other members of the community. Nevertheless, the sources of power that were manipulated were limited to the economic or material realm with almost no use of ideological sources of power, except for the occasional rituals dedicated to their ancestors. Consequently, the Structure B-4 political actors can be considered as leaders. They wielded power over others but they did not hold authority, in the sense that they were not able to control different aspects of the social, economic and political arenas (Aldenderfer 1993; Clark and Blake 1994; Feinman 1995; Hayden and Gargett 1990; Payne 2002; Sahlins 1963).

The political system seems to have changed during the early facet of the Kanluk phase. First of all, Structure B-4 stopped functioning as a residence and became a public space. It is likely that the household moved their residence to the southwestern architectural group because this was the closest group. This southern household continued to participate in non-local networks through which they obtained a variety of goods. The northern household also took part in those networks. In fact, it seems that this household not only increased their participation but surpassed the southern household (Horn 2015). Based on this evidence alone, it seems that the northern political actors were successful in competing with the southern group to gain greater participation in the non-local interaction networks, becoming the new leaders (see Horn 2015). Nonetheless, the architecture gives us another perspective. The southern household enhanced their control over material sources of power, particularly innovative public and domestic

architecture (e.g., the public sacred space and distinctive residences with rectangular layouts and high retaining walls).

Coupled with this, the southern political actors made incursions into the manipulation of ideological sources of power, particularly the veneration of ancestors, starting the process in which their own ancestors became the community's ancestors. On the other hand, this process did not occur without resistance: the northern group also performed rituals to worship their own ancestors. Nevertheless, the southern household would have used patrimonial rhetoric connecting their ancestors with the founders of the community by practicing the rituals in the sacred space of Structure B-4. Through the manipulation of rituals, specialized ritual items, and ritual space, the southern political actors could insert their political agenda into the belief system (Anderson 2006; LeCount 2003; Payne 2002; Rick 2004; Vaughn 2004). The manipulation of ideological sources of power was also evident with the construction of a public sacred space in the locus of Structure A-1, in the peripheral group of Zopilote. With the construction of a new sacred space in the periphery, the emergent elites likely expected to attract the neighboring people in an attempt to increase the number of members supporting their political agenda.

In this way, the political actors inhabiting the southern architectural group integrated and manipulated material and ideological sources of power to pursue their political agenda. Consequently, these political actors could be categorized as the emergent elites of a chiefdom society as they started to hold authority or the right to wield power over other members of the community. The range of power strategies employed by the emergent elites signal that they organized their political economy following the principles of a network system.

This political economic system seems to have continued during the first part of the late facet of the Kanluk phase, although the northern household seems to have lost the resources necessary for continued growth. Nevertheless, there is an alternative interpretation in which the northern group moved its residence to the north, in the area that now occupies Structures B-6 and B-7. So far, there is no evidence to support this alternative interpretation as these structures have not been fully explored.

The change in political dynamics was more apparent in the second part of the facet, roughly coinciding with the construction of Structure Plaza B/10th. During this time, the emergent elites inhabiting the southern group continued enhancing their use of and control over economic and ideological sources of power and reinforcing the unequal power relationships created during the late Cunil and early Kanluk phases. They also extended their power over peripheral households who started settling the surroundings. Once again, the range of power strategies employed by the Cahal Pech elites during the late facet of the Kanluk phase indicates that they wielded power by employing a network system of political control.

The emergent elite controlled, at least partially, the participation of peripheral households in the non-local networks, completely or partially restricting the goods and knowledge that other households could obtain. Even though they had access to non-local interactions, the peripheral groups were unable to obtain goods made of jadeite and basalt, and they obtained a lesser variety and number of other goods. The use of innovative architectural forms, in both private and public constructions, was restricted as well. The peripheral groups were unable to use these forms until the end of the Kanluk phase or even during the next Barton Creek phase. The exception was the public building

located in the Zopilote group. Nevertheless, as happened during the previous facet, this sacred space and the ceremonies performed in it were likely controlled by the elites inhabiting the southern area of Plaza B in order to attract people and increase their ranks. Finally, although rituals of ancestor worship were not restricted, the emergent elite performed them more often and in larger spaces that could include a large audience that most likely include neighboring households. In this vein, rituals were also used as sources of power by the emergent elite to persuade people to attribute to them the right to impose their will and make compliance habitual.

CONCLUSIONS

Competition among political actors and the strategies that these actors implemented in their struggle for power were the dynamic forces that generated social change. These strategies of social control were based on differential access to valuable material and symbolic resources. Nevertheless, access by itself was not enough for the institutionalization of social inequality and unequal power relationships. To achieve this, leaders restricted the long-term use of valuable resources and preempted others from building power bases. The leaders also integrated a variety of economic and ideological sources of power in order to maintain and legitimize their power over others. Moreover, leaders manipulated these asymmetrical power relations to further their own agendas.

My research aims to assess the diverse power strategies used by the leaders and elites of Cahal Pech during the Cunil and Kanluk phases that led to the emergence and institutionalization of social inequality. My main hypothesis states that social inequality was institutionalized in Cahal Pech during the early facet of the Kanluk phase (900-600 B.C.) when the political actors living in the southern area of Plaza B manipulated and integrated both material and symbolic valuable resources to wield power over others using a network system to organize their political economy. My comparative analysis of architecture and artifacts of Cahal Pech corroborates my hypothesis.

As I have demonstrated, the analysis and comparison of architecture is a valuable tool for assessing power relations in an ancient community and how they changed through time. The attributes of centrality, form, and function were the most suitable for this purpose. In contrast, a better understanding of other areas of Cahal Pech during the

Middle Preclassic is needed in order to understand the spatial configuration of the earliest village and assess the attributes of visibility and accessibility of buildings. The analysis of artifacts also showed to be productive as they provide insights about the activities performed in and around the different spaces and, therefore, the function of the buildings. The analysis also helped identify differential access to certain goods by the political actors that inhabited Cahal Pech during the Middle Preclassic.

At some point during the Cunil phase, the residents of Structure B-4 developed unequal power relationships through the manipulation of non-local valuable resources, interregional interactions, and communal activities. They succeeded in limiting access to specific non-local interactions through which the pan-Mesoamerican belief system flowed. It was through the inalienable ownership of the pan-Mesoamerican belief system that social differentiation appeared. Being non-local, these resources were outside of the social-leveling mechanisms that inhibit competition and the acquisition of power over.

Power over also was obtained by hosting feasts in which pan-Mesoamerican motifs were displayed and, perhaps, the belief system was enacted. Through the display of inalienable vessels with pan-Mesoamerican motifs in communal feasts, the hosts connected themselves to a political and religious authority in a foreign realm and gave special character to other transactions conducted during these events. Because of this, hospitality could never be reciprocated. As a result, participants remained in debt, which could be manipulated by the hosts to advance their agenda.

The inhabitants of Structure B-4 also performed ancestor-worship rituals. Based on the distribution of known figurines dating to the Cunil phase, I established that these rituals were apparently restricted to this household. This may imply that, during Cunil

times, the Structure B-4 household was the only group that performed ancestor veneration rituals in the community. The deceased members of the southeastern group were converted into ancestors because, as founders of Cahal Pech, they provided the basis to claim rights over valuable resources. Thus, the political actors of the southeastern group created unequal power relationships through a patrimonial rhetoric.

The political actors of Structure B-4 manipulated the attributes of the built environment to obtain and materialize their power over others. The household inhabiting the southeastern group mobilized a significant amount of labor to raise the original surface of the hill where they built their residences. During the second part of the Cunil phase, these residences displayed innovative layouts (rectangular plans and basal platforms to support the dwellings) and were built with conspicuous construction materials (plaster) that were not accessible to other households. In addition, the meaning of the architecture was manipulated. Through the practice of communal feasts in which the pan-Mesoamerican belief system was enacted and pan-Mesoamerican motifs were displayed, the locus of Structure B-4 acquired certain sacredness.

The use of these power strategies set the inhabitants of Structure B-4 apart from other households. Thus, I determine that the Structure B-4 political actors employed a network system to obtain power over. Nevertheless, the similarity among the residences, comparable access to non-local interactions and lack of control of symbolic sources of power suggest that the leadership of the Structure B-4 political actors was not permanent. The political actors of the southeastern group were leaders that wielded power over others without holding authority.

My research reveals that permanent and inheritable leadership developed during the early facet of the Kanluk phase when leaders integrated material and symbolic sources of power. The political actors of the southeastern group continued controlling and restricting access to several formal attributes of buildings, such as shape and construction materials. Large rectangular buildings on basal platforms that were decorated with plaster were used exclusively by this group. These actors also manipulated the function and meaning of their location by transforming their old residence in the first public space where communal rituals were performed to integrate the community. Through this shift, the political actors sanctioned the sacredness of the location by converting it into a valuable place. They also manipulated ancestor worshiping rituals by performing them in this newly created sacred place. I interpret this as an attempt to prevent the dissociation of their ancestors from their former place of residence and ensure the elites' right to regulate the use of this location. As the new place had a strong connection with the southeastern actors' past, the rituals performed in this location also legitimized and naturalized the power over others of these emergent elites. Thus, sacred and public architecture became the new inalienable possession of these political actors and, most likely, it changed the power dynamics in the community.

To where did elites controlling the southeastern group move their residence? Cheetham (1996) argues that it was Plaza A. Nevertheless, I believe that the founder household did not move far away from the sacred place. Had they done so, they would have opened the possibility that other political actors could create a power base by placing their residence close to the sacred space. Thus, I think that the building in SW Plaza B became the residence of the founder's household. From there, they could

proclaim rights and control the place where their ancestors used to live. The use of certain architectural attributes to differentiate themselves from other households was also evident in the southwestern constructions. These structures were more elaborate than their northern counterparts in terms of their plan and labor investment. The southern political actors constructed rectangular buildings emulating the form of the sacred space, basal platforms to support their residences, and a large round platform to perform rituals. The complex constructions of the southern residential group suggest that social differentiation became sharper during Kanluk times. The incorporation of the round building in a domestic space signaled a change in the ideological realm and offered new means to manipulate the belief system and the behaviors of the people who participated directly or indirectly in those rituals.

The search for power was not uncontested. The northern group also had access to meaningful ritual knowledge, performed ancestor veneration rituals, and displayed innovative architectural forms. Nonetheless, this occurred only until the end of the early facet of the Kanluk phase, and these buildings required less energy to build. Moreover, the inhabitants of the northern group did not access conspicuous construction materials (stucco to decorate surfaces) or innovative layouts (rectangular buildings). Prestige goods also were subject to competition. Although the southern political actors enjoyed preferential access to vertebrate faunal remains, freshwater shells, and non-local goods, this household was not able to restrict the access to non-local exchange networks.

During the early facet of the Kanluk phase, there were already different power dynamics at play. The power strategies employed by the southern political actors indicate that they struggled to promote themselves, express asymmetrical power relationships, and

legitimize social inequality by manipulating certain aspects of architecture, space, and ritual activities. By integrating materials and economic sources of power, the southeastern political actors became emergent elite with the legitimate right to wield power over others. Again, the power strategies employed by the emergent elites to enhance and legitimize their power fit with the archaeological correlates of a network system of political control.

The presence of an isolated public building in the peripheral group of Zopilote is intriguing. I believe that the southern political actors of the site core controlled this space, although construction at Zopilote was likely carried out by the entire community. The ritual events performed in this public space may have been different in nature and more focused on the community as a whole. Based on this, I propose that corporate strategies were employed to attract people living in the periphery.

During the late facet of the Kanluk phase, the emergent elites enhanced their power-over-others and overpowered the northern and peripheral groups to consolidate their power base. Based on the evidence, the power strategies that the emergent elite employed can be considered part of a network system. Architecture was once more used to express and shape these unequal power relationships. The northern group began to decline in importance, which is manifested by a halt in construction activity. In part, this interruption in construction was likely a consequence of the increasing control and manipulation of ritual performance, craft production, and non-local exchange networks by the southern household. The control over exchange networks, however, may not have been complete. The northern group may have had access to certain non-local goods during the late facet of the Kanluk phase. In order to assess this possibility, however, it is

necessary to determine what goods were consumed by the northern group during the second part of the Kanluk phase.

The regulation of exchange networks also had its effects in the periphery. Although the peripheral groups had access to non-local and local valuable goods, they did not obtain the same amount and variety as the southern household. The production of shell-ornaments also was manipulated by the emergent elite, who controlled the procurement of conchs and the knowledge needed to manufacture shell adornments. The same can be said about textile production.

Through the manipulation of architecture, the emergent elite expressed and shaped unequal power relationships within the community. Structure B-4 became the only monumental public building in the site core and periphery, except for Structure A-1 of Zopilote. The southwestern architectural group also increased in size, incorporating public spaces in its domestic space. These southern residences stood out in comparison with other dwellings, because elite residences were larger and constructed of higher-quality stones. The southern group also built the largest round platform using conspicuous construction materials (large well-cut limestone blocks, lime mortar, and stucco) that were likely their inalienable possessions. The fact that other groups in the periphery (the round platforms in Tolok and Zotzs) and the site core (Structure F-2) used these high-quality construction materials means that the emergent elite permitted the use of such inalienable possessions creating a relationship of asymmetrical reciprocity.

In addition, through the manipulation of activities performed in the public spaces, the emergent elite living in the southern group created and reinforced the new ideology and sociopolitical order. The emergent elite performed rituals on and around the round

platform dedicated to the worship of their own ancestors who were becoming the community's ancestors. These rituals were witnessed by an audience that likely included neighboring households, together with their children. By worshiping the founder's ancestors as the apical ancestors of the community, the emergent elite obtained the means to create a sense of solidarity and, at the same time, naturalize the unequal power relationships. By incorporating children in the rituals, they initiated the process of socialization and early acquisition of their ideological agenda. Ancestor veneration rituals were in fact manipulated by the emergent elite. Even though the peripheral groups and the northern group practiced this activity, these ceremonies were practiced intermittently.

Structure B-4 likely played a similar role in reinforcing social differentiation, because few people had access to the rituals performed on the superstructure. Other public structures in the periphery (i.e., Structure C-9 in Zubin and Structure A-1 in Zopilote) were not associated with domestic spaces. This suggests that they served different purposes. They were likely extensions of the architectural core into the periphery, providing places to perform ritual ceremonies through which the southern household attracted people living in the surrounding areas or beyond and introduced them to their ideology.

It is difficult to compare the political dynamics of Cahal Pech with other sites in the Maya lowlands because so few have data of comparable detail and richness. Nevertheless, I believe that important changes occurred in the southern lowlands around 850-800 B.C. At this time, the rectangular public buildings appeared at Cuello, the first pyramidal building and the first domestic structures were constructed at Ceibal, and true monumental architectural appeared in Nakbé. These events coincide with the appearance

of public architecture in Cahal Pech and Blackman Eddy and the institutionalization of social inequality.

At most later sites (e.g., Altar de Sacrificios), the first permanent architecture consisted of residences with no evidence of public structures until the second part of the Middle Preclassic. In others sites, (e.g., Cival), public spaces in the form of E-Groups had been present since the beginning of their occupation, with no evidence of residential constructions. During the second part of the Middle Preclassic, more areas were settled. Elites across the lowlands reinforced the institutionalization of social inequality by building architecture that enhanced unequal power relationships and fostered permanent and inheritable leadership.

The comparison of sites suggests that the process of occupation and emergence of social differentiation and, perhaps, the institutionalization of social inequality, were different across the lowlands. Political actors from Cival and Ceibal, for instance, more likely emphasized the manipulation of symbolic resources to obtain power over. Despite the contributions of this research to our understanding of the power strategies employed by the elites in Cahal Pech, many questions remain regarding the political dynamics prevailing in this community. Further research research could greatly enhance, for example, our understanding of how the other members of the community contested or accepted the power over of the leaders and elites.

APPENDIX 1: DESCRIPTION OF LOTS

EXCAVATION UNIT CHP-PB-PU-13

This unit was set up immediately west of Structure B-1, specifically at the edge of its western staircase. The excavation unit measured 3 m x 3 m and it followed the orientation of Structure B-1. The purpose of the excavation unit was threefold. I aimed to (1) explore a feature exposed during the liberation works, (2) explore the construction sequence of this part of Plaza B and (3) recover materials that permit to date each construction sequence. The test pit was approximately 140.6 cm deep.

Level 1, Lot PL-B-1: I did not supervise the excavation of the first level of the test pit, which was excavated as part of the works of liberation and consolidation of Structure B-1. I was able to observe, however, that this level corresponded to humic soil and collapsed fill mixed with small stones. The consistence of the matrices was loose. During the excavation of this level, Feature 1 was recorded. Feature 1 consisted of coarse stones of diverse dimensions placed in a random manner on the stucco floor of Plaza B. On top of Feature 1 and at its southeastern corner, I found human remains (long bones, pelvis, ribs and, at least, one phalange) and a mandible of an opossum. Lot PL-B-1 referred to the excavation of these bones. I also recovered pottery, freshwater shell, and obsidian. I suggest that these bones were a secondary deposit dated to the Terminal Classic period. South of Feature 1, I recorded an area that exhibits fire exposition—the soil was dark gray.

Level 2, Lot PL-B-2: This lot corresponded to the exploration of Feature 1. The beginning elevation was 45.2 cm below Datum 1. After removing the stones that

composed Feature 1, I noticed that Feature 1 was not a burial because the ceramic fragments and human bones were randomly placed. Rather I exposed the half of a circular altar. Because the absence of a burial, I decided to extend the excavation to cover the entire excavation unit and level the surface. The matrix of this lot was dark brown soil with small stones. During the excavations, I exposed a back-filled area (approximately 1 m x 1 m) located at the northeastern section of the excavation unit. This might be a previous excavation conducted by David Cheetham (1996) during 1990s. Feature 1 was located immediately west of this backfilled area. I ended this lot when I exposed Floor 1, perhaps the last stucco floor of Plaza B. This stucco floor was badly preserved. It was not present in the entire excavation unit. The ending elevation was 65.8 cm below Datum 1. Cultural remains recovered during the excavation of this lot included pottery, chert, human remains, freshwater shell and granite.

Level 3, Lot PL-B-5: This lot corresponded to the exploration of the level beneath Floor 1, a badly preserved stucco floor. The matrix was not homogeneous. In the section where Floor 1 was better preserved, the matrix consisted of ballast and was whitish brown in color. Where Floor 1 was not present, the matrix consisted of humic, dark brown soil mixed with the ballast of Floor 1. At the northeastern section of the unit, I found the back-filled area. The consistency of the matrix was semi-compact. The lot ended when we reached the level of Floor 2, another poorly preserved stucco floor. The ending elevation was 76.6 cm below Datum 1. Cultural remains in this lot included pottery, chert, daub, human remains and quartz.

Level 4, Lot PL-B-7: This lot corresponded to the exploration of the level beneath Floor 2, a badly preserved stucco floor. The ballast of this stucco floor was present in

almost the entire excavation unit but the northeastern corner, where we recorded the excavation conducted by Ball. The matrix consisted of ballast. It was whitish brown in color and its consistency was semi-compact. The lot was closed when we exposed Floor 3, a poorly preserved stucco floor. The plaster of this floor was only observed at the southeastern section of the excavation unit. At the southwestern section, we only uncovered its ballast. The ending elevation was 88.4 cm below Datum 1. Cultural remains uncovered included pottery, chert, fauna, and freshwater shell.

Level 5, Lot PL-B-13: This lot referred to the level below Floor 3. The matrix was semi-compact and light brown in color. It consisted of plaster followed by ballast. Like in previous lots, I recorded the back-filled area at the northeastern corner. The lot ended when I exposed Floor 4—a poorly preserved stucco floor. Ending elevation was 108.2 cm below the datum. Materials recovered during the exploration of this lot included pottery, chert and charcoal.

Level 6, Lot PL-B-14: This lot corresponded to the exploration beneath Floor 4. I decided to reduce the dimensions of the excavation unit to 2 m x 3 m in order to exclude the back-filled area. The beginning elevation of the sub-unit was 104.2 cm below Datum 1. The matrix was compact and consisted of plaster and fill (light brown soil with small stones). The lot ended when I exposed Floor 5, a fairly preserved stucco floor. The ending elevation was 123 cm below Datum 1. Cultural remains found were pottery, chert and fauna remains.

Level 7, Lot PL-B-16: This lot was below Floor 5. It consisted of plaster and ballast. The soil that composed the ballast, however, was not homogeneous across the unit. In the eastern section, I uncovered *sascab*. In the western section, I recorded dark

brown/gray soils that might represent evidence of a burning activity. In this same context, I found samples of charcoal. The lot ended on Floor 6, a fairly preserved stucco floor. It was interesting to note that Floor 6 was burned in the same area where we found dark gray soil. The ending elevation was 133.6 cm below Datum 1. Cultural remains included pottery, chert, freshwater shell and charcoal.

Level 8, Lot PL-B-19: These lots referred to the level below Floor 6. The matrix of Lot PL-B-19 consisted of plaster and ballast that was brown/gray in color and compact. This matrix was present in almost the entire unit except in the north central section where I uncovered dark gray—almost black—soil. In the matrix of this section, I recovered charcoal. I ended the level when I exposed a dry fill made of big stones (40-60 cm in length). This dry fill was found at 143.6 cm below Datum 1. Materials found during the excavation of PL-B-19 included pottery, chert, freshwater shell, human remains, charcoal, and a figurine fragment.

Level 9, Lot PL-B-22: The dry core located below Floor 6 was explored as Lot PL-B-22. The matrix of this lot consisted of big stones mixed with soil. The soil was too wet to provide a correct description but was likely gray/brown in color. Again, in the north-central area of the excavation unit, the soil was dark gray—almost black—suggesting a fire exposition. I also recovered charcoal in this section of the excavation unit. The core was directly resting on another fairly preserved stucco floor, Floor 7. Floor 7 was located at 162.4 cm below Datum 1. Cultural remains found included pottery, chert, charcoal, freshwater shell, granite, and two special findings—a figurine fragment and a small ceramic ball.

Level 10, Lot PL-B-29: This lot was below Floor 7. The matrix consisted of plaster and ballast that was light brown in color and compact. This matrix rested on another moderately preserved stucco floor, Floor 8. The ending elevation was 169.8 cm below Datum 1. Material cultural found in this lot consisted of pottery, chert, freshwater shell and a figurine fragment.

Level 11, Lot PL-B-30: This lot consisted of the level below Floor 8. The matrix consisted of plaster and ballast. Beneath the ballast I exposed clay loam, which was black in color, compact and sticky. This black soil could have been the old humic soil, which is typically found on top of bedrock in this section of the Maya lowlands. The lot ended on bedrock, located at 185.8 cm below Datum 1. Cultural materials in this lot included pottery and chert.

EXCAVATION UNIT CHP-PB-PU-14

This excavation unit was located at Plaza B, immediately west of Structure B-3. The dimensions of this excavation unit were 2.5 m x 2 m. It followed the same orientation than Structure B-3. The excavation unit was 2 m deep.

Level 1, Lot B-7: This lot corresponded to (1) dark brown or humic soil and (2) collapsed fill from Structure B-3. I did not supervise the exploration of this particular level that was removed as part of the liberation works. During these excavations, workmen exposed Feature 2. Feature 2 consisted of accumulation of coarse stones of diverse dimensions. Workmen found large amounts of pottery on top of this feature. Because of this, I decided to start a new excavation unit, CHP-PB-PU-14.

Level 2, Lot PL-B-2: This lot corresponded to the exploration of Feature 2. The beginning elevation was 69.4 cm below Datum 2. The matrix consisted of fill (loose gray soil mixed with medium size stones) and humic soil. I ended this level when we recorded a well preserved stucco floor. This floor was below the level of Floor 1 of EU CHP-PB-PU-13. Therefore, I called it Floor 2. At the eastern edge of the excavation unit, I exposed an alignment of well-cut stones that I called Feature 3. I only recorded a course of stones indicating that this feature was dismantled. I noticed that Floor 2 and Feature 3 corresponded to the same stage of construction. Floor 2 continued and covered the western face of Feature 3. I also exposed Feature 4. This feature was likely a wall dismantled in recent times. The stucco floor surrounding this feature was also disturbed through a cut. I also noticed the presence of back-fill in the western baulk of the excavation unit. Because of the disturbance, I was not able to identify the place of Feature 4 in the construction sequence. The ending elevation of the lot was 76.6 cm below Datum 2. Cultural remains included pottery, chert, fauna, freshwater shell, charcoal and a special finding consisting of a bifacial notched arrow point made of chert.

Level 3, Lot PL-B-4: This lot was below Floor 2, a well preserved stucco floor except for the cut described at Lot PL-B-2. The matrix of this lot consisted of stucco and ballast (small stones mixed with whitish brown soil). Nevertheless, the matrix was not homogeneous. Associated with the cut discovered in the previous level, I found dark brown soil. I ended the lot when I exposed Floor 3. It was interesting to note that Feature 3 was resting directly on Floor 3, indicating that Floor 3 consisted of a previous stage of construction. Feature 4 continued into this lot. The ending elevation was 103.6 cm below Datum 2. Cultural remains uncovered during the exploration of this lot included pottery,

chert, freshwater shell, charcoal and an unknown material.

Level 4, Lot PL-B-6: This lot corresponded to the level below Floor 3. The matrix consisted of stucco followed by ballast. The cut reported in previous levels was also present in this lot. Inside the cut, we exposed dark brown soil. Likewise, Feature 4 was also present. The level ended when Floor 4, a stucco floor, was uncovered. The ending elevation was 114.8 cm below Datum 2. Cultural remains uncovered included pottery, chert and freshwater shell.

Level 5, Lot PL-B-8: This lot was beneath Floor 4. The matrix of this context consisted of stucco followed by ballast. I ended the lot ended when I uncovered Floor 5, a well preserved stucco floor. This floor also presented the cut reported in Floors 2, 3 and 4. Feature 4 continued into this level. The ending elevation of this level was 121.4 cm below Datum 2. Materials found in this lot included pottery, chert and freshwater shell.

Level 6, Lot PL-B-9: This lot referred to the level below Floor 5. The matrix consisted of stucco, followed by ballast. Floor 6 marked the end of the. This stucco floor had the same cut. In the cut area, I recorded black brown soil. The ending elevation was 130.6 cm below Datum 2. Cultural remains included pottery, chert and freshwater shell.

Level 7, Lot PL-B-11: This lot was beneath Floor 6. Again, the matrix consisted of stucco followed by ballast. The cut reported in previous floors of the excavation unit was also present in Floor 7, the stucco floor that marked the limit of the level. The ending elevation was 140.2 cm below Datum 2. Cultural remains included pottery, chert and freshwater shell.

Level 8, Lot PL-B-12: This lot was below Floor 7. The matrix consisted of stucco and ballast, as well as black brown soil in the cut area. The level ended when I reached

Floor 8, another stucco floor that had the same cut as previous floors. Feature 4 continued into this level. This feature could have been dismantled in pre-Hispanic times but this hypothesis was not corroborated because of the dimensions of the unit. The ending elevation was 145.8 cm below Datum 2. Cultural remains in this lot included pottery, chert, freshwater shell, and a special finding consisting of an animal head made of pottery.

Level 9, Lot PL-B-13: This lot corresponded to the level below Floor 8, stucco floor. The matrix consisted of stucco and ballast. It was light brown in color and compact. I ended the lot ended when I exposed Floor 9, which was also cut. During the excavation of this level, I discovered Feature 5, a possible wall resting directly on Floor 9. Feature 5 was located immediately west of Feature 4. It consisted of a double wall made of a single course of stones. This wall was likely dismantled during subsequent construction stages. Based on the present data, it is difficult to make inferences about this feature. I also discovered another wall located east of Feature 4. This wall, called Feature 8, consisted of a single row of limestone stones. The level ended when I uncovered Floor 9. The ending elevation was 160.8 cm below Datum 2. Cultural remains recovered during the excavation included pottery, chert, freshwater shell, granite, and a special finding consisting of an artifact made of pottery.

Level 10, Lot PL-B-15: This lot corresponded to the level below Floor 9. At this point, I decided to reduce the dimensions of the excavation unit to 2 m x 1.90 m, having special care of including Feature 5. The matrix consisted of plaster and ballast, which was gray in color and semi-compact. I ended the lot when Floor 10 was reached. This stucco floor was moderately well preserved. This plaster floor did not present the cut recorded in previous stucco floors. I hypothesized that the cut exposed in previous levels was an old

archaeological excavation that did not reach level 10. The ending elevation was 169.8 cm below Datum 2. Cultural materials found during the excavation of this level included pottery, chert, freshwater shell and two special findings consisted of ceramic figurine fragments.

Level 11, Lot PL-B-17: This lot was beneath Floor 10. Below Floor 10, the matrix was plaster and ballast. It was light brown in color and compact. Floor 11 marked the end of the lot. The ending elevation was 177.8 cm below Datum 2. Archaeological materials found in this lot included pottery, chert and freshwater shell.

Level 12, Lot PL-B-18 and Level 13, Lot PL-B-20: These lots were below Floor 11. The matrix of Lot PL-B-18 consisted of plaster and ballast, which was light brown in color and compact. I closed this lot when I exposed a core of big stones (around 40 to 50 cm in length) mixed with light brown silty loam. This core was found at 195 cm below Datum 2 and was excavated as Lot PL-B-20. The core was resting on another stucco floor—Floor 12—located 219.2 cm below Datum 2. Resting on this floor, I exposed two features, Feature 6 and Feature 7. Feature 6 was located at the southeastern corner of the excavation unit. Feature 7 was situated at the northeastern corner and included bone fragments, possibly human fragments, and ceramic fragments that suggested a special context. Feature 6 consisted of dark gray soil above the core of Floor 11. A large part of Feature 6 was beneath the 70 cm x 60 cm area that was not excavated. Both Feature 6 and Feature 7 were explored as two different contexts. Cultural remains uncovered below Floor 11 included pottery, chert, freshwater shell, a shell bead and a small ball made of chert.

Level 1-13, Lot PL-B-21: I opened this lot to register materials recovered during the cleaning process of the excavation unit. This cleaning was necessary because some materials from outside of the excavation unit came in because of the rain. Likewise, the rain caused that the eastern baulk collapsed. Therefore, I decided to clean the test pit before continuing the excavations. Cultural remains recovered during the cleaning included pottery, chert, freshwater shell, daub, and a special finding consisting of a ceramic figurine fragment.

Level 13, Lot PL-B-23: I started this lot to register the excavation of Feature 7. This feature consisted of limestone stones located at the northeastern corner of the excavation unit. Just above Feature 7, I found bone fragments and fragments of a ceramic vessel. In order to determine whether Feature 7 extended northwards the excavation unit area, I tunneled beneath Floor 11 (level 12, lot PL-B-32). I found out, however, that looters had destroyed the context. So, I decided to excavate only the section that was part of the excavation unit. The matrix of Lot PL-B-23 consisted of big stones mixed with gray-brown soil. I ended the lot when I exposed Floor 12. Cultural materials uncovered in this context included pottery, chert, freshwater shell, daub, granite, fauna and human remains.

Level 9, Lot PL-B-24: Because Feature 6 extended southwards the original 2 m x 1.90 m excavation unit, I decided to explore the area that was preserved. This area was approximately 70 cm x 60 cm, and it was located at the southern section of the excavation unit (east of Feature 4 and below Feature 8). This lot corresponded to the excavation beneath Floor 8. The matrix consisted of stucco and ballast. It was whitish brown in color. Floor 9 marked the end of the lot. Cultural materials only included

charcoal on top of Floor 9.

Level 10, Lot PL-B-25: This lot corresponded to the excavation beneath Floor 9. It was a similar context than Lot PL-B-15, but at the area immediately east of Feature 4. The matrix consisted of plaster and ballast. It was gray in color and compact. I closed the lot when I reached Floor 10, another stucco floor. I only recovered ceramic fragments.

Level 11, Lot PL-B-26: This lot represented a similar context to Lot PL-B-17, but located at the area immediately east of Feature 4. I opened it to excavate beneath Floor 10. I closed it when I exposed Floor 11. The matrix consisted of ballast. It was light brown in color and semi-compact. Cultural remains uncovered included pottery and chert.

Level 12, Lot PL-B-27: Lot PL-B-27 was similar to Lot PL-B-18, which was opened to excavate beneath Floor 11. The matrix consisted of plaster and ballast and was light brown in color. After removing the ballast of Floor 11, I observed that Feature 6 consisted of a large concentration of fragments of pottery spread over a layer of dark gray soil (burned soil). The soil was placed on top of the core of Floor 11. Feature 6 extended eastward beneath Feature 3—north-south running wall. Cultural remains found during the excavation of this lot included pottery, chert, freshwater shell, human remains and a small *banano* made of stone.

Level 12, PL-B-28: I opened this lot to explore Feature 6. I recovered good samples of charcoal, as well as pottery, chert, freshwater shell, daub, fauna remains, quartz and a special finding consisting of a drill made of chert.

Level 13, Lot PL-B-31: This lot corresponded to the exploration of the core (big stones) beneath Feature 6 and above Floor 12. The matrix consisted of big stones mixed with gray-brown soil. At the surface of this lot, I noted the presence of dark gray soil,

remains of the previous context. Like lot PL-B-28, the area of this lot continued beneath Feature 3. I explored this area as a different context of Lot PL-B-23 just in case Feature 6 continued in level 13. Nevertheless, after the exploration and based on the characteristics of the matrix and the amount of materials, I concluded that Feature 6 was only located above the core. Cultural materials included pottery, chert, granite, fauna remains, daub and freshwater shell.

Level 12, Lot PL-B-32: This lot corresponded to the exploration of a tunnel in the area immediately beneath Floor 11 and above Feature 7. I decided to tunnel this area to facilitate the exploration of Feature 7. I opened this lot before excavating Feature 7 (Lot PL-B-23). The matrix consisted of gray soil with stones. Cultural materials reported included pottery, chert, freshwater shell and daub.

Level 14, Lot PL-B-33: This lot corresponded to the level below Floor 12. The matrix of Lot PL-B-33 was black soil with small stones. After removing the dirt of this level, I uncovered a core made of large stones. These stones were found at 245.8 cm below Datum 2. In lot PL-B-33, I recovered pottery, chert, freshwater shell, daub, and a figurine fragment.

Level 15, Lot PL-B-35: The dry core was excavated as Lot PL-B-35. Among the large stones, I found black soil with small stones. I ended the lot when I reached bedrock at 269.8 cm below Datum 2. It was interesting to note the almost absence of cultural materials. I only recovered pottery, chert and freshwater shell.

EXCAVATION UNIT CHP-PB-PU-15

I placed excavation unit CHP-PB-PU-15 in Plaza B, adjacent to the northeastern

corner of Structure B-5. I opened this unit with the goal of exploring the Preclassic occupation of this area of Plaza B. The unit measured 3 m x 3 m, was 3.43 m deep and followed the orientation of the Late Preclassic phase of Structure B-4.

Level 1, Lot PL-B-34: The beginning elevation of this lot was 100 cm below Datum 5. This lot corresponded to the removal of the organic dark brown soil deposited on top of Plaza B floor. At the southern edge of the excavation unit, I recorded the northern wall of Structure B-5 that I called Feature 9. I closed the lot when we exposed light brown soil, which was thought to be the ballast of Floor 1. The ending elevation was 159.8 cm below Datum 5. Cultural materials recovered during the exploration of this lot included pottery, chert, fauna remains, obsidian, charcoal, quartz and a special finding consisting of a notched arrow point.

Level 2, Lot PL-B-36: When I started this lot, I thought I was excavating Floor 1 because of the compact light brown soil on top of the level. Nevertheless, as the excavation progressed, I noticed that the matrix was heterogeneous, consisting of a mixture of humic soil and collapsed fill. At the southwestern section of the unit and below the light brown soil, I observed gray collapsed fill from Structure B-5. I ended the lot when this gray collapsed fill was exposed across the entire excavation unit. The ending elevation was 171.4 cm below Datum 5. Interestingly, I uncovered another alignment of stones running north-south that I interpreted as an outset of Structure B-5. The wall was made of semi-worked limestone blocks of diverse dimensions. Cultural materials found in this lot included pottery and chert.

Level 3, Lot PL-B-37: This lot corresponded to the exploration of collapsed fill from Structure B-5. The matrix consisted of light gray soil mixed with small and medium

stones. This fill was on top of Floor 1. This plaster floor was poorly preserved. It was only present at the southern section of the excavation unit. In the northern section of the unit, I exposed Floor 2. I decided to end this lot when both floors appeared in the entire excavation unit. The ending elevation of the lot was 179.4 cm below Datum 5. This elevation was taking on top of Floor 1. Cultural remains found during the exploration of this lot included pottery and chert.

Level 4, Lot PL-B-38: This lot was below Floor 1. The matrix consisted of plaster and ballast. It was compact and light gray in color. I closed the lot when Floor 2, a fairly preserved stucco floor, was totally exposed. I noticed that the foundation of the eastern wall of Feature 9 was resting on Floor 2, rising 30 cm above this surface. Floor 1 and the eastern wall were likely built during the same construction phase. The northern wall continued going down, indicating that it was an earlier construction. Because of this, I renamed the walls. The southern wall kept the label of Feature 9, while the eastern wall was called Feature 10. The ending elevation was 186 cm below Datum 5. I only recovered pottery fragments.

Level 5, Lot PL-B-40: This lot was beneath Floor 2. The matrix was plaster and ballast. It was light gray in color and compact. I closed the lot when we uncovered Floor 3, a well preserved stucco floor. Feature 9 continued in this level. The ending elevation of the lot was 199.2 cm below Datum 5. Cultural remains found included pottery, chert and jadeite.

Level 6, Lot PL-B-41: This lot was beneath Floor 3. The matrix consisted of plaster and ballast. It was light gray in color and compact. I observed that Feature 9 continued in this level. The lot ended when I exposed Floor 4. This plaster floor was well

preserved, except at the center of the excavation unit where the ballast was visible. Floor 4 was only 3.4 cm below Floor 3, meaning that Floor 3 was reparation or resurface of Floor 4. The ending elevation of this level was 202.6 cm below Datum 5. Cultural remains found below Floor 3 were pottery and chert.

Level 7, Lot PL-B-42: This lot corresponded to the level below Floor 4. The matrix consisted of plaster and ballast. I observed that Feature 9 was resting on Floor 4, suggesting that Feature 9 and Floor 3 corresponded to the same stage of construction. Floor 5 marked the end of the lot. Floor 5 was a well preserved floor, broken at the center of the excavation unit. The ending elevation of the lot was 213.8 cm below Datum 5. I recovered pottery and chert.

Level 8, Lot PL-B-43: This lot was beneath Floor 5. The matrix consisted of plaster and ballast. It was whitish brown in color and compact. The lot ended when Floor 6 was uncovered at 220.8 cm below Datum 5. I only recovered ceramic fragments.

Level 9, Lot PL-B-44: This lot was below the plaster surface, Floor 6. The matrix consisted of plaster and ballast. It was light brown and compact. The lot ended when I uncovered Floor 7, a fairly preserved stucco floor located just 3 cm beneath Floor 6, indicating that Floor 6 was a reparation or resurface of Floor 7. The ending elevation was 223.8 cm below Datum 5. Cultural remains recovered during the exploration of this lot included pottery and chert.

Level 10, Lot PL-B-45: This lot was beneath Floor 7. The matrix consisted of plaster and ballast. I closed the lot when Floor 8 was exposed, at 227.8 cm below Datum 5. Therefore, I interpreted Floor 8 as a replastering event of Floor 7. Cultural remains recovered included pottery and chert.

Level 11, Lot PL-B-46: This lot corresponded to the excavation beneath Floor 8. The matrix consisted of plaster and ballast. I closed the lot when I exposed Floor 9, a fairly preserved stucco floor. The ending elevation was 237.8 cm below Datum 5. Cultural materials included pottery, chert and freshwater shell.

Level 12, Lot PL-B-47: This lot represented the level below Floor 9. The matrix of this lot was similar to previous levels, consisting of plaster and ballast. I ended the lot when I exposed Floor 10 at 243.4 cm below Datum 5. Floor 9 was likely a resurface of Floor 8. Cultural remains included pottery and chert.

Level 13, Lot PL-B-48: This lot was below Floor 10. Few centimeters beneath Floor 10, I discovered the eastern limit of floor made of small slabs or cobbles that were really tight together. I called this floor, Feature 11. North and east of the cobbled surface, I uncovered a stucco floor that was called Floor 11. This stucco floor was located 10 cm below the surface of Feature 11. These two features marked the end of this lot. The ending elevation was 249 cm below Datum 5. Cultural remains included pottery and chert. Because we had two different features—a cobbled surface and a stucco floor—I decided to explore each feature as a different context. Therefore, I opened two lots for the next level, Lots PL-B-49 and PL-B-50.

Level 14, Lot PL-B-49: This lot consists of the area below Floor 11. It covered a small area of the eastern section of the excavation unit. After removing the stucco, I only found fill silty loam mixed with few small stones. The matrix was gray in color and semi-compact. During the exploration of this lot, I observe that Feature 11 was resting on Floor 11. I stopped the excavation of this section due to its reduced dimensions. The ending elevations were taken at the northeastern and southeastern corners and averaged 266 cm

below Datum 5. Cultural remains included pottery, chert, freshwater shell and a figurine fragment.

Level 14, Lot PL-B-50: This lot was below the cobbled floor or Feature 11. I decided to explore an area of 3 m x 1.20 m. The beginning elevation of this area was 245 cm below Datum 5. After dismantling the cobbled surface, I recorded light brown soil with small stones. I did not find Floor 11 during the exploration of this lot. Nevertheless, I observed it in the western profile of the unit, suggesting that this plaster surface extended beneath Feature 11. After removing the fill, I uncovered Feature 12 and Floor 12. Feature 12 consisted of a circular platform made of well-cut limestone stones. I only exposed a small section of Feature 12, at the western edge of the excavation unit. This substructure was built on top of Floor 12, a well preserved stucco floor. This stucco floor marked the end of this lot. The ending elevation was 293.4 cm below Datum 5. Cultural materials recovered in this lot included pottery, chert, freshwater shell, and two figurine fragments.

Level 15, Lot PL-B-51: This lot was below Floor 12. After removing the stucco floor, I uncovered a really compact fill. This fill consisted of a layer of sandy gray soil with few stones. Approximately 50 cm below, I uncovered a lighter gray soil that was a mixture of sandy gray soil and *sascab*. Later, I exposed a layer made of *sascab* placed to level the black soil or paleosol. The black soil was compact, sticky and mixed with soft limestone and daub. Below the black soil, I found bedrock. The lot ended at 443.2 cm below Datum 5. Cultural remains included pottery, chert, human remains, freshwater shell, daub, obsidian, charcoal and an ocarina fragment.

EXCAVATION UNIT CHP-PB-PU-16

Excavation unit CHP-PB-PU-16 was located 3 m north and west of EU CHP-PB-PU-15. It measured 3m x 3m and it was opened to further explore Feature 11, the cobbled platform. In order to take the elevations we used Datum 5A. This excavation unit was 3.87 m deep.

Level 1, Lot PL-B-57 and Lot PL-B-60: This lot corresponded to the removal of the humic layer. It consisted of a dark-brown soil mixed with small stones and some medium-sized stones, as well as roots. The consistence of this matrix was compact. The beginning elevation of this lot was 149.6 cm below datum 5A. During the excavation, I exposed some large stones and some cut stones at the southeastern corner of the excavation unit. I interpreted these stones as collapse from Structure B-5. I ended the lot when Floor 3 was exposed. This plaster surface was poorly preserved. I only observed plaster at the southwestern corner of the excavation unit. The ending elevation was 182.4 cm below datum 5A. Cultural remains included pottery, chert, fresh water shell, limestone, slate, cobble, quartz, marine shell and metal.

Level 2, PL-B-61: Lot PL-B-60 was below the ballast of Floor 3. Matrix consisted of ballast. It was light brown in color and semi-compact. I closed the lot when we exposed Floor 4, a well preserved stucco floor. The ending elevation was 198.4 cm below Datum 5A. During the excavation of this lot, I recovered pottery and chert.

Level 3, PL-B-62: This lot is below Floor 4. The matrix consisted of plaster and ballast. Matrix was homogeneous and light brown-gray in color. I ended this lot when I uncovered Floor 5. The ending elevation was 203 cm below Datum 5A. Artifacts found in this level included pottery, chert and freshwater shell.

Level 4, PL-B-63: This lot was below Floor 5. The matrix consisted of plaster and ballast. After the removal of the ballast I discovered two floors—Floor 6 and Floor 7. Floor 6 was only found at the southwestern corner of the unit. In the rest of the unit, I exposed Floor 7, a well-preserved stucco floor. Floor 7 was approximately 8 cm beneath Floor 6. The ending elevation of this lot was 207 cm below Datum 5A.

Level 5, PL-B-64: This lot corresponded to the level below Floor 6. The matrix consisted of ballast. I ended this lot when Floor 7 was completely exposed at 217.6 cm below Datum 5A. Archaeological artifacts recovered included pottery and chert.

Level 6, PL-B-65: This lot was beneath Floor 7. The matrix consisted of plaster and ballast. The lot ended when we uncovered Floor 8, a well-preserved stucco floor. The ending elevation was 222.6 cm below Datum 5A. Cultural materials found included pottery and chert.

Level 7, PL-B-66: This lot was below Floor 8. The matrix consisted of plaster and ballast. Matrix was homogeneous and semi-compact. I closed the lot when I exposed Floor 9. The ending elevation was 228.8 cm below Datum 5A. Archaeological artifacts found in this lot included pottery, chert and freshwater shell.

Level 8, PL-B-67: This lot was below Floor 9. It consisted of plaster and ballast. After removing Floor 9, I uncovered Floor 10, a stucco floor that was badly preserved. Floor 10 was partially covering two architectural features—Feature 11 and Feature 12. The ending elevation of this level was 236.2 cm below Datum 5A. I recovered pottery, chert and freshwater shell.

Level 9, PL-B-71: This lot is below Floor 10. It was opened to expose Feature 11—the cobbled floor. The matrix consisted of ballast. The ending elevation was 241.4

cm below Datum 5A. Cultural materials included pottery, chert, and freshwater shell.

Level 10, Lot PL-B-135, Lot PL-B-138, PL-B-150 and PL-B-154: I opened these lots to register the materials recovered beneath Feature 11, a cobbled-floor platform. The main goal of exploring below Feature 11 was to uncover Feature 12. Matrix was sandy clay with small stones, gray, loose and homogeneous. After removing the matrix, I noticed several interesting features. Floor 12 was located 30 cm beneath Feature 11. This stucco floor was white and well preserved. Feature 12 was resting on top of a tamped earth surface (5-10 cm) resting on Floor 12. I also exposed an alignment facing northeast that I called Feature 21. The ending elevation of this lot was 261.4 cm. Archaeological artifacts recovered included pottery, chert, freshwater shell, marine shell, obsidian, faunal remains, serpentine, and charcoal.

Level 10, Lot PL-B-112 and PL-B-92: I opened these lots to register the materials recovered below Floor 11 and outside Feature 12. The matrix was sandy clay mixed with small pieces of soft limestone, light brown in color, and loose. Mixed with the matrix, I also found medium limestone stones. After removing the matrix, I exposed another alignment made of roughly cut stones resting on fill. I called this alignment Feature 20. I ended this lot when limestone started to predominate in the matrix. Archaeological materials recovered included pottery, chert, and freshwater shell.

Level 11, Lot PL-B-139: This lot corresponded to the exploration of the area between Feature 21 and Feature 12. The matrix was sandy clay with small stones. After removing the matrix, I uncovered Feature 22, an alignment of stones running north-south and facing west. This feature could have functioned as a terrace of Feature 21. Floor 12 functioned as patio surface of Feature 21 and Feature 22. The ending elevation was 273.6

cm below Datum 5A. Archaeological artifacts recovered included pottery, chert, freshwater shell, slate and, three special finds.

Level 11, Lot PL-B-144: This lot was below the tamped earth floor located outside Feature 12. It was opened to explore the foundation of Feature 12. I established that this feature rested on top of Floor 12. The matrix was silty clay loam, light gray in color. Cultural artifacts recorded included pottery, chert, freshwater shell, quartz, and obsidian.

Level 11, Lot PL-B-159: This lot corresponded to the exploration of the level below Floor 12, inside Feature 12. The matrix consisted of plaster. I ended this lot when we reached another stucco floor called Floor 13. This stucco floor was smooth and white in color. It was delimited by an alignment running north-south made of small slabs—Feature 23—that was completely covered by Floor 12. The ending elevation of the lot was 283.6 cm below Datum 5A. Archaeological materials recorded included pottery and chert.

Level 11, Lot PL-B-190: This lot corresponded to the exploration between Feature 20 and Feature 21. It was opened to explore the foundation of Feature 20. I established that Feature 20 was covered by fill when the foundation of Feature 21 was built. The matrix was sandy clay, light gray in color. In this lot, I uncovered pottery, chert, freshwater shells, a figurine fragment and shell beads.

Level 12, Lot PL-B-160: This lot was below Floor 13, inside Feature 12. The matrix was plaster followed by ballast. I ended this lot when well-preserved stucco, called Floor 14, was exposed. The ending elevation was 291.8 cm below Datum 5A. Archaeological materials reported included pottery, chert, and freshwater shell.

Level 13, Lot PL-B-163: This lot was below Floor 14, inside Feature 12. The surface had white areas that seemed like a stucco floor, although deteriorated. I decided that it was a stucco floor because I observed a leveled surface in the baulk of the excavation unit. Matrix was ballast followed by clay with a few small stones. I ended this lot when we reached a tamped earthen surface called Floor 15. The ending elevation was 302.4 cm below Datum 5A. Archaeological artifacts recovered included pottery, chert and freshwater shell.

Level 14, Lot PL-B-164: This lot was below Floor 15, the tamped earthen surface. The matrix was sandy clay with stones. Beneath Floor 15, I uncovered a double wall named Feature 25. Due to the dimensions of the excavation unit, I only uncovered a 1.10 m section of this feature. This wall was 50 cm thick and rested on another tamped earthen floor called Floor 16. The ending elevation was 313.4 cm below Datum 5A. Archaeological artifacts recorded included pottery, chert and freshwater shell.

Level 15, Lot PL-B-167: This lot was below Floor 16, a tamped earthen surface. Small yellow stones made this feature discernible. The matrix was sandy clay with a few small stones. It was sticky, semi-compact, homogeneous and gray in color. This lot ended when we reached another tamped earthen surface called Floor 17. The surface was made of sandy clay and small stones. The ending elevation was 323.2 cm below Datum 5A. Archaeological materials recorded included pottery, chert and freshwater shell.

Level 16, Lot PL-B-168: This lot was below Floor 17, a tamped earthen surface made of small yellow stones and sandy clay. Matrix was gray clay, homogenous and semicompact. I ended this lot when I noticed a change in the matrix, which started being whitish due to marl inclusions. The ending elevation of this lot was 327.4 cm below

Datum 5A. Archaeological materials included pottery, chert and limestone.

Level 17, Lot PL-B-169: This lot corresponded to the exploration of the level of fill consisting of clay mixed with marl. The matrix was heterogeneous and semi-compact. At the end of the level, I exposed marl, which was concentrated at the western and southern section of the excavation unit. The ending elevation was 338.6 cm below Datum 5A. Archaeological materials recorded included pottery, chert and charcoal.

Level 18, Lot PL-B-170: This lot corresponded to the exploration of fill. The matrix consisted of gray clay with small stones. Small lens of marl and yellow clay were present in the matrix. I ended this lot when I observed black soil. The ending elevation was 394.2 cm below Datum 5A. I recovered pottery, chert, freshwater shell and granite.

Level 19, Lot PL-B-174: This lot corresponded to the exploration of fill, consisting of clay mixed with marl, dark black soil and lens of yellow clay. Few large stones were part of the matrix. This matrix was sticky, compact and heterogeneous. I ended this level when I uncovered a white leveled surface made of marl. This surface had a slope towards north. Few centimeters above this surface, I reported a *mano*. The ending elevation was 447.8 cm below Datum 5A. Archaeological artifacts included pottery, chert, freshwater shell, granite and cobble.

Level 20: This level corresponded to the exploration of the level below the white marl surface. The matrix was marl, compact and homogeneous. No cultural materials were found at this level. I ended this level arbitrarily, because matrix was quite compact and no cultural artifacts were uncovered. The ending elevation was 536.6 cm below Datum 5A.

EXCAVATION UNIT CHP-PB-PU-17

This excavation unit measured 3 m x 3 m. It was located west of EU CHP-PB-PU-16. It was opened to further explore Feature 11. In order to take the elevations, we used Datum 6A (0.50 m above Datum 5A), Datum 7 (0.50 cm below Datum 5A) and Datum 8 (1 m below Datum 5A). This excavation unit was 3.67 m deep.

Level 1, Lot PL-B-58: This lot corresponded to the excavation of the dark brown soil mixed with small and medium stones, as well as with some tree roots. The consistence of this matrix was compact. The beginning elevation was 116.6 below Datum 6A. As the excavation proceeded, I uncovered cut stones, collapsed from Structure B-5. Because these cut stones were all over the excavation unit, I decided to end the lot at this level. The ending elevation was 130.8 cm below Datum 6A. Cultural remains included pottery, chert and freshwater shell.

Level 2, Lot PL-B-59 and Level 3, Lot PL-B-68: This lot corresponded to the exploration below the level of cut stones. This lot consisted of humus and collapse. After removing the cut stones, I exposed humic soil mixed with medium stones. As the excavation proceeded, I uncovered an alignment made of coarse stones, located at the southwestern section of the excavation unit. I called this alignment Feature 13. Feature 13 was resting on fill and was likely a Terminal Classic structure. Inside Feature 13, I found remains of a stucco floor. Outside of the feature, I found fill and humic soil.

As the excavation continued, I exposed another alignment of stones, north of Feature 13. This alignment consisted of two courses of cut stones forming an outset. I named this alignment Feature 14. This wall had the same orientation than Feature 9 or Structure B-5. However, I consider that it is unlikely that Feature 14 was part of Structure

B-5 because Feature 14 rested on Floor 2. I also established that Feature 13 rested on top of Feature 14. Feature 13 was one of the terraces of Structure B-5. The ending elevation of this lot was 190.2 cm below Datum 6A. Cultural materials found in this level included pottery, chert, granite, quartz, freshwater shell, marine shells, fauna and two special findings.

Level 4, Lot PL-B-69: This lot corresponded to the exploration of the level below Floor 1, located outside of Structure B-5. The matrix consisted of plaster and ballast. The color of the matrix was light brown and compact. During the exploration of the level below Floor 1, I recorded another alignment of stones that extended approximately 25 cm northwards of Feature 14. This alignment, called Feature 15, was covered by Floor 1. The ending elevation was 222 cm below Datum 6A. I recovered pottery, chert, freshwater shell, marine shell and quartz.

Level 5, Lot PL-B-72 and Lot PL-B-100: This lot corresponded to the excavation below Floor 2. It was divided in two lots. Lot PL-B-72 was located outside Feature 15, while Lot PL-B-100 included the area inside this feature. The matrix consisted of plaster and ballast. Through the excavation of these lots, I found out that Feature 15 continued going down. These lots ended when Floor 3 was exposed. The ending elevation was 229.4 cm below Datum 6A. Cultural materials recovered included pottery, chert and freshwater shell.

Level 6, Lot PL-B-73 and Lot PL-B-158: This level was below Floor 3. It was divided in two lots. Lot PL-B-73 was located outside Feature 15, while Lot PL-B-158 included the area inside this feature. The matrix consisted of plaster and ballast. I uncovered an alignment running N-S and facing west. This feature consisted of two

courses of stones resting on Floor 4. I interpreted this alignment as being part of Feature 15. These lots ended when I exposed Floor 4. The ending elevation was 233 cm below Datum 6A. Cultural materials recovered included pottery, chert and freshwater shell.

Level 7, Lot PL-B-75 and Lot PL-B-161: This level was below Floor 4. It was divided in two lots. Lot PL-B-75 was located outside Feature 15, while Lot PL-B-161 included the area inside this feature. The matrix consisted of plaster and ballast. Lot PL-B-75 ended when Floor 4a, a well preserved stucco floor, was exposed. The ending elevation was 238 cm below Datum 6A. Cultural materials recovered included pottery, chert and freshwater shell.

Level 8, Lot PL-B-77: This lot was below Floor 4a. Matrix was plaster and ballast, light gray in color, homogeneous and compact. I discovered Feature 16, an alignment running E-W and facing north. Apparently, Feature 16 continued beneath Feature 15. Feature 16 was made of semi-worked cut stones of several dimensions. I ended this lot when I exposed Floor 5, another stucco floor. The ending elevation was 256 cm below Datum 6A. In this lot, I found pottery, chert and quartz.

Level 9, Lot PL-B-81: This lot was below Floor 5. Matrix is ballast, light gray in color, homogeneous and compact. I observed that Floor 5 partially covered Feature 16 (E-W alignment). I ended this lot when I exposed Floor 6, a badly preserved stucco floor. The plaster of the floor was only found near Feature 16. Feature 16 was resting on Floor 6, although in some areas this feature rested on fill. Feature 16 consisted of one row of semi-worked cut stones. The ending elevation was 256.4 cm below Datum 6A. Cultural materials included pottery and chert.

Level 10, Lot PL-B-83 and Lot PL-B-162: This lot was below Floor 6, a badly preserved stucco floor. It was divided in two lots. Lot PL-B-83 was located outside Feature 15, while Lot PL-B-162 included the area inside this feature. The matrix consisted of ballast. It was compact, homogeneous and light gray in color. Floor 6 was likely a resurface of Floor 7. Floor 7 marked the end of the lot. The ending elevation was 260.6 cm below Datum 6A. Cultural materials included pottery, obsidian, and chert.

Level 11, Lot PL-B-84: This lot was below Floor 7, a badly preserved stucco floor. The matrix consisted of ballast. It was compact, homogeneous and light gray in color. This lot ended when I exposed Floor 8. The ending elevation was 270 cm below Datum 6A. Cultural materials recovered in this lot included pottery and chert.

Level 12, Lot PL-B-86 and Lot PL-B-165: These lots were below Floor 8. Lot PL-B-86 was located outside Feature 15 and Feature 16, while Lot PL-B-165 included the area inside Feature 15. Matrix was plaster and ballast. It was homogeneous, compact and light gray in color. I closed this lot when we uncovered Floor 9. The ending elevation was 274.6 cm below Datum 6A. I only recovered pottery.

Level 13, Lot PL-B-88: This lot corresponded to the exploration of the level below Floor 9, outside Feature 15 and Feature 16. Matrix was ballast, compact, homogeneous and light gray in color. I ended this lot when I uncovered Floor 10, another stucco floor. The ending elevation was 276.6 cm below Datum 6A. I only recovered a few sherds of pottery.

Level 14, Lot PL-B-89: This lot corresponded to below Floor 10, outside Feature 15 and Feature 16. The matrix was ballast, compact, homogeneous and light gray in color. I ended this lot when I uncovered Floor 11a and Feature 11—the cobbled platform. The

ending elevation was 281.4 cm below Datum 6A. Cultural materials found in this lot included pottery and chert.

Level 15, Lot PL-B-91: This lot was below Floor 11a, outside Feature 15 and Feature 16. The matrix was ballast, compact, homogeneous and light gray in color. I ended this lot when I uncovered Feature 11. The ending elevation was 285 cm below Datum 6A. Cultural materials found in this lot included pottery.

Level 16, Lot PL-B-133, and Lot PL-B-166: These lots corresponded to the exploration of the level below Feature 11. The matrix was silty clay loam mixed with small stones. As we were digging, I found the remains of an apsidal structure that I called Feature 19. I ended this level when we reached the upper-most stone of Feature 19. The ending elevation was 173 cm below Datum 7. Archaeological artifacts included pottery, chert, marine shell and freshwater shell.

Level 16, Lot PL-B-153: This lot was opened to register the materials recovered during the cleaning of Feature 19. I recovered a few pieces of pottery.

Level 16, Lot PL-B-172: This lot corresponded to the exploration of the level below Feature 11, below the upper-most stone of Feature 19. I exposed the wall of Feature 19 that was built with coarse limestone stones. At the edge of the unit, I found another alignment, Feature 20. Feature 20 was the remains of a rectangular platform. I ended this level when I uncovered the tamped-earth floor and the wall of Feature 19. The ending elevation was 213.2 cm below Datum 7. Archaeological artifacts included pottery, chert, marine shell and freshwater shell.

Level 17, Lot PL-B-176 and Level 18, Lot PL-B-177: This lot corresponded to the exploration of the fill inside Feature 19, the apsidal structure. Matrix was sandy clay,

gray in color, homogeneous and compact. A few small stones and some big stones were recorded among the matrix. I ended these levels when bedrock was reached. The ending elevation was 347.8 cm below Datum 8. Cultural materials included pottery, chert, freshwater shell and marine shell.

EXCAVATION UNIT CHP-PB-PU-18

This excavation unit was located immediately north of EU CHP-PB-PU-15. It measured 2 m x 3 m and was 90 cm deep. In order to take elevations, we used Datum 5A.

Level 1, Lot PL-B-70: This lot consisted of the removal of the dark brown organic soil, mixed with small stones. The beginning elevation of this lot was 165.4 cm below Datum 5A. After removing the humus, I uncovered the ballast of a stucco floor. Based on data obtained at EU CHP-PB-PU-15 and EU CHP-PB-PU-17, I established that this floor was Floor 3. The ending elevation of this lot was 197 cm below Datum 5A. Artifacts recovered during the excavation of this lot included pottery and chert.

Level 2, Lot PL-B-74: This lot corresponded to the level below Floor 3. The matrix consisted of plaster and ballast. It was compact and light brown in color. I ended this lot when we uncovered Floor 4. The ending elevation was 206.4 cm below Datum 5A. I recovered pottery and chert.

Level 3, Lot PL-B-76: This lot was below Floor 4. The matrix consisted of plaster and ballast. It was compact and light gray in color. I ended this lot when we uncovered Floor 5. The ending elevation was 213.8 cm below Datum 5A. Cultural materials recovered included pottery, chert and slate.

Level 4, Lot PL-B-78: This lot corresponded to the level below Floor 5. The matrix consisted of plaster and ballast. It was compact and light brown in color. I closed this lot when we uncovered the ballast of Floor 6. The ending elevation was 221 cm below Datum 5A. Cultural remains found included pottery, chert and freshwater shell.

Level 5, Lot PL-B-79: This lot corresponded to the level below the ballast of Floor 6. The matrix consisted of ballast. It was compact and light gray in color. I ended this lot when I uncovered the ballast of Floor 8. After a revision of the floor sequence, we noticed that the distinction between Floor 6 and Floor 7 was difficult to do in this excavation unit. Apparently, these floors merged together. The ending elevation was 224.6 cm below Datum 5A. Cultural materials in this lot were pottery and chert.

Level 6, Lot PL-B-80: This lot corresponded to the level below the ballast of Floor 8. The matrix consisted of ballast. It was compact and light brown in color. I closed this lot when I uncovered the ballast of Floor 9. The ending elevation was 235 cm below Datum 5A. Cultural remains included pottery, chert and freshwater shell.

Level 7, Lot PL-B-82: This lot corresponded to the level below the ballast of Floor 9. The matrix consisted of ballast. It was compact and light gray in color. I ended this lot when Floor 10 was exposed. The ending elevation was 242.2 cm below Datum 5A. Cultural materials found included pottery, chert and quartz.

Level 8, Lot PL-B-85: This lot corresponded to the level below Floor 10. The matrix consisted of plaster and ballast. It was compact and light brown in color. As the excavation proceeded, I uncovered the northeastern corner of Feature 11. North of Feature 11, I exposed the plaster surface called Floor 11. Floor 11 was at the same level than Feature 11. The ending elevation was 246.2 cm below Datum 5A. I found pottery,

chert, and freshwater shell.

Level 9, Lot PL-B-87: This lot is below Floor 11, the stucco floor located north of Feature 11. The matrix consisted of plaster and ballast. It was compact, homogeneous and light brown in color. Beneath the ballast, I found a layer of medium stones, which marked the end of this lot. Cultural materials included pottery, chert, freshwater shell and marine shell.

EXCAVATION UNIT CHP-PB-PU-19

This excavation unit was placed two meters north of EU CHP-PB-PU-17. It measured 3 m x 3 m and was approximately 3 m deep. It was opened to continue exploring Feature 11. In order to take elevations, I used Datum 6A (0.50 m above Datum 5A), Datum 7 (0.50 cm below Datum 5A) and Datum 8 (1 m below Datum 5A). At some point of the excavation, when Feature 11 and Floor 11 were exposed, I decided to divide the excavation unit into three sections, two below Feature 11 (EU CHP-PB-PU-19b and EU CHP-PB-PU-19c) and one beneath Floor 11 (EU CHP-PB-PU-19a).

Level 1, Lot PL-B-90: This lot corresponded to the excavation of the humic layer consisting of dark brown soil, mixed with small stones and tree roots. The matrix was loose and homogeneous. The beginning elevation of this lot was 87.4 cm below Datum 7. After removing the humus, I found a fairly preserved stucco floor—Floor 3—that marked the end of the lot at 145.8 cm below Datum 7. I noticed that this floor was cut at the southern edge of the unit. The disturbance appeared to have a square shape (1.50 m by 1.50 m). I interpreted this cut as a test pit conducted by David Cheetham (1996) in the 1990s. Cultural materials in this level included pottery, chert, freshwater shell, obsidian

and charcoal.

Level 2, Lot PL-B-96: This lot corresponded to the level below Floor 3. The matrix consisted of plaster and ballast that was compact and light gray in color. I ended this lot when I uncovered Floor 4. The ending elevation was 148.6 cm below Datum 7. Archaeological artifacts included pottery and chert.

Level 3, Lot PL-B-97: This lot corresponded to the level below Floor 4. The matrix consisted of plaster and ballast. It was compact and light brown in color. I ended this lot when I uncovered Floor 5, a poorly preserved stucco floor. The ending elevation was 152.4 cm below Datum 7. Artifacts recovered were pottery and chert.

Level 4, Lot PL-B-99: This lot corresponded to the level below Floor 5. The matrix consisted of plaster and ballast. It was compact and light brown in color. I ended this lot when we uncovered Floor 6 at 163.8 cm below Datum 7. Archaeological items included pottery and chert.

Level 5, Lot PL-B-101: This lot was below Floor 6. The matrix consisted of plaster and ballast. It was compact and light gray in color. I ended this lot when I uncovered Floor 7 that was disturbed at the northeastern corner of the excavation unit. The ending elevation was 168.6 cm below Datum 7. I found pottery and chert.

Level 6, Lot PL-B-103: This lot corresponded to the level below Floor 7. The matrix consisted of plaster and ballast. It was compact and light gray in color. I ended this lot when I uncovered Floor 8 that was disturbed at the northeastern corner of the excavation unit. The ending elevation was 175.6 cm below Datum 7. I found pottery, chert and quartz.

Level 7, Lot PL-B-104: This lot corresponded to the level below Floor 8. The matrix consisted of plaster and ballast. It was compact and light gray in color. After removing this floor, I uncovered the northern limit of Feature 11 and Floor 11. Floor 9 and Floor 10 were not observed at this excavation unit. The ending elevation was 183.4 cm below Datum 7. Archaeological artifacts only included pottery.

Excavation Unit CHP-PB-PU-19a

Level 8, Lot PL-B-113: This lot was opened to explore the level below Floor 11. I noticed that Floor 11 covered a small surface of Feature 11. The matrix was sandy clay, dark gray in color, loose and, homogeneous. This lot was different from the other levels because of the large amount of pottery recovered and the diversity of materials. I ended this lot arbitrarily to reduce the size of the excavation unit. The ending elevation was 197.7 cm below Datum 7. I found pottery, chert, freshwater shell, marine shell, quartz, obsidian, slate, shell beads and daub.

Level 9, Lot PL-B-131: I opened this lot to further explore the level below Floor 11. The excavation unit was reduced to 1.80 m x 0.80 m. The matrix consisted of silty clay loam with few small stones. It was loose, homogeneous and brown gray in color. Charcoal was spread across the level. The amount and diversity of materials decreased from the previous level. I ended this lot because I noticed a whitish surface that may be a floor (Floor 12b). The ending elevation was 226.8 cm below Datum 7. Archaeological materials included pottery, chert, freshwater shell, marine shell and charcoal.

Level 10, Lot PL-B-132: This lot was opened to explore the level below the whitish gray fill below Floor 11 (Floor 12b). The matrix was silty clay loam mixed with

soft limestone stones. It was brown-gray in color and semi-compact. I ended this lot arbitrarily, at 252 cm below Datum 7. Archaeological artifacts found in this lot included pottery, chert, freshwater shell, charcoal, slate and shell beads.

Excavation Unit CHP-PB-PU-19b

This excavation sub-unit measured 2.50 m x 1.60 m and was located at the western half of the excavation unit. It was opened to explore the area beneath Feature 11. I used Datum 7 to take elevations.

Level 8, Lot PL-B-141: This lot corresponded to the level below Feature 11. The beginning elevation was 224.8 cm below Datum 7. The matrix consisted of silty clay loam. It was dark gray in color, sticky, homogeneous and compact. I ended the lot when we reached the level of Floor 12, the stucco floor associated with Feature 21 and Feature 22. The ending elevation was 237.8 cm below Datum 7. Archaeological artifacts found included pottery, chert, freshwater shell, marine shell, and obsidian.

Level 9, Lot PL-B-193: This lot corresponded to the exploration below the level of Floor 12. The matrix consisted of silty clay loam. It was brown-gray in color, compact and homogeneous. I ended this lot when I found a tamped earthen floor made of marl. This surface was called Floor 13. At the southern edge of the unit, I uncovered two stones interpreted as the remains of a wall resting on fill. The ending elevation was 254.4 cm below Datum 7. I uncovered a large amount of ceramic sherds and freshwater shell. I also found chert, fauna remains, marine shell, slate, shell beads, and figurine fragments.

Level 10, Lot PL-B-194: This lot corresponded to the exploration of the level below Floor 13, a white tamped earthen floor. The matrix was sandy clay, gray in color,

homogeneous and semi-compact. I ended this lot when I observed a change in the matrix. The matrix started being mixed with marl. The ending elevation was 376 cm below Datum 7. Archaeological items were pottery, chert, freshwater shell, charcoal, fauna, and obsidian.

Level 11, Lot PL-B-201: This lot corresponded to the exploration of fill below Floor 13, a white tamped earthen floor. The matrix was sandy clay mixed with *marl*. It was brown-gray in color and semi-compact. I ended this lot when we reached a level made of large stones, marl and clay. I interpreted this feature as the remains of Cunil architecture. At the edge of the excavation unit, I observed another possible Cunil architecture (Feature 33). This feature consisted of the modification of the bedrock in which, steps were carved or added. The large stones mixed with clay and marl were a later construction. The ending elevation was 382.8cm below Datum 7. Archaeological materials found were pottery, chert and freshwater shell.

Level 12, Lot PL-B-203: This lot corresponded to the exploration of large stones. I found clay and marl mixed with the large stones. The stones were removed and I exposed a level of marl fill. The ending elevation was 402 cm below Datum 7. Cultural materials recovered included pottery, chert and freshwater shell.

Excavation Unit CHP-PB-PU-19c

This excavation sub-unit measured 1.90 m x 1.40 m. It was located at the southeastern section of the excavation unit. I opened it to explore the area beneath Feature 11. I used Datum 7 to take elevations.

Level 8, Lot PL-B-148: This lot was below Feature 11 and outside Feature 12. The matrix was silty clay loam, dark gray in color, homogeneous and compact. I ended the lot when I uncovered the uppermost stone of Feature 12. The ending elevation was 237.8 cm below Datum 7. Archaeological artifacts found included pottery, chert, freshwater shell, marine shell, and obsidian.

Level 9, Lot PL-B-149: I opened this lot to explore the level below Floor 11, outside Feature 12. The matrix was silty clay loam, sticky, semicompact and gray in color. Outside Feature 12, I uncovered Floor 12b, the tamped earthen surface that partially covered Feature 12 and was built on top of Floor 12, the patio surface of Feature 21 and Feature 22. This surface was likely the patio surface of Feature 12. The ending elevation was 249.2 cm below Datum 7. Cultural materials included pottery, chert, freshwater shell and marine shell.

Level 10, Lot PL-B-152: I opened this lot to explore the level below the tamped earthen floor associated to Feature 12, Floor 12b. The matrix was silty clay loam, gray in color and homogeneous. Because of the rain, it was sticky. I closed the lot when I exposed Floor 12. The ending elevation was 164.4 cm below Datum 8. Archaeological artifacts included pottery, chert, freshwater shell and marine shell.

Level 11, Lot PL-B-178: This lot corresponded to the exploration below Floor 12. The matrix consisted of plaster and ballast. It was compact and homogeneous. I ended this lot when I found Floor 13, a white tamped earthen floor. In this way, this lot was similar to Lot PL-B-194. The ending elevation was 183.6 cm below Datum 8. Cultural materials included pottery, chert, fauna, and freshwater shell.

Level 12, Lot PL-B-179: This lot corresponded to the level below Floor 13. The matrix was sandy clay, gray in color, homogeneous and semi-compact. I ended this lot when I reached Floor 14, a surface made of stucco. The ending elevation was 183.5 cm below Datum 8. Cultural materials found included pottery, freshwater shell and fauna remains.

Level 13, Lot PL-B-180: This lot corresponded to the level below Floor 14, a stucco floor. The matrix was sandy clay, gray in color, homogeneous and semicompact. I ended this lot when I reached Floor 15, a tamped earthen floor. The ending elevation was 248 cm below Datum 8. Archaeological artifacts found were pottery, chert, freshwater shell and fauna.

Level 14, Lot PL-B-183: This lot corresponded to the level below Floor 15, a tamped earthen floor. The matrix consisted of fill made of clay-like marl that was light gray in color, homogeneous and semi-compact. I ended this lot when I found a marl surface. I discovered large stones that were placed on top of this marl surface. I interpreted them as the remains of a Cunil structure. Therefore, this lot could be similar to Lot PL-B-201. The ending elevation was 257.4 cm below Datum 8. Archaeological artifacts included pottery, chert, freshwater shell and charcoal.

Level 15, Lot PL-B-184: This lot corresponded to the exploration of the level with large stones that were placed on top of a marl surface, similar to Lot PL-B-203. The matrix was marl and clay. It was compact, white and homogeneous. I ended this lot when we removed the large stones. The ending elevation was 323.6 cm below Datum 8. Cultural materials included pottery, chert, freshwater shell, quartz, charcoal and fauna.

Level 16, Lot PL-B-188: This lot corresponded to the excavation of fill made of clay and marl. This matrix was compact, white and homogeneous. I ended this lot when the fill became too compact to continue digging. The ending elevation was 342.6 cm below Datum 8. Cultural materials found were pottery, chert and freshwater shell.

EXCAVATION UNIT CHP-PB-PU-20

This excavation unit was placed immediately north of EU CHP-PB-PU-17 and south of EU CHP-PB-PU-19. It measured 2 m x 3 m and was approximately 1.80 m deep. I opened it to continue exploring Feature 11 and the buildings beneath this feature. In order to take elevations, I used Datum 7 (0.50 cm below Datum 5A).

Level 1, Lot PL-B-93: This lot corresponded to the excavation of the humic layer consisting of dark brown soil, mixed with small and medium stones. The matrix was loose and homogeneous. The beginning elevation was 93 cm below Datum 7. The ballast of Floor 3, 127.4 cm below Datum 7, marked the end of this lot. Cultural materials reported at this level included pottery, chert, fresh water shell, and fauna.

Level 2, Lot PL-B-94: I opened this floor to explore below the ballast of Floor 3. The matrix was ballast, compact, light brown in color and homogeneous. After removing the ballast, I uncovered two stucco floors, Floor 4b and Floor 4. Floor 4b was a resurface of Floor 4 and, in some areas, it was difficult to distinguish between them. The ending elevation was 145 cm below Datum 7.

Level 3, Lot PL-B-95: I opened this lot to explore below Floor 4b and try to expose Floor 4. The matrix consisted of ballast. It was compact, light gray on color and homogeneous. I ended this lot when I uncovered the ballast of Floor 4 at 150 cm below

Datum 7. Cultural materials found included pottery, and chert.

Level 4, Lot PL-B-98: This lot corresponded to the exploration below Floor 4. The matrix consisted of ballast. It was compact, homogeneous and light gray in color. I closed the lot when we uncovered Floor 5. The ending elevation was 154.4 cm below Datum 7. Materials included pottery, chert, freshwater shell.

Level 5, Lot PL-B-102: This lot corresponded to the exploration of the level below Floor 5. The matrix consisted of plaster and ballast. It was compact, homogeneous, and light gray in color. I closed the lot when we found the ballast of Floor 6. The ending elevation was 160.8 cm below Datum 7. Cultural materials were pottery and chert.

Level 6, Lot PL-B-105: This lot corresponded to the level below Floor 6. The matrix was ballast, compact, homogeneous and light gray in color. I ended the lot when we uncovered the ballast of Floor 7. The ending elevation was 167.8 cm below Datum 7. I only recorded pottery.

Level 7, Lot PL-B-106: This lot was below Floor 7. The matrix was ballast, compact, homogeneous and light gray in color. I ended this lot when I exposed Floor 8, a badly preserved stucco floor that was a resurface of Floor 9. In some areas, it was difficult to differentiate between Floor 8 and Floor 9. The ending elevation was 171.8 cm below Datum 7. Artifacts included pottery, chert and obsidian.

Level 8, Lot PL-B-108: This level was below Floor 8. The matrix consisted of plaster and ballast. It was compact, homogeneous and light gray in color. I ended this lot when I uncovered the ballast of Floor 9. The ending elevation was 175.8 cm below Datum 7. Cultural materials included pottery and chert.

Level 9, Lot PL-B-109: This lot corresponded to the exploration of the level below Floor 9. The matrix consisted of ballast. It was compact, homogeneous, and light gray in color. I closed the lot when I exposed the ballast of Floor 10. The ending elevation was 177.6 cm below Datum 7. Cultural materials included pottery and freshwater shell.

Level 10, Lot PL-B-110: This lot corresponded to the level below Floor 10. The matrix consisted of ballast. It was compact, homogeneous, and light gray in color. This floor covered Feature 11. The exposure of this feature marked the end of this lot. The ending elevation of this lot was 184 cm below Datum 7. Cultural materials recovered included pottery, chert and freshwater shell.

Level 11, Lot PL-B-146 and Lot PL-B-147: This lot was below Feature 11. The matrix consisted of fill made of sandy clay, with a few small stones. The matrix was compact, gray in color and homogeneous. After removing the matrix, I found Feature 12. I ended this level, when this architecture was exposed. The ending elevation was 242.6 cm below Datum 7. Archaeological artifacts uncovered included pottery, chert and freshwater shell and marine shell, fauna remains, shell bead and figurine fragments.

Level 12, Lot PL-B-151: This lot was below Feature 11 and inside Feature 12, the round structure. I uncovered Feature 21 and Feature 22, two alignments running north-south. Between these two alignments, I exposed uncut stones, indicating that these features were part of the same platform. I also exposed Floor 12 and I observed that this floor was lipping into Feature 22. The matrix consisted of sandy clay, gray in color, sticky and semi-compact. The ending elevation was 270 cm below Datum 7. Archaeological artifacts included pottery, chert, and freshwater shell.

Level 12, Lot PL-B-155: This lot was below the uppermost stone of Feature 12 and inside Feature 21. Matrix was fill made of sandy clay with small stones. It was gray in color, homogeneous and compact. The ending elevation was 269 cm below Datum 7.

EXCAVATION UNIT CHP-PB-PU-22

This excavation unit measured 3 m x 2 m and was 1.70 m deep. It was placed north of EU CHP-PB-PU-16 and east of EU CHP-PB-PU-19. In order to take elevations, I used Datum 5A and Datum 6A.

Level 1, Lot PL-B-111 and Lot PL-B-121: These lots consisted of dark brown soil mixed with small and medium stones. The beginning elevation was 161.2 cm below Datum 5A. After removing the humus, I exposed two stucco floors—Floor 4 and Floor 4b. Floor 4b was a resurface of Floor 4 and I only found it at the southern section of the excavation unit. The ending elevation was 194.4 cm below Datum 5A. Archaeological artifacts recovered included pottery and chert.

Level 2, Lot PL-B-114 and Lot PL-B-122: I opened these lots to explore the level below Floor 4b. The matrix consisted of plaster and ballast. It was compact, homogeneous and light gray in color. The ending elevation was 200.4 cm below Datum 5A. Uncovered artifacts included pottery and chert.

Level 3, Lot PL-B-115 and Lot PL-B-123: I opened these lots to explore the level below Floor 4. The matrix consisted of plaster and ballast. It was compact, homogeneous and light gray in color. I closed these lots when we exposed the ballast of Floor 5. The ending elevation was 206.4 cm below Datum 5A. Artifacts included pottery and chert.

Level 4, Lot PL-B-116 and Lot PL-B-124: These lots corresponded to the level below Floor 5. The matrix consisted of plaster and ballast. It was compact, homogeneous and light gray in color. I closed these lots when I exposed the ballast of Floor 6. The ending elevation was 218.8 cm below Datum 5A. Artifacts found included pottery and chert.

Level 5, Lot PL-B-117: This lot corresponded to the level below Floor 6. The matrix consisted of ballast. It was compact, homogeneous and light gray in color. This lot ended when we found the ballast of Floor 7. The ending elevation was 222.6 cm below Datum 5A. Artifacts included pottery and chert.

Level 6, Lot PL-B-118 and Lot PL-B-125: These lots corresponded to the level below Floor 7. The matrix consisted of ballast. It was compact, homogeneous and light gray in color. These lots ended when we found the ballast of Floor 8. At the middle point of the excavation unit, I exposed a large stone that was highly visible on the floor. The ending elevation of these lots were 226.8 cm below Datum 5A. Artifacts only included pottery.

Level 7, Lot PL-B-119 and Lot PL-B-126: These lots corresponded to the level below Floor 8. The matrix consisted of ballast. It was compact, homogeneous and light gray in color. These lots ended when I exposed the ballast of Floor 9. The stone exposed at the previous level was covered by this floor. The ending elevation was 234.6 cm below Datum 5A. Artifacts included pottery, chert and freshwater shell.

Level 8, Lot PL-B-120 and Lot PL-B-127: This lot corresponded to the level below Floor 9. This ballast was poorly preserved and, in some areas, it was not preserved at all. Consequently, it was difficult to separate between Floor 9 and Floor 10. The matrix

consisted of ballast. It was compact, homogeneous and light gray in color. I closed these lots when we exposed Floor 11, the stucco floor that extended outside of Feature 11. The large stone found in previous levels was resting on the fill of Floor 11. Floor 11 was broken at the area where the possible monument was placed. This monument was a large limestone block measuring 1.10m x 0.70m x 0.16m. It was carved but it was not possible to establish the image. The ending elevation was 240.6 cm below Datum 5A. Artifacts in this level only included pottery.

Level 9, Lot PL-B-157: This lot corresponded to the level below Feature 11. This lot was opened to uncover Feature 12. The matrix consisted of sandy clay, gray in color, homogeneous and semi-compact. The ending elevation was 290 cm below Datum 6A. Archaeological artifacts included pottery, chert, obsidian and freshwater shell.

Level 9, Lot PL-B-156, and Lot PL-B-129: These lots were opened to explore the level below Floor 11. The matrix consisted of plaster and ballast, followed by fill made of silty clay loam with a few amount of small stones. The matrix was brown in color, homogeneous and loose. I exposed a level of stones, whose dimensions were diverse and uncut. This marked the end of the lot. The ending elevation was 314 cm below Datum 6A. Archaeological artifacts reported included pottery, and chert.

Level 9, Lot PL-B-128: I opened this lot to explore the level below Floor 11, specifically where this stucco floor was broken. The matrix consisted of silty clay loam with a few amount of small stones. It was brown in color, homogeneous and loose. I discovered a level of stones, whose dimensions were diverse and uncut. I closed this level arbitrarily at 266.2 cm below Datum 5A. Archaeological artifacts found included pottery, and fauna.

EXCAVATION UNIT CHP-PB-PU-23

This excavation unit measured 3 m x 2 m and was 1.04 m deep. It was placed north of EU CHP-PB-PU-16 and EU CHP-PB-PU-18 and east of EU CHP-PB-PU-22. In order to take elevations, I used Datum 5A.

Level 1, Lot PL-B-130: This lot consisted of the removal of the organic dark brown soil mixed with small stones. The beginning elevation was 163.3 cm below Datum 5A. I ended this lot when I exposed Floor 4b and Floor 4a. The state of preservation of Floor 4b was poor. Because of this, in some areas was possible to observe Floor 4a. I interpreted Floor 4b as a resurface of Floor 4a. The ending elevation was 197.2 cm below Datum 5A. Cultural materials at this level included pottery and chert.

Level 2, Lot PL-B-134: This lot corresponded to the exploration below Floor 4b. The matrix consisted of plaster and ballast. It was compact, homogeneous and light brown in color. I closed the lot when I exposed Floor 4a. The ending elevation was 202.4 cm below Datum 5A. Archaeological artifacts included pottery, chert and quartz.

Level 3, Lot PL-B-136: This lot corresponded to the exploration below Floor 4a. The matrix consisted of plaster and ballast. It was compact, homogeneous and light gray in color. I ended this lot when I exposed Floor 6, which was found at 215.4 cm below Datum 5A. Archaeological artifacts uncovered included pottery, chert and quartz.

Level 4, Lot PL-B-137: This lot corresponded to the exploration below Floor 6. The matrix was plaster and ballast. It was compact, homogeneous and light brown in color. This lot ended when we exposed Floor 7. The ending elevation was 222.6 cm below Datum 5A. I only recovered two ceramic sherds.

Level 5, Lot PL-B-140: This lot was below Floor 7. The matrix consisted of plaster and ballast. It was compact, homogeneous and light gray in color. I ended the lot when Floor 8 was exposed at 228.8 cm below Datum 5A. Archaeological artifacts found during the excavation of this lot included pottery, and chert.

Level 6, Lot PL-B-142: This lot was beneath Floor 8. The matrix consisted of plaster and ballast. It was compact, homogeneous and light gray in color. I closed the lot when Floor 11 was exposed at 237.6 cm below Datum 5A. Artifacts included pottery, and chert.

Level 7, Lot PL-B-143: This lot was below Floor 11. The matrix consisted of plaster. I closed the lot when I exposed another stucco floor, Floor 11b. The ending elevation was 244.2 cm below Datum 5A. I only recovered pottery and chert.

Level 8, Lot PL-B-145: This lot corresponded to the level below Floor 11b. The matrix consisted of plaster, ballast and fill. The fill was made of silty clay loam mixed with small stones. Matrix was sticky, brown-gray in color and homogeneous. I closed this lot when we exposed a layer of small and medium stones. The ending elevation was 267 cm below Datum 5A. Archaeological artifacts included pottery, chert, freshwater shell, obsidian, marine shell, slate, and charcoal.

EXCAVATION UNIT CHP-PB-PU-24

This excavation unit measured 4 m x 3 m and was 1.29 m deep. It was placed west of EU CHP-PB-PU-17, EU CHP-PB-PU-20 and EU CHP-PB-PU-19. In order to take elevations, I used Datum 9 (20 cm below Datum 6A).

Level 1, Lot PL-B-171: This lot corresponded to the removal of the humic layer—organic, dark brown soil with small stones. The beginning elevation was 168.2 cm below Datum 9. I closed the lot when I exposed collapsed stones from Structure B-5 and, at the northern edge of the unit, Floor 4. The ending elevation was 228.8 cm below Datum 9. Cultural materials included pottery, chert, freshwater shell, quartz, daub, fauna remains and granite.

Level 2, Lot PL-B-175: This lot was a mixture of contexts: collapse coming from Structure B-5 and the ballast of Floor 1, Floor 2 and Floor 3. I decided to excavate these contexts as a single lot because of the bad preservation of these floors and because the contexts were already mixed. The removal of these contexts allowed uncovering the north wall of Structure B-5, as well as the lateral side of its staircase. The ending elevation of this lot was 231.8 cm below Datum 6A. Cultural materials found in this level included pottery, chert, freshwater shell, quartz, fauna, and obsidian.

Level 3, Lot PL-B-182: This lot was beneath Floor 4. The matrix consisted of plaster, ballast, and fill. This matrix was compact and light gray in color. I closed the lot when Floor 6 was exposed. Floor 5 was not found in this excavation unit, perhaps because it was too close to Floor 4. The ending elevation of the lot was 246.8 cm below Datum 6A. Archaeological artifacts uncovered included pottery, chert and freshwater shell.

Level 4, Lot PL-B-185: This lot corresponded to the level below Floor 6. The matrix was plaster and ballast. It was compact, homogeneous and light gray in color. This lot ended when we exposed Floor 8. Floor 7 was not observed in this area. The ending elevation was 267.2 cm below Datum 6A. Archaeological artifacts found in this

lot included pottery and chert.

Level 5, Lot PL-B-186: This lot corresponded to the level below Floor 8. The matrix consisted of plaster and ballast. It was compact, homogeneous and light gray in color. I closed the lot when Floor 10 was exposed at 277.2 cm below Datum 6A. Archaeological artifacts included pottery, chert and freshwater shell.

Level 6, Lot PL-B-187: This lot corresponded to the level below Floor 10. The matrix consisted of plaster, ballast, and fill. The matrix was compact, homogeneous and light gray in color. I closed the lot when I uncovered Feature 11. The ending elevation was 283 cm below Datum 6A. I recovered pottery, chert, freshwater shell and marine shell.

Level 7, Lot PL-B-189: This lot corresponded to the exploration below Feature 11. I closed the lot when I exposed the uppermost stone of Feature 12. The matrix was fill consisting of sandy clay. This matrix was compact, homogeneous and light gray in color. The ending elevation of this lot was 316.4 cm below Datum 6A. I recovered pottery, chert, quartz, freshwater shell, marine shell beads, a figurine fragment and two ceramic spindle whorls and fauna remains.

Level 7, Lot PL-B-191: This lot corresponded to the level below Feature 11 and outside Feature 21—the rectangular platform with a terrace. During the excavation process, we exposed the northern wall of Feature 21, although the terrace was not found. Apparently, it was dismantled in ancient times, perhaps during the construction of Feature 12. The matrix of this lot consisted of fill, made of sandy clay. It was compact, homogeneous and light gray in color. The ending elevation of this lot was 316.4 cm below Datum 6A. Archaeological artifacts reported in this level included pottery, chert,

quartz, freshwater shell, marine shell, shell beads, obsidian, figurine fragments, ceramic spindle whorl and fauna remains.

Level 7, Lot PL-B-192: This lot was beneath Feature 11 and outside Feature 19. The matrix consisted of fill made of sandy clay with stones. It was compact, homogeneous and less clay-like than the matrix found in other sections below Feature 11. I ended the lot at the level of Floor 12. I observed that the retaining wall of Feature 19 was made of three or four courses of roughly-cut stones. These stones were resting on fill. The ending elevation was 317.2 cm below Datum 6A. Materials found included pottery, chert, freshwater shell, marine shell, shell bead, quartz, figurine fragments and fauna remains.

Level 7, Lot PL-B-199: I opened this lot to explore the area between Features 20 and 21. The matrix consisted of sandy clay, compact and homogeneous. I ended the lot at the level of Floor 12 at 315 cm below Datum 6A. I recovered pottery, chert and freshwater shell.

Level 7, Lot PL-B-196: This lot was located outside Feature 12. The matrix was sandy clay. It was compact, homogeneous and gray in color. I closed the lot when Floor 12 was exposed at 315 cm below Datum 6A. Archaeological materials included pottery, chert, freshwater shell, marine shell, fauna remains and quartz.

Level 8, Lot PL-B-197: This lot was located outside and below the level of Feature 12. The matrix was sandy clay, compact, homogeneous and gray in color. I ended the lot arbitrarily at 320 cm below Datum 6A. Archaeological materials found included pottery and chert.

EXCAVATION UNIT CHP-PB-PU-25

This excavation unit measured 4.50 m x 3 m and was approximately 0.70 m deep. It was placed west of EU CHP-PB-PU-24. In order to take elevations, I used Datum 9 (20 cm below Datum 6A) and Datum 6A.

Level 1, Lot PL-B-173: This lot corresponded to the removal of the humic layer—organic, dark brown soil with small stones and some big stones. The beginning elevation was 81.8 cm below Datum 9. I exposed the northern wall of Structure B-5 and the staircase. I closed the lot when we uncovered collapsed stones from Structure B-5. The ending elevation was 123 cm below Datum 9. Cultural materials included pottery, chert, freshwater shell, marine shell, limestone, obsidian and fauna remains.

Level 2, Lot PL-B-181: This lot consisted of fill beneath the last construction phase of Structure B-5. This architecture was poorly preserved. It was represented by a staircase built on top of the Late Classic building. This staircase was resting on top of fill. After removing the cut stones of the last construction phase, I uncovered the Late Classic architecture as well as Floor 2 and Floor 3. I uncovered pottery, chert, obsidian, granite, limestone and quartz.

Level 3, Lot PL-B-195 and PL-B-200: I opened these lots to register materials recovered during the cleaning of Structure B-5. The goal was to expose the walls (PL-B-195) and the staircase (PL-B-200). During the clearing of the staircase, I established that it was dismantled, perhaps during the construction of the last construction phase. In these contexts, I found pottery, chert, and obsidian.

Level 3, Lot PL-B-202 and Lot PL-B-205: These lots were beneath Floor 3. Lot PL-B-202 corresponded to a 0.50 m x 1 m excavation unit opened just in front of the

stairside outset of Structure B-5. This small unit was only 30 cm deep. This small unit had as goal to explore the foundation of the first body of the penultimate construction phase of Structure B-5. Lot PL-B-205 was opened in front of the staircase in order to explore the foundation of the staircase of Structure B-5. The matrix consisted of plaster, ballast and fill. Based on the data, I established three construction phases of Structure B-5 dating to the Late Classic. First, a building represented by Features 9 and 15 was built on top of Floor 4. This building was dismantled and partially covered by Floors 3 and 2. Later, another building represented by Feature 10 was constructed on top of Floor 2. At some point, the terrace was partially dismantled and a new staircase was built. This staircase covered the previous staircase and the three terraces of Structure B-5. The terminal staircase was badly preserved but it was visible at the baulk of the excavation unit. I found pottery, chert and freshwater shell.

EXCAVATION UNIT CHP-PB-PU-26

This 3 m x 3 m excavation unit was located immediately west of the excavation unit CHP-PB-PU-25 and its adjacent to the staircase of Structure B-5. It was opened to uncover Feature 11, a cobbled platform discovered during the 2011 field season and exposed during 2012. In 2012, I did not find the northwestern corner of this feature and I expected to find it in this excavation unit. In order to take elevations, I used Datum 10. This datum was located 60° west, 8.54 m northwest and 1.30 m below Datum 5A. This excavation unit was 1.12 m deep.

Level 1, Lot PL-B-204: This lot corresponded to the removal of the humic layer. It consisted of dark-brown soil mixed with small stones and some medium-sized stones, as

well as tree roots. The consistence of this matrix was loose. The beginning elevation was 10.4 cm below Datum 10. At the north side of the excavation unit, I found Floor 4, a stucco floor dating to the Late Preclassic period. At the southern side, I exposed the collapsed stones from Structure B-5. These stones were 30 cm in length and were roughly cut. Because the purpose of this research is to expose Middle Preclassic architecture, I decided to leave the collapsed unexcavated and reduce the dimensions of the excavation unit. The ending elevation was 52.4 cm below Datum 10. During the cleaning of the baulks, I noticed the remains of a stucco floor at the southern baulk. This stucco floor may be Floor 2. Cultural remains included pottery, chert, slate, cobble, quartz, and obsidian.

Level 2, Lot PL-B-207: The excavation unit was reduced to 3 m x 1.40 m. The lot was below Floor 4, a well preserved stucco floor. The matrix was plaster and ballast. It was light brown in color and semi-compact. I ended this lot when Floors 5, 6 and 7 were exposed. Floor 5 was found in the northern section of the unit. Floors 6 and 7 were located in the southern section. At the northwestern corner of the unit, I observed that the soil was different and Floor 4 was already broken. I concluded that I exposed the southern limit of a trench excavated by Garber. The ending elevation was 67.6 cm below Datum 10. Cultural remains included pottery and chert.

Level 3, Lot PL-B-210: This lot was below Floor 5, a badly preserved stucco floor. The floor was broken at the southwestern corner and the northern section of the excavation unit. Floor 5 was approximately 4.5 cm thick. It was resting on a small layer of *sascab* that was light gray in color. Small stones were mixed with the fill. I closed the lot when we exposed Floor 6. This stucco floor was well preserved except at the

southwestern and northwestern corners. The ending elevation was 70 cm below Datum 10. I recovered pottery and chert.

Level 4, Lot PL-B-212: This lot corresponded to the exploration below Floor 6, a thin stucco floor that was a resurface of Floor 7. The matrix consisted plaster. It was semi-compact and light gray/white in color. I closed the lot when we uncovered Floor 7, a poorly preserved stucco floor. I recovered pottery, chert and freshwater shell during the excavation of this context.

Level 5, Lot PL-B-215: This lot was below Floor 7, a poorly preserved stucco floor. The matrix consisted of plaster and ballast. It was compact and light gray/white in color. Floor 7 was thin and it covered Floor 8, a stucco floor whose surface was uneven and unpolished. Floor 8 was better preserved at the eastern section of the excavation unit. The ending elevation of this lot was 84.8 cm below Datum 10. We only recovered pottery and chert in this excavation unit.

Level 6, Lot PL-B-218: This lot was below Floor 8 a badly preserved floor, except at the eastern section of the excavation unit. The matrix consisted of ballast and plaster. It was semi-compact and light brown in color. Beneath Floor 8, I exposed Floor 9, a badly preserved stucco floor. Despite of the short distance between Floor 8 and Floor 9, there was a thin layer of fill between them, indicating that they were different floors. The ending elevation of this lot was 88.8 cm below Datum 10. I only recovered pottery and chert.

Level 7, Lot PL-B-221: This lot was below Floor 9. The matrix consisted of plaster. It was compact and light brown in color. After removing the floor, I uncovered Floor 10. Ballast rather than plaster was visible in some areas. The ending elevation of

this context was 91.4 cm below Datum 10. I recovered pottery and chert.

Level 8, Lot PL-B-223: This lot was below Floor 10. After removing the plaster, I exposed another stucco floor at the eastern section of the excavation unit that was named Floor 10b. The ending elevation of this context was 94.6 cm below Datum 10. Cultural materials recovered consisted of pottery, chert and freshwater shell.

Level 9, Lot PL-B-227: This lot was below Floor 10b. The matrix consisted of plaster. I uncovered another stucco floor that was well preserved at the eastern section of the unit. This was the twelfth floor at the sequence of the unit, indicating that this area had more resurface events than the one excavated during the 2012 field season. The ending elevation of this lot was 110.6 cm below Datum 10. I recovered pottery, chert and cobble.

Level 10, Lot PL-B-232: This lot was below Floor 12, a fairly preserved stucco floor. The matrix consisted of plaster and stones. It was compact and light gray in color. I ended this lot when we uncovered Floor 13, a well preserved stucco floor. The ending elevation of this lot was 110.6 cm below Datum 10. Cultural materials recovered included pottery, chert, freshwater shell and slate.

Level 11, Lot PL-B-235: This lot was below Floor 13, a well preserved stucco floor. Beneath the plaster, I found a dark gray soil with few small stones. This soil is similar to the one discovered beneath Floor 11 exposed in the 2012 field season. Two cut stones were discovered at the northern edge of the unit. In comparison with previous levels, this context provided large amounts and variety of materials. Pottery, freshwater and marine shells predominated. I also recovered fauna remains, which were cut perhaps as an attempt to make ornaments. I closed this lot arbitrarily when I uncovered the bottom

of the cut stones. These stones were resting on small limestone stones. The ending elevation was 122.2 cm below Datum 10. Cultural materials included pottery, chert, freshwater shell, marine shell, fauna, quartz, charcoal, cobbles, chert microdrills and shell beads.

EXCAVATION UNITS CHP-PB-PU-27, CHP-PB-PU-27b, CHP-PB-PU-27c

This 3m x 3m excavation unit was located north of EU CHP-PB-PU-19. I opened it further explore the Cunil context that was found in EU CHP-PB-PU-19. EU CHP-PB-PU-27 measured first 1 m x 2 m but it was expanded to cover an area of 2.90 m x 2 m to expose a cobbled surface. The northern extension was designated as EU CHP-PB-PU-27b and the southern extension was named EU CHP-PB-PU-27c. The unit was 1.71 m deep. In order to take elevations, I used Datum 10.

Level 1, Lot PL-B-205, PL-B-219, and PL-B-237: This lot corresponded to the removal of the humic soil—dark brown soil mixed with small and medium stones. The beginning elevation was 33.8 cm below Datum 10. After removing the humus, I exposed Floor 4. At the main unit (CHP-PB-PU-27), this stucco floor was well preserved. At the northern extension, however, Floor 4 was highly disturbed by roots. I also noticed that Floor 4 was broken at the western corner of the northern extension. After consulting reports, I concluded that this disturbed area corresponded to a previous excavation conducted by Garber and Awe in 2009. At the southern extension, EU CHP-PB-PU-27c, I found the ballast of Floor 2 resting on Floor 4. The ending elevation was 60.4 cm below Datum 10. Cultural materials recovered included pottery, chert, freshwater shell, quartz, slate, daub, granite, and a chert notched arrow point.

Level 2-3, Lot PL-B-208, PL-B-225, and PL-B-240: This lot was below Floor 4 and Floor 5. At the main unit (CHP-PB-PU-27), the preservation of Floor 4 was good, except at the southeastern corner where plaster was not found but only the ballast. Floor 4 was approximately 4 cm thick. The matrix consisted of plaster and a layer of fill made of sandy loam and small stones. This fill was brown-gray in color and it was approximately 7 cm thick. After removing Floor 4 and the fill underneath, I found a stucco floor that was not well preserved because it was not present in several areas of the excavation unit. In those sections, I uncovered the next floor in the sequence—Floor 6. Floor 5 was in so bad state of conservation that was unintentionally removed during the excavation and Floor 6 was completely exposed. Regarding the northern extension (Lot PL-B-225), its dimensions were reduced 60 cm in the east because of Garber and Awe's excavation. At the northern edge of this extension, I discovered three postholes on the surface of Floor 6 that were characterized by having dark soil. The ending elevation of this lot was 83.2 cm beneath Datum 10. I uncovered pottery, chert, serpentine and daub.

Level 4, Lot PL-B-209, PL-B-229, and PL-B-242: This lot was below Floor 6, a stucco floor that was 3 cm thick. In the profile, I observe that Floor 5 and Floor 6 were separated by a thin layer of sandy loam fill. The condition of Floor 6 was bad, except at the southwestern corner. The matrix consisted of plaster followed by a thin layer of sandy loam fill. The postholes found in the previous level were still visible in this context. I ended this lot when I exposed Floor 7, a well preserved stucco floor. The ending elevation of this lot was 91.4 cm beneath Datum 10. I recovered pottery, chert, and freshwater shell.

Level 5, Lot PL-B-211, PL-B-230, and PL-B-243: This lot was below Floor 7. The

matrix consisted of plaster and ballast. It was light brown in color and compact. Floor 7 was approximately 7cm thick at the western section of the but at the center, Floor 7 merged with the next floor suggested that Floor 7 was a resurface of the floor underneath—Floor 8. The ending elevation of this lot was 95.8 cm beneath Datum 10. I uncovered pottery and chert.

Level 6, Lot PL-B-213, PL-B-231, PL-B-247: These lots were below Floor 8. The matrix was only plaster. After removing the plaster, I uncovered Floor 9, stucco floor that was not well preserved. At the southern extension, CHP-PB-PU-27c, I found a floor above Floor 9 that was called Floor 8b. This floor was badly preserved and, in some areas, was difficult to distinguish between Floor 8 and Floor 8b. Below Floor 8b, Floor 9 was exposed. The ending elevation was 103.8 beneath Datum 10. I only recovered pottery and charcoal.

Level 7, Lot PL-B-216, PL-B-233, and PL-B-249: These lots were below Floor 9, a badly preserved stucco floor. The matrix of this lot consisted of plaster and ballast. After removing the thin stucco floor, I uncovered Floor 10 at the eastern section of the excavation unit, while at the western section we exposed cobbles. These cobbles were resting on Floor 10. At the northern extension, EU CHP-PB-PU-27b, I found a stucco floor just above Floor 10. This stucco floor was named Floor 9b and it may represent a resurface event. Beneath Floor 9b, I uncovered the cobbled surface exposed in the main excavation unit. The postholes were still visible in this level. During the excavation of the southern extension, I notice that the cobbled surface consisted of irregular and angular stones and, therefore, it was unlikely that they represented an actual surface. I decided that the cobbled surface was in fact the ballast of Floor 9. Based on this interpretation, I

decided to remove them. I closed this level when Floor 10 was exposed in the whole unit. The ending elevation of this level was 104.8 cm beneath Datum 10. I only found pottery and chert.

Level 8, Lot PL-B-255, PL-B-260, and PL-B-278: This lot was below Floor 10. The matrix was plaster followed by clay loam with small stones. It was gray brown in color, compact when it was dry but sticky when it was wet. This matrix was similar to the fill found beneath Floor 11 exposed in 2012 field season, which indicates that Floor 10 was in fact Floor 11. As in other contexts below Floor 11, I uncovered large amount of pottery, freshwater shell and some marine shell, obsidian, fauna and special finds. Among the pottery I found, chocolate vessel spouts. I also found a concentration of broken pottery, freshwater shell and a complete figurine. This concentration of artifacts was named Feature 26b and was recorded with the lot number PL-B-260. The lot PL-B-255 was closed arbitrarily in order to reduce the dimensions of the unit to 1.50 m x 2 m. The ending elevation of this lot was 122.4 cm beneath Datum 10. The excavation of this level, however, continued as lot PL-B-278. I closed it when a white soft limestone pebble surface appeared across the unit. This surface of pebbles was named Floor 12 and marked the end of level 8. The ending elevation of PL-B-278 was 138.6 cm beneath Datum 10.

Level 9, Lot PL-B-282: This lot was below Floor 12, a surface made of white soft limestone pebbles. The matrix was silty clay loam that was dark gray brown in color. I closed the lot when we exposed another surface made of white soft pebbles that was called Floor 13. The ending elevation was 148.8 cm beneath Datum 10. I found pottery, chert, freshwater shell, cobbles, slate and a special find.

Level 10, Lot PL-B-287, and PL-B-313: This lot was below Floor 13, a surface made of white soft pebbles and tamped silty clay loam. The matrix was silty clay loam and it was dark gray brown in color. I ended the lot ended when I exposed a floor made of plaster designated as Floor 15. When I observed the baulk, I noticed the presence of another plaster floor above Floor 15. Apparently, Floor 14 was highly disturbed and it was not noticed during the excavation of the unit. At this point, I decided to extend the excavation north in order to see whether there were features associated with this stucco floor, but no feature was found. The ending elevation of this lot was 151.8 cm beneath Datum 10. I found pottery, chert, freshwater shell and special finds.

Level 11, Lot PL-B-377: This lot was below Floor 15. The matrix was silty clay loam, dark gray brown in color and sticky when it was wet. I ended the lot when I exposed a surface made of tamped marl designated as Floor 16. The ending elevation was 171.6 cm beneath Datum 10. I found pottery, chert, freshwater shell, marine shell and cobble.

Level 12, Lot PL-B-381: This lot was below Floor 16. The matrix was heterogeneous. It was a mixture of marl and brown and black soil. The dark soil was clay-like and loose, while marl was highly compact. I closed the lot when we exposed bedrock, at 205.2 cm beneath Datum 10B. The bedrock sloped southwards and it could have been the surface of Feature 33, the Cunil architecture exposed at the adjacent EU CHP-PB-PU-19. I uncovered few materials. Among them, I found pottery, chert and freshwater shell.

EXCAVATION UNIT CHP-PB-PU-28

This 3m x 3m excavation unit was located 3m west of EU CHP-PB-PU-26. It was 1.63 m deep. I opened it to explore the presence or absence of Kanluk architecture. In order to take elevations, I used Datum 10B (1.30m below Datum 5A).

Level 1, Lot PL-B-206: This lot corresponded to the removal of the humic soil—dark brown soil mixed with small and some medium stones. The beginning elevation of this lot was 28 cm below Datum 10B. Some large stones (approximately 40 cm in length) were present too. The excavation unit was disturbed by tree roots. After removing the humus, I exposed Floor 4 at the northern section of the unit, while stones collapsed from Structure B-5 were found at the southern section. The ending elevation of this lot was 40.6 cm beneath Datum 10B. I uncovered pottery, chert, quartz and serpentine.

Level 1, Lot PL-B-217: This lot corresponded to the removal of humic soil and stones collapsed from Structure B-5 in order to find the staircase outset of this building. During the excavation, I exposed two stucco floors, Floor 2 and Floor 4. Floor 2 was exposed only at the southeastern corner of the unit and had a rectangular cut. In the rest of the unit, I exposed Floor 4. This surface was poorly preserved. The ending elevation of this lot was 59.6 cm below Datum 10B. I recovered pottery, chert and charcoal from this context.

Level 2, Lot PL-B-222: This lot consisted of the ballast of Floor 2. The ballast consisted of medium size stones (20 cm in length) mixed with light gray fill. I ended the lot when I exposed Floor 4. The ending elevation of this lot was 70 cm below Datum 10B. I only recovered pottery.

Level 3, Lot PL-B-224: This lot corresponded to below Floor 4. After removing the matrix consisting of plaster and ballast, I uncovered Floor 5. This stucco floor also was in bad condition. I noticed that Floors 4 and 5 merged in some areas. The matrix was light brown in color and compact but in an area had a different coloration and consistency. The soil in this area was brown and soft, perhaps as a result of a burning event. The ending elevation of this lot was 78.2 cm below Datum 10B. I recovered pottery, chert, charcoal, serpentine and two special finds (figurine fragment and ceramic artifact).

Level 4, Lot PL-B-226: This lot was below Floor 5. The matrix consisted of plaster. It was light brown in color and compact. I closed the lot when I uncovered Floor 6. The plaster of this stucco floor was not well preserved and, in fact, I only exposed its ballast in several sections of the excavation unit. The ending elevation of this lot was 90.8 cm below Datum 10B. I recovered pottery, chert, daub and a biface fragment.

Level 5, Lot PL-B-228: This lot corresponded to below Floor 6. The matrix consisted of plaster and ballast. It was light brown and compact. The burned soil continued being present in this context. I ended this lot when we exposed Floor 7. The ending elevation was 100.4 cm below Datum 10B. Cultural materials recovered included pottery, chert, charcoal, daub and matrix.

Level 6, Lot PL-B-234: This lot was below Floor 7. The matrix consisted of plaster with small stones. The burned area was still present but the area that covered was smaller in comparison with the previous levels. This lot ended when we exposed Floor 8, a fairly preserved stucco floor. The ending elevation was 103.2 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell and daub.

Level 7, Lot PL-B-238: This lot was below Floor 8. The matrix consisted of plaster and ballast. The burned soil continued in this lot. I closed the lot when Floor 9 was exposed. The ending elevation was 107.6 cm below Datum 10B. Cultural materials recovered only included pottery.

Level 8, Lot PL-B-241: This lot corresponded to the excavation below Floor 9. The matrix consisted of plaster and fill made of clay loam. It was light brown in color and compact. Small stones were present in the fill. The burned soil was still present in this lot. I closed the lot when we uncovered the ballast of Floor 10. The ending elevation was 115.2 cm below Datum 10B. I recovered pottery, chert artifacts, marine shells and freshwater shells.

Level 9, Lot PL-B-246: This lot was beneath Floor 10. Beneath the stucco floor, I removed fill consisting of clay loam with small stones. This fill was loose and gray in color. Beneath the fill, I found two different things. At the southern section, I discovered a cobbled surface made of small slabs that were placed really tight together. I called this surface Feature 25. At the rest of the unit, I exposed a poorly preserved stucco floor that was at the same level than Feature 25. This plastered surface was named Floor 11. Feature 25 could have been coated with stucco floor because small portions of plaster were observed covering the stones. Feature 25 was similar to Feature 11 but, because there was not evidence to establish they were the same feature, I decided to give it a different name. The ending elevation for this lot was 129.4 cm below Datum 10B. Materials recovered included pottery, chert, freshwater shell, marine shell and carbon.

Level 10, Lot PL-B-251: This lot corresponded to the excavation beneath Floor 11 and outside Feature 25. The matrix was dark gray in color and consisted of silty clay

loam with small stones. I ended the lot when I exposed a possible floor surface—Floor 12—and a concentration of irregular stones. This possible floor surface was made of tamped earth with white inclusions. The concentration of irregular stones was called Feature 30. The ending elevation was 139 cm below Datum 10B. Materials included pottery, chert, freshwater shell, marine shell, granite, obsidian and carbon.

Level 11, Lot PL-B-293: This lot corresponded to the level below the possible surface made of tamped earth with white inclusions. Matrix was silty clay loam, gray in color and compact. I closed the lot when we exposed a surface made of tamped earth and marl that was identified as the exterior patio of Feature 27—a rectangular platform. At the northeastern corner of the unit, I uncovered another feature consisting of an oval platform made of small cobbles delimited by perhaps a single course of stones. I called this platform Feature 28. The stones delimiting Feature 28 were facing inside and were resting on the patio surface of Feature 27. The ending elevation of this lot was 157.6 cm below Datum 10B. I recovered pottery, chert, freshwater shell, marine shell, and obsidian.

Level 12, Lot PL-B-299: This lot was placed outside Feature 28 and beneath the patio surface of Feature 27. I opened this lot to determine how many courses of stones Feature 28 consisted of. I established that Feature 28 had only a course of stones. These stones ranged between 10 and 20 cm in length and were roughly cut. The ending elevation of this lot was 193 cm below Datum 10B. I recovered pottery, chert, freshwater shell, marine shell, fauna and quartz.

Level 11b, Lot PL-B-386: This lot was placed on Feature 28 and was opened to explore this feature once it was completely exposed. Feature 28 was an oval construction made of a single course of small and roughly cut stones that were facing in. The

dimensions of Feature 28 were 1.50 m x 1 m. This lot particular lot consisted of the removal of a 5-10cm -layer of silty clay loam that covered Feature 28. This soil was burned. After removing the matrix, I found some roughly cut stones at the center of the feature. These stones appeared to be irregular in shape and were placed one on top of the other. The stones were resting on a cobbled surface that was not found outside Feature 28. The cobbles were small river cobbles. Some of these cobbles also showed evidence of being exposed to fire. The ending elevation of this lot was 160.4 cm below Datum 10B. I recovered ceramic sherds, some chert artifacts and freshwater shell.

Level 12b, Lot PL-B-397: This lot was placed to further explore inside Feature 28. I placed this lot at the middle of the feature, where the irregular stones were removed. I found some yellow clay, perhaps the remains of a floor. The yellow clay was highly disturbed. Apparently, the stones placed at the middle of the feature were part of the foundation wall of Feature 28 (the southwestern section). This means that Feature 28 was dismantled and the stones were intentionally placed inside the oval feature. The fact that I recorded burned soil and cobbles, an intentional dismantling of the feature and two limestone that were placed just outside of the feature suggested that Feature 28 was subject of a termination ritual. I recorded pottery, chert and freshwater shell.

Level 13, Lot PL-B-400: This lot was below the cobbled surface of Feature 28. The matrix consisted of silty clay loam. It was compact and brown-gray in color, although it was darker than the matrix outside of Feature 28. Tiny pieces of charcoal were mixed with the matrix. Beneath of this soil, I recorded small stones made of limestone, which formed an uneven surface. The ending elevation of this lot was 168.2 cm below Datum 10B. Few cultural materials were uncovered, including pottery, chert and

freshwater shell.

Level 14, Lot PL-B-404: This lot was below the second cobbled surface inside Feature 28. The matrix was similar to the previous level, although the color started being lighter. I closed this lot when I exposed a level made of tamped marl. I also exposed a stone buried in this tamped marl surface. The ending elevation of this lot was 184.2 cm below Datum 10B. Cultural materials included some pieces of ceramic sherds, two pieces of chert and a figurine fragment.

Level 15, Lot PL-B-405: This lot was beneath the tamped marl surface inside Feature 28. The matrix consisted of fill made of marl and clay. Soft limestone pebbles were also present. The matrix was compact and whitish brown in color. At the southern edge of the excavation unit, I found some stones that were part of an alignment. Nevertheless, because of the small dimensions of the unit, I could not fully explore it. It was interesting that the matrix inside Feature 28 (Lots PL-B-397, PL-B-404, and PL-B-405) was completely different to the matrix recorded outside Features 27 and 28. I closed the lot arbitrarily because of the constriction of space. The ending elevation was 191 cm below Datum 10B. I recovered pottery, chert and freshwater shell.

EXCAVATION UNIT CHP-PB-PU-29

This 3m x 3m excavation unit was opened to explore the southwest section of Plaza B and determine the presence or absence of Kanluk architecture. This unit was placed immediately west of EU CHP-PB-PU-28 and was 2.03 m deep. In order to take elevations, I used Datum 10B.

Level 1, Lot PL-B-220: This lot corresponded to the removal of the humic soil mixed with small and medium stones. The beginning elevation was 27.8 cm below Datum 10B. Some cut stones collapsed from Structure B-5 were also removed. Below the humus layer, I exposed a brown/gray soil mixed with small stones that could represent the remains of a stucco floor. Nevertheless, this layer was intermixed with humus and, therefore, it was considered as part of Level 1. I closed this lot when I exposed Floor 4, a plaster surface. The ending elevation was 74.4 cm below Datum 10B. Cultural materials recovered included ceramic sherds, artifacts made of chert, cobble, and obsidian, as well as fauna remains.

Level 2, Lot PL-B-236: This lot was below Floor 4. The matrix consisted of plaster and ballast. It was light brown in color and compact. I closed the lot when we exposed Floor 5, a plaster surface in regular condition. Stucco was present but there were areas in the excavation unit where only ballast was visible. The ending elevation of this lot was 90 cm below Datum 10B. I only recovered pottery and chert.

Level 3, Lot PL-B-239: This lot was beneath Floor 5. The matrix consisted of stucco and a small layer of ballast. It was whitish brown and compact. Some roots were found mixed with the matrix. I ended the lot when Floor 6, a fairly preserved stucco floor, was exposed. Because Floor 5 and Floor 6 were too closed together (just a few centimeters apart), I concluded that Floor 5 was a resurface of Floor 6. The ending elevation of this lot was 92 cm below Datum 10B. I recovered pottery, chert and freshwater shell.

Level 4, Lot PL-B-244: This lot was beneath Floor 6. The matrix consisted of plaster and ballast. After removing the matrix, I exposed Floor 7, a plaster surface that

was badly preserved. Based on the short distance between Floor 7 and Floor 6, I concluded that Floor 6 was a resurface of Floor 7. The ending elevation was 94.6 cm below Datum 10B. I uncovered ceramic sherds, chert artifacts and debitage and a mano made of cobble.

Level 5, Lot PL-B-248: This lot corresponded to the level below Floor 7, a badly preserved stucco floor. The matrix consisted of ballast. I closed the lot when I uncovered Floor 8. Due to the fact that Floors 5 through 8 were only a few centimeters apart, I conclude that they were part of the same construction event. The ending elevation of this lot was 97.8 cm below Datum 10B. I found pottery, chert and freshwater shell.

Level 6, Lot PL-B-252: This lot was below Floor 8. The matrix consisted of plaster and ballast. It was gray in color and compact. I closed the lot when we uncovered Floor 9. The ending elevation was 100.8 cm below Datum 10B. Cultural materials were scarce in this level. I only recovered pottery and chert.

Level 7, Lot PL-B-253: This lot was below Floor 9. The matrix was again plaster and ballast. It was light brown in color and compact. I closed the lot when I uncovered Floor 10. The ending elevation was 110.8 cm below Datum 10B. Cultural materials included pottery and chert.

Level 8, Lot PL-B-254: This lot was below Floor 10. The matrix consisted of plaster and ballast. It was light brown in color and compact. After removing the matrix, I exposed Floor 10b. Floor 10 seemed to be a resurface of Floor 10b. This plaster floor was found 114 cm below Datum 10B. I found pottery, chert and slate.

Level 9, Lot PL-B-257: This lot is beneath Floor 10b. After removing the plaster, I uncovered the cobbled surface recorded in EU CHP-PB-PU-28 (Feature 25), as well as

the plaster surface named Floor 11. Floor 11 was well preserved but not polished. At EU CHP-PB-PU-29, I exposed the northwestern corner of Feature 25. I observe that Feature 25 and Floor 11 were both associated—the same as Feature 11 and Floor 11 discovered during the 2012 field season. Because Feature 25 was at the same level than Feature 11, I suggested that they could be the same feature but they seemed to be too far apart. The ending elevation of this lot was 121.2 cm below Datum 10B, at the level of Feature 25 and Floor 11. I recovered ceramic sherds, chert artifacts and debitage, freshwater shell, marine shell, obsidian, cobble, serpentine, quartz and a ceramic spindle whorl.

Level 10, Lot PL-B-259: This lot was below Floor 11 and outside Feature 25. The lot was similar to PL-B-151. The matrix consisted of silty clay loam, which was brown-gray in color. The matrix was compact when was dry and sticky when it was wet. At the northwestern corner of the excavation unit, I observed a small concentration of cobbles that was below Floor 11. A similar concentration in Lot PL-B-251 was called Feature 30. I closed the lot when we uncovered Floor 12, a tamped earthen surface with small and soft limestone stones. Floor 12 was discovered at 134.4 cm below Datum 10B. I found ceramic sherds, chert artifacts, marine shell and a microdrill made of chert.

Level 11, Lot PL-B-261: This lot was below Floor 12. The matrix consisted of silty clay loam. It was compact, sticky and brown-gray in color. After removing Floor 12 and a thin layer of fill, I exposed the northeastern corner of Feature 27. This feature consisted of a rectangular platform made of, at least, two courses of cut stones. The eastern limit of Feature 27 ran beneath Feature 25. At this moment of the excavation, I divided this level in two contexts: inside and outside Feature 27. Cultural materials in this lot included pottery, chert, freshwater shell, marine shell and a figurine fragment.

Level 11, Lot PL-B-264: This lot was below Floor 12 and inside Feature 27. The matrix consisted of fill, made of silty clay loam. It was brown-gray in color, sticky and compact. After removing the fill, I exposed the floor surface of Feature 27, which was made of tamped earth mixed with marl. The ending elevation of this lot was 166 cm below Datum 10B. Materials included pottery, chert, freshwater shell, marine shell, three microdrills made of chert and two figurine fragments.

Level 11, Lot PL-B-265: This lot was below Floor 12 and outside Feature 27. The matrix was silty clay loam, brown-gray in color and compact. At the northern limit of the excavation unit, I exposed a possible deposit of pottery, consisting of fragments of a dish and jar. These vessel fragments were placed on top of the patio surface of Feature 27. Feature 27 can be described as a rectangular platform made of, at least, three courses of stones (approximately 32cm tall). Apparently, these stones were resting on a tamped earthen surface. The stones were well cut, rectangular in shape and approximately 30 cm in length. During the excavation of this lot, I exposed an alignment running east-west and facing north. This alignment named Feature 29 was located approximately 1.30 m south of the northern wall of Feature 27. The feature was not further explored. It could have been the original limit of Feature 27 or the foundation of a superstructure. The ending elevation of this lot was 142 cm below Datum 10B. Materials included pottery, chert, freshwater shell, marine shell, fauna remains, shell beads, chert microdrills, a ceramic spindle whorl and a figurine.

Level 12, Lot PL-B-349: This lot was below the patio floor of Feature 27. After removing the surface made of tamped marl and silty clay loam, I found the foundation of Feature 27. The matrix consisted of silty clay loam, which was dark gray in color. The

ending elevation of this lot was 163 cm below Datum 10B. This context was rich in materials. Ceramic sherds prevailed in the material assemblage. I also recovered chert artifacts and debitage, freshwater shell, marine shell, cobble, serpentine, quartz, fauna remains, ceramic spindle whorl, and figurine fragments.

Level 12, Lot PL-B-314: This lot was beneath Floor 13, the floor surface of Feature 27. It was opened to explore inside Feature 27. Feature 29 marked the southern limit of this excavation unit. The matrix consisted of silty clay loam. It was compact, sticky and brown-gray in color. After removing the matrix that was deposited as fill of Feature 27, I exposed a layer of tamped marl and large stones made of soft limestone. The dimensions of the stones ranged from 20 to 40 cm in length. These stones were apparently placed forming a circular feature and seemed to have been roughly cut. Nevertheless, they were facing in and out, so the possibility of being a platform was discarded. Rather, it was suggested that they could have worked as a retaining wall of the fill. I closed this lot once we exposed the tamped marl. The ending elevation of this lot was 139.8 cm below Datum B. I uncovered ceramic sherds, chert artifacts, freshwater shell, marine shells, and basalt.

Level 13, Lot PL-B-326: This lot was inside Feature 27. It consisted of a mixture of tamped marl and silty loam. Soft limestone stones ranging from 20 to 60 cm were also used as part of the fill. The matrix was mainly brown in color with gray spots because of the marl. There were also pockets of soil that was not mixed with marl. At the bottom of this level, there were pockets of soil that were darker in color, almost black. I ended this lot when this dark soil was no longer mixed with marl. The ending elevation was 173.8 cm below Datum 10B. Materials recovered included ceramic sherds, chert, freshwater

shell, and a figurine fragment.

Level 13b, Lot PL-B-336: This lot corresponded to fill inside Feature 27 and consisted of the dark brown soil placed beneath the fill made of tamped marl, silty loam, and soft limestone stones. It was separated from Lot PL-B-326 because the soft limestone stones and tamped marl were not present at all. The matrix had a high percentage of loam and the amount of clay increased as the test pit went deeper. The matrix also had sad inclusions. I ended this level arbitrarily, when the matrix became more compact and some inclusions of limestone appeared. The ending elevation was 209.2 cm below Datum 10B. Cultural materials included ceramic sherds, chert artifacts, freshwater shell, fauna remains, basalt, cobble, slate, a figurine fragment and a macroblade made of chert from Colha.

Level 13c, Lot PL-B-345: This lot corresponded to fill inside Feature 27 and consisted of compact black loam with clay or paleosol. I ended this lot when we reached bedrock, which was located 231 cm below Datum 10B. The Few materials found consisted of pottery and chert.

EXCAVATION UNIT CHP-PB-PU-30

This excavation unit measured 2.80 m x 1.80 m and reached a deepness of 76.2 m deep. The excavation unit was placed immediately north of EU CHP-PB-PU-24 and was opened to search for Feature 11—the cobbled-floor platform exposed during the 2012 field season. In order to take elevation, I used Datum 10.

Level 1, Lot PL-B-250: The beginning elevation of this lot was 31.4 cm below Datum 10 and corresponded to the removal of the humus—dark brown soil mixed with

small and medium stones. I ended this level when we exposed Floor 3, which was badly preserved. Only the ballast was visible throughout the excavation unit, although some areas still kept the plaster. The ending elevation was 52.4 cm below Datum 10. I recovered ceramic sherds, chert and quartz.

Level 2, Lot PL-B-258: This lot was the ballast of Floor 3. The matrix consisted of ballast mixed with humus. It was light brown in color and loose. I ended this lot when I exposed Floor 4, which was a fairly well preserved stucco floor except for some disturbance that was caused by roots. Floor 4 was found 74.4 cm below Datum 10. I only recovered ceramic sherds and chert debitage.

Level 3, Lot PL-B-262: This lot was below Floor 4. The matrix consisted of plaster followed by a thin layer of fill. It was light gray in color and compact. After removing this matrix, I exposed Floor 5. This was a plaster surface that was moderately preserved, although in some areas the plaster was not present. Floor 5 was also slightly disturbed by roots. The ending elevation was 76.8 cm below Datum 10. The short distance between Floors 4 and 5 confirmed the idea that Floor 4 was a resurface of Floor 5. Few materials were recovered during the excavation of this lot, including four ceramic sherds and one single piece of chert.

Level 4, Lot PL-B-263: This lot was beneath Floor 5. The matrix consisted of plaster, ballast and a thin layer of fill. This fill was placed on top of Floor 6, the next plaster floor in the sequence. This stucco floor was well preserved except in some areas where it was disturbed by roots. The fact that Floors 5 and 6 were separated by fill suggested that Floors 4/5 and Floor 6 belonged to different moments of construction. Nevertheless, Floors 5 and 6 were found closed together in EU CHP-PB-PU-29, which

lead us to think that the construction of Floor 5 meant a change in the inclination of the plaza. Floor 5 sloped eastwards, perhaps to facilitate the drainage of water. The ending elevation of this lot was 84 cm below Datum 10. I recorded ceramic sherds, one piece of chert and one banana tool made of cobble.

Level 5, Lot PL-B-266: This lot was below Floor 6. The matrix consisted exclusively of plaster. I ended this lot when we exposed Floor 7, another stucco floor that was well preserved. The ending elevation of this lot was 90.8 cm below Datum 10. I only recovered one piece of pottery, another one of chert and a piece of quartz.

Level 6, Lot PL-B-267: This lot corresponded to the level below Floor 7. The matrix consisted of plaster and was light brown in color and compact. Apparently, Floor 7 was a resurface of Floor 8, the stucco surface that marked the end of this context. The ending elevation of this level was 94.6 cm below Datum 10. I only recorded four pieces of chert.

Level 7, Lot PL-B-272: This lot was below Floor 8. The matrix consisted of plaster, which was 1 cm thick at the eastern side of the excavation unit reaching 3 cm at the western section. Floor 8 was a resurface of Floor 9, a stucco floor that was not well preserved. The ending elevation of this lot was 97.4 cm below Datum 10. I only recovered a few pieces of pottery and chert.

Level 8, Lot PL-B-273: This lot was beneath Floor 9. The matrix was once again plaster. The lot ended when Floor 10 was exposed. The short distance between Floors 9 and 10 suggested that Floor 9 was another resurface event. The ending elevation of this lot was 100 cm below Datum 10. During the excavation of this context we found pottery, chert, freshwater shell and quartz, but the amount of each material was small.

Level 9, Lot PL-B-275: This lot was beneath Floor 10. The matrix was plaster. Apparently, Floor 10 was also a resurface of Floor 10b, which was found at 103.6 cm below Datum 10. I only recovered one piece of chert.

Level 10, Lot PL-B-277: This lot corresponded to the excavation below Floor 10b, a well preserved and smooth stucco floor. The matrix consisted of plaster and a thin layer of ballast. After removing the matrix, we uncovered a cobbled-floor platform (perhaps Feature 11). The cobbles were placed really tight together and their dimensions were irregular as their shape. Floor 11 was not found in this excavation unit. The ending elevation of this level was 107.6 below Datum 10. I recovered pottery and chert.

EXCAVATION UNIT CHP-PB-PU-31

This excavation unit measured 3 m x 2.5 m and was placed 6m west of EU CHP-PB-PU-25. This test pit was 2.54 m deep. I opened this unit to further explore Feature 25 and locate an area where to excavate a test pit inside this cobbled-floor platform. In order to take elevations, I used Datum 10B (1.30 m below Datum 5A) and Datum 11 (same than Datum 5A).

Level 1, Lot PL-B-256: This lot corresponded to the removal of humus—dark brown soil mixed with small and medium stones. The beginning elevation was 26.2 cm below Datum 10C. After removing the humus, I uncovered a few stones collapsed from Structure B-5. At the southern edge of the excavation unit, I discovered the northern limit of this Classic building. I ended this lot when I exposed fill collapsed from Structure B-5 and the matrix changed to *sascab*. The ending elevation of this level was 135.2 cm below Datum 11. Cultural materials included pottery and chert.

Level 2, Lot PL-B-269: This lot started when architecture (second terrace of Structure B-5) appeared in the excavation unit. The matrix was heterogeneous. At the western and northeastern sections of the excavation unit, I exposed humus mixed with collapsed fill and cut stones. At the southeastern section, I uncovered *sascab* with small stones. After removing the matrix from the eastern section, I discovered the stairside outset. The western section of the stairside outset was not well preserved, as well as the northern limit. I believed that the *sascab* and small stones were part of the fill of the stairside outset. Both the stairside outset and the northern wall of Structure B-5 were resting on Floor 2, a stucco floor that was well preserved in this excavation unit. Floor 2 marked the end of this lot, at 184.5 cm below Datum 11. The few materials recovered included ceramic sherds and a single piece of chert.

Because of the presence of the stairside outset, the following levels were excavated only at the western half of EU CHP-PB-PU-31 and along with the eastern half of EU CHP-PB-PU-33. This unit was named EU CHP-PB-PU-33b and measured 3 m x 2.50 m (see below for the description of this excavation unit).

Level 9, Lot PL-B-317: Once Feature 25 was exposed, I decided to place a test pit to explore inside and beneath this cobbled feature. This test pit measured 2 m x 1.50 m. The beginning elevation of this lot was 116.2 cm below Datum 10B. After removing the stones that integrated Feature 25, I removed fill made of clay loam. This matrix was brown-gray in color and semicompact. I ended this lot when I reached a surface made of tamped earth mixed with marl or *sascab*. This surface was named Floor 12 and extended into EU CHP-PB-PU-28, EU CHP-PB-PU-29, and EU CHP-PB-PU-34. Floor 12 was found at 125.6 cm below Datum 10B. Cultural materials included pottery, chert,

freshwater shell, and fauna remains.

Level 10, Lot PL-B-319: This lot was below Floor 12. Matrix was clay loam, which was brown-clay in color and semicompact. I ended this lot when I exposed Floor 13, a tamped earthen surface. This floor was almost at the same level than the surface of Feature 27. Nevertheless, the presence of Floor 13 in this area was odd because it was outside Feature 27. I also noticed that Feature 29—alignment running east-west and facing north that was found at EU CHP-PB-PU-29—did not extend into this area. The ending elevation of this lot was 134.2 cm below Datum 10B. I recovered pottery, chert, freshwater shell and a mano made of granite.

Level 11, Lot PL-B-322: This lot was beneath Floor 13. Matrix was silty clay loam, brown-gray in color and compact in consistency. This soil was used as fill. At the bottom of this lot, I found a possible floor made of tamped marl that was named Floor 14. Beneath this surface some cobbles were found. At the northern edge of this unit, I also found a couple of stones resting directly on the tamped marl surface. I could not determine if these stones were the remains of a structure or stones used as fill. Floor 14 marked the end of this lot. It was found at 164.4 cm below Datum 10B. Cultural materials included large amount of ceramic sherds, chert, freshwater shell, marine shell, fauna remains, slate and a cobble.

Level 12, Lot PL-B-331: This lot corresponded to the level beneath Floor 14. Matrix was clay-loam, brown-gray in color and compact. The lot was divided arbitrarily into three sections, each of them measuring 30 cm deep. At 190 cm below Datum 10B (approximately at the bottom of the second section) and at the northern edge of the excavation unit, I found some small stones. Their presence was odd because stones were

not usually used as part of the fill. In the third section of this lot, I recorded tiny pieces of charcoal mixed with the matrix. I closed the lot when we exposed bedrock. The bedrock was flat and it was modified cutting a straight edge and adding a couple of roughly cut stones to mark the limit of a step. The modified bedrock, named Feature 34, could have been the surface of a domestic structure. The bedrock was found at 250.6 cm below Datum 10B. This context provided a variety of cultural materials. Pottery prevailed in the assemblage. I also found chert artifacts, obsidian prismatic blade, freshwater shells, marine shells, fauna and human remains, figurine fragments, an ocarina, a ceramic tejo, a ceramic spindle whorl, shell beads, a banana-shaped smoother made of cobble, granite, and quartz.

EXCAVATION UNIT CHP-PB-PU-32

This excavation unit measured 3 m x 3 m and was placed 6m immediately west of EU CHP-PB-PU-29. In order to take elevations, I used Datum 10B. This excavation unit was 1.72 m deep.

Level 1, Lot PL-B-268: This lot consisted of the removal of humus. Its beginning elevation was 22.6 cm below Datum 10B. The matrix was dark brown soil mixed with small and medium stones. I closed the lot when we reached the ballast of Floor 2. The ending elevation of this lot was 54 cm below Datum 10B. The materials included pottery and chert.

Level 2, Lot PL-B-271: This lot was opened to explore the ballast of Floor 2. The matrix consisted of ballast made of silty loam with small stones. It was light brown in color and loose. There was also presence of roots. I ended this lot when I uncovered Floor

4, a well preserved and smooth stucco floor. Apparently, Floor 3 was only found in a particular area close to Structure B-5. The ending elevation of this lot was 78.8 cm below Datum 10B. I recovered pottery, chert, freshwater shell, granite and cobble.

Level 3, Lot PL-B-279: This lot was beneath Floor 4. The matrix consisted of plaster and ballast. It was light gray in color and compact. I ended when I uncovered Floor 5. This plaster floor was well preserved, except in some areas where only its ballast was found. The ending elevation of this lot was 88.8 cm below Datum 10B. Based on this elevation, I observed that there were approximately 10 cm of ballast separating Floors 4 and 5, which was different from the eastern area where Floors 4 and 5 were too closed together. I found ceramic sherds and chert.

Level 4, Lot PL-B-288: This lot was below Floor 5. The matrix consisted of plaster and ballast. It was light gray and compact. I closed the lot when we exposed Floor 6. This plaster floor was poorly preserved. Plaster was present in small areas across the unit. Floor 6 was found 93 cm below Datum 10B. Cultural materials included pottery, chert and quartz.

Level 5, Lot PL-B-290: This lot corresponded to the level below Floor 6. The matrix was plaster, light gray in color and compact. I ended this lot when we exposed Floor 7, a badly preserved stucco floor. In some areas, Floor 7 did not preserved at all and Floor 8 was exposed. In fact, Floors 6, 7 and 8 were too closed together that was difficult to distinguish among them. The ending elevation was 98.4 cm below Datum 10B. No materials were found in this context.

Level 6, Lot PL-B-291: This lot was below Floor 7. The matrix consisted of ballast. It was light gray in color and compact. I ended this lot when Floor 8 was

completely exposed. The ending elevation of this lot was 102 cm below Datum 10B. I recovered few artifacts including pottery and chert.

Level 7, Lot PL-B-294: This lot corresponded to the level below Floor 8. The matrix was plaster and ballast. It was light gray in color and compact. This lot ended when Floor 9 was uncovered. Floor 9 was found at 110.6 cm below Datum 10B. I uncovered pottery and chert.

Level 8, Lot PL-B-295: This lot was below Floor 9. The matrix consisted of plaster and ballast. It was light gray in color and compact. I uncovered Floor 10 but at the southeastern corner of the excavation unit another stucco floor was partially covering Floor 10. I ended this when Floor 10 was completely exposed, at 117 cm below Datum 10B. I found pottery and chert.

Level 9, Lot PL-B-297: This lot was beneath Floor 10. The matrix was plaster, which was light gray in color and compact. I closed the lot when we exposed Floor 11, stucco floor associated to Feature 25. The ending elevation of this lot was 125 cm below Datum 10B. The few materials recovered consisted of pottery and chert.

Level 10, Lot PL-B-298: This lot was below Floor 11, plaster floor associated with Feature 25, the cobbled platform. The matrix was plaster followed by silty clay loam. It was gray in color and compact. Some pebbles were mixed with the matrix. I ended the lot when we reached Floor 13, the surface of Feature 27, at 137.4 cm below Datum 10B. Cultural materials recovered included pottery, chert, freshwater shell, marine shell, slate and quartz.

Level 10, Lot PL-B-301: This lot was below Floor 11 (at the level of Floor 13) and outside Feature 27. The matrix consisted of silty clay loam mixed with some pebbles.

It was brown-gray in color and compact. I ended when we reached the patio surface of Feature 27. The ending elevation of this lot was 165.2 cm below Datum 10B. Cultural materials included ceramic sherds, chert artifacts, freshwater shell, marine shell, quartz, fauna remains, slate and shell beads.

Level 11, Lot PL-B-383 and PL-B-385: These lots consisted of the exploration below the patio surface of Feature 27. They were opened in order to uncover the foundation of Feature 27 that was covered when the patio floor was constructed. This construction technique was different from construction techniques practiced in the Belize Valley in later times. In the Belize Valley, building foundations were placed on top of a floor. This raised the possibility that Feature 27 was originally four courses high. Later, the foundation was covered when the patio floor was built. The matrix consisted of silty clay loam mixed with some pebbles. It was brown-gray in color and compact. Both lots ended arbitrarily. PL-B-183 was closed at 181.8 cm below Datum 10B when the foundation of Feature 27 was uncovered, while PL-B-185 was ended at 195 cm below Datum 10B. PL-B-185 was excavated deeper to explore whether there was another course of stone beneath the foundation of Feature 27. No stone was found below Feature 27 base. I recovered ceramic sherds, chert, freshwater shell, marine shell, fauna remains, basalt, one chert drill, one shell bead, one ceramic artifact, and one banana-shaped smoother made of cobble.

EXCAVATION UNIT CHP-PB-PU-33

This excavation unit measured 3 m x 2.50 m and was placed immediately west of EU CHP-PB-PU-31. In order to take elevations of this excavation unit, I used Datum 11.

Including EU CHP-PB-PU-33b, this excavation unit was 2.30 m deep.

Level 1, Lot PL-B-270: The beginning elevation of this lot was 81 cm below Datum 11. This lot consisted of the removal of humus and some backdirt found at the eastern section of the excavation unit. Therefore, the matrix was heterogeneous. The humus was dark brown in color and was mixed with small and medium stones. There were not cut stones. Backdirt consisted mainly on boulders and fill and was likely placed by Joe Ball, who partially explored Str. B-5 during 1980s and 1990s. It ended when we exposed the northern limit of Structure B-5, collapsed fill and Floor 2. The collapsed fill was only recorded at the western section of the unit, while Floor 2 was exposed at the eastern section after removing the backdirt. The ending elevation was 152.6 cm below Datum 11. I uncovered ceramic sherds and a single piece of chert.

Level 2, Lot PL-B-276: This lot corresponded to the removal of the collapsed fill found at the western section of the excavation unit. The matrix was once again heterogeneous. Close to the northern wall of Structure B-5, I recorded light brown soil with small and medium stones. Soil was semi-compact and mixed with mortar. At the northwestern section of the excavation unit, I found humus. Collapsed cut stones were recorded at this section. The dimensions of these cut stones varied. Some stones were 10 cm -20 cm in length and I think that they collapsed from the stairside outset. Other stones measured between 30 cm to 60 cm and it is possible that they came from the upper rooms of Structure B-5. During the process of excavation of this lot, I studied the western baulk of the adjacent EU CHP-PB-PU-29 and observed the presence of a stucco floor covering Floor 2 that was identified as Floor 1. Floor 1 has been associated with the Classic Structure B-5. Floor 1 was exposed at Lot PL-B-276 and it merged with Floor 2

northwards. This lot was closed at 185 cm below Datum 11, when Floor 1 and Floor 2 were completely exposed. I uncovered ceramic sherds and a single piece of chert.

EXCAVATION UNIT CHP-PB-PU-33b

Because of the presence of the stair-side outset at EU CH-PB-PU-31 and Floor 1 at EU CHP-PB-PU-33, I decided that the following levels would be excavated only at the western half of EU CHP-PB-PU-31 and the eastern half of EU CHP-PB-PU-33. This excavation unit was named CHP-PB-PU-33b and measured 3 m x 1.90 m. In order to take elevations, I used Datum 10B.

Level 3, Lot PL-B-280: This lot started at 36.6 cm below Datum 10B and was below Floor 2, a well preserved stucco floor. After removing the plaster and ballast of Floor 2, we exposed a dry fill made of boulders ranging from 30 to 60 cm in length. The dry fill expanded 1.40 m westwards from the stairside outset. The presence of this dry fill was odd because it was not present in other sections of Plaza B. I ended this lot when we uncovered Floor 4, a well preserved stucco floor that was found at 67.2 cm below Datum 10B. Cultural materials recovered in this lot included pottery, chert, freshwater shell, a shell bead and a banana-shaped smoother made of cobble.

Level 4, Lot PL-B-283: This lot was below Floor 4, a thick and compact stucco floor. Matrix consisted of plaster and ballast. I ended when we exposed Floor 5. Floors 4 and 5 were separated by at least 15 cm of ballast suggesting that they corresponded to different moments of construction and they merged in other areas because the ancient Maya changed the slope of the plaza. The ending elevation was 84.3 cm below Datum 10B. I uncovered ceramic sherds, chert artifacts and freshwater shell.

Level 5, Lot PL-B-285: This lot was below Floor 5. Matrix was plaster and ballast. Because Floors 5, 6 and 7 were too close together, it was difficult to distinguish among them during the excavation process. Therefore, this lot ended when we exposed Floor 8. This stucco floor was located at 102.4 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell and marine shell.

Level 6, Lot PL-B-286: This lot was beneath Floor 8. Matrix was plaster and ballast. Floors 8 and 9 were both too close together. It was difficult to distinguish between them. Even Floor 10 was only 2 cm beneath Floor 8 suggesting that Floors 8, 9 and 10 were part of the same moment of construction. I ended the lot when we exposed Floor 10. The ending elevation being 104.6 cm below Datum 10B. I only uncovered pottery and chert.

Level 7, Lot PL-B-289: This lot was below Floor 10. Matrix consisted of plaster, ballast and fill. I ended the lot when we exposed the eastern limit of Feature 25 and Floor 11. The ending elevation was 116.2 cm below Datum 10B. Cultural materials included pottery and chert.

Level 8, Lot PL-B-292: This lot was below Floor 11 and outside Feature 25. It was opened in order to expose Feature 27. Matrix was silty clay loam with small stones. It was brown-gray in color and compact. I closed the lot when we reached the surface of Feature 27—the rectangular platform. The ending elevation of this lot was 137.4 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell, obsidian and a cobble.

Excavation Unit CHP-PB-PU-33c

This 1.90 m x 1.90 m excavation unit was located at the eastern half of EU CHP-PB-PU-33, including 40 cm of EU CHP-PB-PU-34. The datum used to take elevations was Datum 10B.

Level 3, Lot PL-B-296: This lot started at 36 cm below Datum 10B and was below Floors 1 and 2. Floor 1 was associated with Classic Structure B-5, whose foundation rested on Floor 2. Floor 1 did not extend southwards but merged with Floor 2. The matrix consisted of plaster, ballast and fill. I ended this lot when Floor 4 was exposed. This smooth and white stucco surface was well preserved, except at the center of the excavation where it appeared broken. The ending elevation was 69.4 cm below Datum 10B. Cultural materials included pottery, chert, shell bead and cobble.

Level 4, Lot PL-B-300: This lot was below Floor 4. The matrix was plaster and ballast. Some medium stones were also present. I ended the lot when we exposed Floor 5, a badly preserved stucco. The ending elevation was 83 cm below Datum 10B. Cultural materials were scarce and included pottery, chert and granite.

Level 5, Lot PL-B-302: This lot was beneath Floor 5. The matrix included plaster and ballast. I closed the lot when Floor 6 was exposed at 92.6 cm below Datum 10B. Cultural materials included pottery, chert, and freshwater shell.

Level 6: This level was below Floor 6 and ended when Floor 7 was found. The matrix consisted of plaster and ballast. The ending elevation was 94.6 cm below Datum 10B. There were not cultural materials in this context.

Level 7, Lot PL-B-303: This lot corresponded to the level below Floor 7. The matrix was plaster and ballast. I ended the lot when Floor 8 was found at 100.2 cm below

Datum 10B. Cultural materials included pottery, chert and obsidian.

Level 8, Lot PL-B-304: This lot was beneath Floor 8. Matrix was plaster and ballast. I ended the lot when Floor 10 was uncovered at 103.6 cm below Datum 10B. Cultural materials included pottery, chert and obsidian.

Level 9, Lot PL-B-307: This lot was beneath Floor 10. The matrix was plaster and ballast. I ended the lot when Floor 10b was uncovered at 110.2 cm below Datum 10B. Cultural materials included pottery, chert and obsidian.

Level 10, PL-B-308: This lot was beneath Floor 10b. The matrix consisted of plaster and ballast. I closed the lot when Floor 11, the plaster floor associated with Feature 25, was uncovered. The ending elevation was 114 cm below Datum 10B. Cultural materials included pottery, and chert.

Level 11, Lot PL-B-310: This lot was below Floor 11. The matrix was plaster and ballast. I ended the lot when we exposed Floor 12. Floor 12 seemed to be a plaster floor rather than a tamped earthen surface as I suggested above. The ending elevation was 123.8 cm below Datum 10B. Cultural materials included pottery, and chert.

Level 12, Lot PL-B-311: This lot was below Floor 12. The matrix consisted of silty clay loam mixed with a few small stones. It was brown-gray in color and compact. I ended the lot when we exposed Floor 13 associated with Feature 27. The ending elevation of this lot was 140.6 cm below Datum 10B. Cultural materials included pottery, chert, granite and freshwater shell.

Level 13, Lot PL-B-312: This lot was below Floor 13. After removing the top surface of Feature 27, I uncovered an alignment running east-west and facing north. This alignment was called Feature 29. This feature could have functioned as the original

northern limit of Feature 27 or could have been the foundation of a superstructure. The matrix was silty clay loam, brown-gray in color and compact. I ended this lot arbitrarily at 171.4 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell, fauna remains, a limestone disc, a figurine fragment and a spindle whorl.

EXCAVATION UNIT CHP-PB-PU-34

This 3 m x 2.50 m excavation unit was located immediately west of EU CHP-PB-PU-33. I used Datum 11 to take elevations. This excavation unit was 1.07 m deep.

Level 1, Lot PL-B-281: This lot started at 66.4 cm below Datum 11 and consisted of the removal of humus. I found collapsed stones mixed with the matrix, along with small and medium stones. I ended this lot when we found collapsed fill consisting of *sascab* mixed with humus. I observed the northern wall of Structure B-5 and what appeared to be an outset. The ending elevation of this lot was 112.2 cm below Datum 11. Cultural materials included pottery, chert and a mano made of granite.

Level 2, Lot PL-B-284: This lot consisted of collapsed fill outside Structure B-5. The matrix was light brown in color mixed with small, medium and cut stones. I ended this lot when we exposed Floor 1 and Floor 2. These floors were too close together and merged northwards. At the southern edge of the excavation unit, I exposed the northern wall of Structure B-5, whose foundation rested directly on Floor 2. I also exposed a later modification of Structure B-5. At some point during the Late Classic, an outset wall was added to the original northern wall. This addition extended at least 8 m west. The ending elevation of this lot was 173.8 cm below Datum 11. Cultural materials included pottery and chert.

EXCAVATION UNIT CHP-PB-PU-35

This excavation unit measured 3 m x 3 m and was placed immediately west of EU CHP-PB-PU-26. This unit was highly disturbed by the presence of large roots. In order to take elevations of this excavation unit, I used Datum 10C (1.30 m below Datum 5A). This excavation unit was 1.93 m deep.

Level 1, Lot PL-B-309: The beginning elevation of this lot was 38.4 cm below Datum 10C. This lot consisted of humus—dark brown soil mixed with small and medium stones. I found Floor 2 only at the northern section of this unit. Because it was intermingled with the humic soil, Floor 2 was considered as part of the humic level. The matrix also presented bioturbation—a root was present at the middle of the excavation unit. In addition, a nail and a piece of plastic were found mixed with the soil. This suggested some modern disturbance. I ended the lot when we exposed Floor 4, a stucco floor that was not well preserved because it was disturbed by several roots. The ending elevation of this lot was 75.8 cm below Datum 10C. Cultural materials included pottery, chert, granite, obsidian, and quartz.

Level 2, Lot PL-B-315: This lot was below Floor 4. The matrix was plaster. Floors 4, 5 and 6 were too closed together that it was not possible to distinguish among them. I closed the lot when Floor 7, another stucco floor, was exposed. The ending elevation was 89 cm below Datum 10C. I recovered pottery, chert, freshwater shell, charcoal and a ceramic spindle whorl.

Level 3, Lot PL-B-323: This lot was below Floor 7. The matrix consisted of plaster. I ended this lot when we exposed Floor 8, which was disturbed by roots. The ending elevation was 94 cm below Datum 10C. I only recovered pottery and chert.

Level 4, Lot PL-B-328: This lot was below Floor 8. The matrix was plaster, ballast and fill. It was light brown in color and semi-compact. A large root was present in the middle of the unit. I ended this lot when Floor 9 was exposed at 100.4 cm below Datum 10C. Cultural materials included pottery, chert, freshwater shell, and fauna remains.

Level 5, Lot PL-B-341: This lot was below Floor 9. The matrix was plaster. I ended this lot when we reached Floor 10. The ending elevation was 107.4 cm below Datum 10C. Cultural materials included pottery, chert, and freshwater shell.

Level 6, Lot PL-B-343: This lot was beneath Floor 10. The matrix consisted of plaster and ballast. I ended the lot when we reached Floor 10b, which was found at 110.8 cm below Datum C. Cultural materials recovered included pottery, chert and freshwater shell.

Level 7, Lot PL-B-347: This lot was below Floor 10b. After removing the plaster, I found a cobbled concentration that was located at the southeastern section of the excavation unit. This feature was identified as Feature 25 and marked the end of the lot. The ending elevation was 112 cm below Datum 10C. Cultural materials included pottery, chert, freshwater shell and marine shell.

Level 7, Lot PL-B-348: This lot was a continuation of Lot PL-B-347. It corresponded to the level below Floor 10b but outside Feature 25. Matrix was plaster and fill. I ended the lot when we exposed another stucco floor that was designated Floor 11. This floor was disturbed by the presence of roots. The ending elevation of was 114.2 cm below Datum 10C. Cultural materials included pottery, chert, freshwater shell, marine shell and quartz.

Level 8, Lot PL-B-350: This lot was below Floor 11 and outside Feature 11. After removing the plaster and fill, I found another concentration of cobbles, which extended into EU CHP-PB-PU-26. The concentration of cobbles was identified as Feature 30. The cobbles that made of this feature were irregular with sharp edges, were placed leaving some distance among them and the surface that they made was not regular at all (it was sunken at the northern edge). These data suggests that Feature 30 was not a surface. I closed the lot at 127.4 cm below Datum 10C, at the level of the concentration of stones or Feature 30. I ended the lot to reduce the dimensions of the excavation unit. Cultural materials included pottery, chert, freshwater shell, marine shell, fauna remains, obsidian, shell beads, and chert microdrills.

Level 8, Lot PL-B-353: Lot PL-B-353 corresponded to a 2 m x 1.40 m excavation sub- unit located outside Features 25 and 30, as well as below the level of Feature 30. The matrix consisted of silty clay loam. It was brown-gray in color and highly compact. The patio surface of Feature 27 was not distinguished in this area. It could be because it did not extend into this section of the plaza. I closed the lot when we reached a paleosol level. The ending elevation was found at 206.4 cm below Datum 10C. I uncovered a large amount and variety of materials, although the amount of artifacts reduced as our excavations went deeper. Cultural materials unearthed included pottery, chert, granite, slate, obsidian, quartz, cobbles, chert microdrills, shell beads, freshwater shell, marine shell, fauna remains, figurine fragments, ocarina fragments, ceramic spindle whorl, charcoal.

Level 9, Lot PL-B-362: This lot corresponded to the excavation of the paleosol in the 2 m x 1.40 m excavation sub- unit. The matrix consisted of clay loam with sand

inclusions. It was dark brown in color, almost black, highly compact and sticky. The matrix was almost sterile in terms of cultural materials. I ended the lot when paleosol started to be mixed with soft limestone rocks. Some stones ranging from 20 to 30 cm in length were recorded at the southeastern corner of the excavation unit. This concentration of stones was associated with brown soil. Because these stones were found at the edge of the excavation unit, it was difficult to corroborate whether they were part of a sub-structure. The ending elevation of this lot was 219 cm below Datum 10C. I only recorded a few pieces of pottery, chert, freshwater shell, fauna remains and slate.

Level 10: This level corresponded to the excavation of the paleosol mixed with soft limestone rocks in the 2 m x 1.40 m excavation sub-unit. The matrix consisted of loam with a high amount of clay. Some small stones were mixed with the matrix as well as some pebbles. The matrix was black but as the excavation went deeper the color shifted to brown. It was highly compact and sticky. The soil came into conglomerations rather than dusty soil. I ended the lot when we found a marl level. The ending elevation of this level was 231.4 cm below Datum 10C. There were not materials in this context.

Level 8b, Lot PL-B-389: This lot was a 1.60 m x 0.50 m sub-unit placed at the southern section of the original 3 m by 3 m excavation unit. It corresponded to the area outside Feature 30 and below its level. This small sub-unit was opened to further explore Feature 28, a feature associated with the rectangular platform Feature 27. The matrix consisted of silty clay loam. It was brown-gray in color and highly compact. After removing the matrix, I found the northeastern corner of Feature 28, which was located at 173 cm below Datum 10C. This lot ended at the level of Feature 28. Cultural materials included pottery, chert, freshwater shell, marine shell, a microdrill and fauna remains.

Level 8b, Lot PL-B-390: This lot was below the actual Feature 30 in the 1.60 m x 0.50 m sub-unit. The matrix consisted of silty clay loam. It was brown-gray in color and highly compact. After removing the matrix, I exposed the eastern wall of Feature 28. The ending elevation was 163 cm below Datum 10C. Cultural materials included pottery, chert, fauna remains, freshwater shell, marine shell, shell beads, two limestone manos, chert microdrills, a figurine fragments, an ocarina fragment and a ceramic spindle whorl.

EXCAVATION UNIT CHP-PB-PU-36

This excavation unit measured 2 m x 2 m and was placed immediately north of EU CHP-PB-PU-26. In order to take elevations of this excavation unit, I used Datum 10A. This test pit was 0.73 m deep.

Level 1, Lot PL-B-305: The beginning elevation of this lot was 36.2 cm below Datum 10A. This lot consisted of humus—dark brown soil mixed with small and medium stones. I ended this lot when the ballast of Floor 2 was exposed. The ending elevation of this lot was 51.8 cm below Datum 10A. Cultural materials included pottery, chert, freshwater shell, quartz, obsidian, basalt, a chert small ball, and a figurine fragment.

Level 2, Lot PL-B-316: This lot corresponded to the ballast of Floor 2. This ballast was mixed with humic soil. The matrix was light brown in color and loose. I ended this lot when we reached Floor 4, a stucco floor that was not well preserved. In the eastern half of the excavation unit we recorded the plaster of the floor, but in the western section the plaster was almost completely gone. The ending elevation was 51 cm below Datum 10A. Cultural materials included pottery, chert, freshwater shell and quartz.

Level 3, Lot PL-B-318: This lot was below Floor 3. The level was highly disturbed by the presence of roots and, therefore, the stucco floors were in poor condition. The matrix was plaster. After removing the plaster of Floor 3, we exposed Floor 4, which was broken at the southwestern corner. In this section of the excavation unit, Floor 7 was visible. Floor 4 was rising up, perhaps as a result of a tree root. The ending elevation of this lot was 64 cm below Datum 10A. Cultural materials recovered included pottery, chert, and freshwater shell.

Level 4, Lot PL-B-321: This lot was below Floor 4. The matrix consisted of a thin layer of plaster. It was compact and light brown in color. I ended this lot when we exposed Floor 5, which was not well preserved. Remains of plaster of Floor 5 were found across the unit but in some sections I only recorded ballast. The ending elevation of this lot was 65 cm below Datum 10A. Cultural materials included pottery and chert.

Level 5, Lot PL-B-324: This lot was below Floor 5. The matrix consisted of plaster and ballast. I ended this lot when we exposed Floor 7, a stucco floor that was not well present because only its ballast was recorded. Floor 6 was only present at the northwestern corner of the excavation unit. The ending elevation of this lot was 67.8 cm below Datum 10A. Cultural materials included pottery and chert.

Level 6, Lot PL-B-327: This lot was below Floor 7. The matrix consisted of plaster. I ended the lot when we uncovered Floor 8, a stucco floor that was in good condition. The ending elevation of this lot was 72 cm below Datum 10A. The few materials recovered included pottery and chert.

Level 7, Lot PL-B-330: This lot was below Floor 8. The matrix was plaster. I close the lot when Floor 9 was exposed. Floor 8 and Floor 9 were too closed together.

They almost merged at the western section of the excavation unit. This is because Floor 8 was thicker at the eastern section of the excavation unit becoming thinner westwards. The ending elevation of this lot was 74 cm below Datum 10 A. The few cultural materials recovered included pottery and chert.

Level 8, Lot PL-B-332: This lot was below Floor 9. The matrix consisted of plaster and ballast, which was light brown in color and semi-compact. I ended the lot when we exposed Floor 10. At the southern limit of the excavation unit, I discovered two holes that were thought to be postholes. Floor 9 was thicker at the eastern section of the unit, almost merging with Floor 10. The ending elevation of this lot was 80.6 cm below Datum 10A. I recovered a few pieces of pottery and chert.

Level 9, Lot PL-B-335: This lot was below Floor 10. The matrix consisted of plaster ballast and fill. It was gray in color and compact. I ended the lot when Floor 10b was exposed. This plaster floor was poorly preserved. The ending elevation of this lot was 93.2 cm below Datum 10A. Cultural materials included pottery, chert, and freshwater shell.

Level 10, Lot PL-B-337: This lot was below Floor 10b. The matrix consisted of plaster. It was light brown and compact. I ended this lot when Floor 11 was exposed at 97.8 cm below Datum 10A. I uncovered some cut stones on top of Floor 11 that could be part of the possible circular structure recorded at EU CHP-PB-PU-26. However, only a few stones were found. If they were part of a structure this was dismantled in ancient times. Cultural materials included pottery and chert.

Level 11, Lot PL-B-339: This lot corresponded to the level below Floor 11. The matrix was plaster. I ended the lot when I exposed a concentration of angular cobbles that

perhaps worked as ballast of Floor 11. This concentration of cobbles was identified as Feature 30. The ending elevation was 100.6 cm below Datum 10A. Cultural materials included pottery, chert, freshwater shell, marine shell, and a chert microdrill.

Level 12, Lot PL-B-344: This lot was beneath Feature 30. After removing the stones, I found the Kanluk fill consisting of silty clay loam mixed with a few small stones. This matrix was brown-gray in color and compact. The ending elevation of this lot was 109.4 cm below Datum 10A, at the level of the patio surface of Feature 27. During the excavation of this context, I found a concentration of stones, as well as a concentration of freshwater shell and conch fragments. I uncovered a large amount and variety of materials. There were large amounts of pottery, freshwater shell, marine shell and microdrills. I also recovered chert, charcoal, fauna remains, obsidian, slate, quartz, a chert small ball, a banano made of cobble, ceramic artifacts, figurine fragments, and a shell bead.

EXCAVATION UNIT CHP-PB-PU-37

This excavation unit was placed immediately west of EU CHP-PB-PU-34. In order to take elevations of this excavation unit, I used Datum 10B. The excavation unit was irregular in shape. It measured 3 m in the east-west axis, 3.55 m in its northeastern side, and 2.80 m in its northwestern edge. This excavation unit was irregular because I used the consolidated northern wall of Structure B-5 as the southern edge of the excavation unit. The excavation unit was 1.38 m deep.

Level 1, Lot PL-B-306: The beginning elevation of this lot was 35.2 cm below Datum 10B. The matrix was heterogeneous. In most of the excavation unit, I recorded

humus—dark brown soil—mixed with small and medium stones. Near Structure B-5, I recorded a large amount of stones and loose soil that were interpreted as backdirt. Because of the backdirt, I reduced the dimensions of the excavation unit to 3 m x 2.50 m. Backdirt was still removed in order to determine whether there were constructions phases previous to the Classic Structure B-5. I ended the lot when we reached the ballast of Floor 2. Some remains of plaster were found at the western section of the excavation unit. The ending elevation of this lot was 49.8 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell, marine shell and obsidian.

Level 2, Lot PL-B-320: This lot corresponded to the exploration of the ballast of Floor 2. The matrix consisted of ballast made of sandy loam with small stones. It was brown in color and loose. At the southern baulk of the excavation unit, I observed the backfill of previous excavations, perhaps associated with the consolidation of Structure B-5. This old unit could have measured 2m (east-west) x 1 m (north-south) and followed the orientation of the Classic Structure B-5. Floor 2 and its ballast were clearly visible at this southern baulk. I ended this lot when we exposed Floor 4, a plastered surface that was well preserved. Floor 4 sloped down southwards and eastwards. The ending elevation of this lot was 80.2 cm below Datum 10B. Materials included pottery, chert, freshwater shell, quartz, limestone, slate, a chert small ball, chert drills and a ceramic spindle whorl.

Level 3, Lot PL-B-329: This lot was below Floor 4. The matrix was plaster. Beneath Floor 4, I exposed Floor 5, a stucco floor that was broken at the eastern section of the excavation unit. In this disturbed area, I observe Floor 6. Floor 5 was also damaged at the northwestern section of the excavation unit because the plaster was not present.

Floor 5 sloped down westwards. The ending elevation of this lot was 88.2 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shells, marine shells, basalt, and granite.

Level 4, Lot PL-B-333: This lot was below Floor 5. The matrix was plaster. I ended this lot when I exposed Floor 6, which was found at 93.8 cm below Datum 10B. After the cleaning of the backfill, I exposed the remains of a wall resting on Floor 6 that was named Feature 32. This wall consisted of two courses of finely cut stones, which ranged from 40 cm to 60 cm in length. Floors 5 and 4 could be contemporaneous to Feature 32. I think that this wall was dismantled when Floor 2 was built because the foundation of the Classic Structure B-5 rested on this dismantled wall. Cultural materials included pottery and chert.

Level 5, Lot PL-B-334: This lot was below Floor 6. The matrix consisted of plaster and ballast. This lot ended when we uncovered Floor 7, a stucco floor that was broken in several areas of the excavation unit. In those areas, Floor 8 was exposed. At the center of the unit, both Floor 7 and Floor 8 were mixed together. The ending elevation of this lot was 105.6 cm below Datum 10B. Cultural materials recovered in this lot included pottery, chert, freshwater shell, granite, quartz and cobble.

Level 6, Lot PL-B-338: This lot was beneath Floor 7. The matrix was plaster. The lot ended when we exposed Floor 8, which was found at 107 cm below Datum 10B. This is, Floor 7 and Floor 8 were really close together. Cultural materials recorded were pottery, chert, marine shell, freshwater shell, and quartz.

Level 7, Lot PL-B-340: This lot was below Floor 8. The matrix consisted of plaster. I ended the lot when Floor 9, a well preserved stucco floor, was exposed. The

ending elevation of this lot was 113.4 cm below Datum 10B. I only recovered pottery and chert artifacts.

Level 8, Lot PL-B-342: This lot corresponded to the level below Floor 9. The matrix consisted of plaster and ballast. I ended this lot when Floor 11 was exposed—the stucco floor associated with Feature 25. Floor 11 was well preserved, although in some areas it was broken. Floor 10 was not observed during the excavation of this unit. The ending elevation of this lot was 131 cm below Datum 10B. Cultural materials included pottery, chert, cobble and obsidian.

Level 9, Lot PL-B-346: This lot was below Floor 11 and ended when Floor 12 was exposed. Floor 10 and Floor 11 were close together suggesting resurface events. The matrix was plaster. The ending elevation was found at 132.5 cm below Datum 10B. I found pottery, chert, freshwater shell, quartz, and cobble during the excavation of this lot.

Level 10, Lot PL-B-351: This lot was beneath Floor 12. The matrix consisted of silty clay loam mixed with small stones. I ended this lot when we exposed the top surface of Feature 27, named Floor 13. The ending elevation of this lot was 134.4 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell, marine shell, obsidian, cobble, obsidian, basalt and a figurine fragment.

Level 10, Lot PL-B-352: This lot was beneath Floor 12 and outside Feature 27. The matrix was fill made of silty clay loam. After removing the matrix, I found two alignments running north-south. These alignments consisted of a single course of stones. These alignments were likely a double wall of an ancillary structure because one wall was facing east and the other one was facing west. Nevertheless, they could have been the eastern limit of a terrace that was added to the western section of Feature 27. The

interior alignment could have been the original eastern limit, while the exterior alignment could have been an expansion. This lot ended when exposed the patio surface of Feature 27. The ending elevation of this lot was 165.2 cm below Datum 10B. Cultural materials included large amount of pottery, chert, and freshwater shell. I also found marine shell, quartz, fauna remains, limestone, obsidian, serpentine, slate, cobble a ceramic artifact and shell beads.

Level 11, Lot PL-B-356: This lot was beneath Floor 13, the tamped earthen surface of Feature 27. It consisted of a small sub-unit inside Feature 27 (0.70 m x 0.60 m) that was opened to determine whether a rectangular stone that made of the northern limit of Feature 27 was a corner stone. Nevertheless, the evidence was negative. The matrix was silty clay loam, brown-gray in color and compact. The ending elevation was 158 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell and figurine fragments.

Level 11, Lot PL-B-391: This lot was beneath the patio surface of Feature 27 and inside the terrace. This is, it was opened west of the two alignments running north-south and facing east and west. The matrix was silty clay loam, brown-gray in color and compact. I ended this lot when the foundation stone of Feature 27 was exposed. I observed that the foundation of Feature 27 was covered by the patio surface. The ending elevation was 173 cm below Datum 10B. Cultural materials included large amount of ceramic sherds and freshwater shells, as well as chert and quartz.

Level 11, Lot PL-B-396: This lot was beneath the patio surface of Feature 27 and between the interior and exterior alignments that formed the eastern limit of a terrace attached to the rectangular platform. The matrix was silty clay loam, brown-gray in color

and compact. I ended the lot when the foundation stone of Feature 27 was exposed. I observed that both alignments were resting on the patio surface of Feature 27. The ending elevation of this lot was 173 cm below Datum 10B. Cultural materials included ceramic sherds, chert and freshwater shells.

EXCAVATION UNIT CHP-PB-PU-38

This excavation unit was placed immediately north of EU CHP-PB-PU-28 and west of EU CHP-PB-PU-35. It measured 1.50 m x 2 m and was 1.13 m deep. In order to take elevations, I used Datum 10C. The main objective of this excavation unit was to reach the Middle Preclassic contexts to explore Feature 28. This excavation unit was highly disturbed because the presence of a large root that intruded into different levels. This root showed evidence of having been exposed to fire.

Level 1, Lot PL-B-354: The beginning elevation of this lot was 39.6 cm below Datum 10C. The matrix consisted of humus—dark brown soil with small stones. I ended the lot when Floor 4 was exposed. This stucco floor was badly preserved. The ending elevation was 85.6 cm below Datum 10C. Cultural materials included pottery, chert, freshwater shell and quartz.

Level 2, Lot PL-B-360: This lot was beneath Floor 4. The matrix consisted of plaster and ballast. It was gray in color and compact. I ended the lot when we exposed Floor 5. This stucco floor was poorly preserved because of the presence of roots. In fact, it was only present at the eastern section of the excavation unit. The ending elevation was 94.8 cm below Datum 10C. I recovered pottery, chert, and cobble.

Level 3, Lot PL-B-363: This lot was beneath Floor 5. The matrix consisted of plaster. It was brown and compact. This level was highly disturbed. A large tree root intruded the floors. Due to the intense rains, the test pit got flooded several times. Because of this and because Floors 5 and 6 were too close together, it was not possible to distinguish between them during the excavation process. Nevertheless, they were visible in the northern baulk of the excavation unit. I ended the lot when Floor 7 was exposed. The ending elevation was 99.6 cm below Datum 10C. I only recovered pottery and chert.

Level 4, Lot PL-B-367: This lot was below Floor 7. The matrix consisted of plaster. It was brown in color and semi-compact. This level was highly disturbed by a large tree root, the same that was recorded in previous levels. In addition, the continuous rains that occurred during July caused that this lot underwent flooding. Because of these conditions, Floor 8 was not observed during the process of excavation. The short distance between Floors 8 and 9 was also an important factor for not distinguishing between these two stucco floors. I observed that Floors 6, 7 and 8 were all resurfaces of Floor 9. I closed the lot when Floor 9 was uncovered. Floor 9 was also highly disturbed because of roots. The ending elevation of this lot was 104.6 cm below Datum 10C. Cultural materials included pottery and chert.

Level 5, Lot PL-B-369: This lot was below Floor 9. The matrix consisted of plaster and fill made of silty loam and pebbles. The matrix was brown in color and semi-compact. Floor 10 was not visible during the excavation but after studying the northern baulk, I observed that Floors 9 and 10 were too close together suggesting that they were resurface events. I closed the lot when Floor 11—the stucco floor associated with either Feature 25 or Feature 11—was uncovered. The ending elevation was 110.2 cm below

Datum 10C. Cultural materials included pottery, chert, quartz and obsidian.

Level 6, Lot PL-B-373: This lot was below Floor 11. The matrix consisted of silty clay loam mixed with small stones. It was brown-gray in color and compact (when it was dry). This lot ended arbitrarily at the level of the patio surface of Feature 27. We could observe that Feature 28 did not extend into this area. The ending elevation was 152.8 cm below Datum 10C. Large amount and variety of materials were recovered during the excavation of this area. We found pottery, chert, freshwater shell, marine shell, limestone, chert microdrills, granite, fauna remains and figurine fragments.

EXCAVATION UNIT CHP-PB-PU-39

This excavation unit was placed immediately north of EU CHP-PB-PU-37. It measured 3 m x 1.50 m and was 1.42 m deep. In order to take elevations, I used Datum 10B. The main objective of this excavation unit was to further explore the terrace of Feature 27 discovered during the excavation of EU CHP-PB-PU-37.

Level 1, Lot PL-B-355: The beginning elevation was 39.6 cm below Datum 10B. The lot consisted of the removal of humus—organic dark brown soil—and small stones. I closed it when we reached Floor 4, a stucco floor that was only well preserved at the southern edge of the excavation unit. The ending elevation was 80.6 cm below Datum 10B. Cultural materials included pottery, chert, quartz, cobble, granite, slate, and a shell bead.

Level 2, Lot PL-B-357: This lot was below Floor 4. The matrix consisted of plaster, ballast, and fill. It was light brown in color and compact. I closed the lot when we exposed Floor 5, a fairly preserved stucco floor. The ending elevation was 99.4 cm below

Datum 10B. Cultural materials included pottery, chert, quartz, cobble and daub.

Level 3, Lot PL-B-359: This lot corresponded to the exploration beneath Floor 5. The matrix consisted of plaster and ballast. It was light brown in color and compact. I closed the lot when Floor 6 was exposed, at 108.2 cm below Datum 10B. Floor 5 and Floor 6 were separated by several centimeters of ballast, unlike the eastern section where these floors were too close together even, sometimes, merging into a single floor. I only recovered pottery and chert.

Level 4, Lot PL-B-361: This lot was below Floor 6. The matrix consisted of plaster and ballast. I closed the lot when Floor 7 was exposed, at 117.6 cm below Datum 10B. I only recovered pottery and chert.

Level 5, Lot PL-B-364: This lot was beneath Floor 7. The matrix was only plaster. I closed the lot when Floor 8 was uncovered, at 120.4 cm below Datum 10B. This suggests that Floor 7 was a resurface of Floor 8. I only recovered pottery and chert.

Level 6, Lot PL-B-366: This lot was below Floor 8. The matrix consisted of plaster. I closed this lot when Floor 9, a badly preserved stucco floor, was exposed. This stucco floor was found at 126 cm below Datum 10B. Floors 7 and 8 were resurfaces of Floor 9. I only recovered a few pieces of ceramic sherds and chert.

Level 7, Lot PL-B-368: This lot was below Floor 9. The matrix consisted of plaster and a small layer of ballast. The matrix was semi-compact and light brown in color. The lot ended at 133.4 cm below Datum 10B, when Floor 10 was exposed. This stucco floor was found in good condition. I found ceramic sherds, chert and freshwater shell.

Level 8, Lot PL-B-370: This lot was below Floor 10. The matrix consisted of plaster. I closed the lot when Floor 11 was exposed, at 137.6 below Datum 10B. The closeness between Floors 10 and 11 suggested that Floor 10 was a resurface of Floor 11. I uncovered pottery, chert, freshwater shell, marine shell and slate.

Level 9, Lot PL-B-371: This lot was beneath Floor 11. The matrix consisted of silty clay loam mixed with small stones. It was compact and brown-gray in color. The main goal of exploring this level was to determine whether the north south-addition of Feature 27 (exposed at EU CHP-PB-PU-37) continued in this direction. After reaching the level of the patio surface of Feature 27, I reduced the dimensions of the excavated area to 1.50 m x 1.50 m. After excavating a little bit deeper, I discovered that the north-south alignments continued in this area and that also went westward. These data made me to infer that this addition was a terrace. The stones that made up this terrace were attached to the northern limit of Feature 27. They were roughly cut stones of diverse dimensions and were resting on the patio surface of Feature 27. This lot ended arbitrarily at 182 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell, marine shell, cobble, a figurine fragment, a microdrill and a ceramic tejo.

EXCAVATION UNIT CHP-PB-PU-40

This excavation unit was placed immediately west of EU CHP-PB-PU-37. It measured 2 m x 3 m and was 1.49 m deep. In order to take elevations, I used Datum 10B. The main objective of this excavation unit was to further explore Feature 27 and find its northwestern corner.

Level 1, Lot PL-B-358: The beginning elevation of this lot was 34.8 cm below Datum 10B. This lot consisted of the removal of humus—dark brown soil. Medium stones and some cut stones were also present in the matrix. At the southwestern corner of the excavation unit, I exposed a corner of a feature (Feature 31). This feature consisted of two courses of roughly cut stones, which were resting on Floor 2. Feature 31 was highly disturbed by roots and because it was close to the surface. The lot ended when I exposed the level of Floor 2. This stucco floor was highly disturbed in this area of the plaza. The ending elevation of the lot was 69.4 cm below Datum 10B. I recovered pottery, chert, freshwater shells, marine shells, fauna remains, and cobble.

Level 2, Lot PL-B-365: This lot was below the level of Floor 2. The matrix consisted of ballast. After removing the ballast, I exposed a dry core made of large stones ranging from 20 cm to 40 cm in length. These stones were removed as part of Lot PL-B-365. The matrix was light brown in color and loose. I closed the lot when Floor 4 was exposed. The ending elevation was 88.6 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell, and fauna remains.

Level 3, Lot PL-B-372: This lot was below Floor 4 and ended when Floor 5 was exposed. The matrix consisted of plaster and ballast. The plaster was highly compact, white and smooth. The ending elevation was 91.4 cm below Datum 10B. Cultural materials found included pottery and chert.

Level 4, Lot PL-B-374: This lot was beneath Floor 5. The matrix consisted of plaster and ballast. Floor 4 was a resurface of Floor 5 because these floors were only a few centimeters apart. Floors 5 and 6 were too close together. Consequently, Floor 6 was not observed during the excavation process. I closed the lot when Floor 7 was exposed, at

106.2 cm below Datum 10B. Cultural materials below Floor 5 included pottery, chert and freshwater shell.

Level 5, Lot PL-B-375: This lot was beneath Floor 7. The matrix consisted of plaster and ballast. The lot ended when Floor 8 was found, at 114.6 cm below Datum 10B. Cultural materials recovered in this lot included pottery, chert and fauna remains.

Level 6, Lot PL-B-376: This lot was below Floor 8. The matrix consisted of plaster and ballast. I closed the lot when Floor 9 was exposed. The ending elevation of this lot was 121.1 cm below Datum 10B. Cultural materials included pottery, chert and slate.

Level 7, Lot PL-B-374: This lot was beneath Floor 9. After removing the plaster of Floor 9, I exposed another stucco floor that I identified as Floor 10. This stucco floor was brown-gray in color and was fairly preserved. The ending elevation was 125.2 cm below Datum 10B. Cultural materials included pottery, chert and a single piece of freshwater shell.

Level 8, Lot PL-B-379: This lot was beneath Floor 10. The matrix consisted of plaster. After removing the plaster and a thin layer of fill, I exposed Floor 11, which marked the end of the lot. The ending elevation was 129 cm below Datum 10B. Cultural materials included pottery and chert.

Level 9, Lot PL-B-380 and PL-B-399: This lot was beneath Floor 11. After removing the floor at the eastern section of the excavation unit, I found a rectangular feature on top of Feature 27. I also exposed a stucco floor identified as Floor 13. As the excavation went east, I uncovered another stucco floor. This stucco floor was called Floor 12. It was well preserved, although it was broken just in front of Feature 27. Floor 12

marked the end of the lot. The ending elevation was 133.6 cm below Datum 20B. Cultural materials included pottery, chert, and freshwater shell.

Level 10, Lot PL-B-382 and PL-B-401: This lot was beneath Floor 12. I ended the lot when I exposed Floor 13. This stucco floor was at the same level that the top surface of Feature 27. The ending elevation was 145.2 cm below Datum 10B. Cultural materials included pottery, chert, and freshwater shell.

Level 11, Lot PL-B-384 and PL-B-402: This lot was beneath Floor 13 and west of the rectangular feature on top of Feature 27. I observed that the northern wall of Feature 27 continued westwards, beyond the rectangular feature built on top of its northern wall. I also exposed the northwestern corner of Feature 27. Attached to the northern wall of Feature 27, by the corner, I found three alignments running north-south and facing west. I identified them as the western limits of the terrace. The original western limit was attached to the western limit of the rectangular feature on top of Feature 27. The two other alignments were identified as extensions of the terrace. Outside of Feature 27, I exposed Floor 14, a stucco floor that could have functioned as a patio surface. The ending elevation of this lot was 152.2 cm below Datum 10B. Cultural materials included pottery, chert, and freshwater shell.

Level 12, Lot PL-B-387: This lot was opened to explore the area between the original western limit of the terrace and its first expansion. I observed that these alignments were resting on the patio surface of Feature 27. The matrix consisted of silty clay loam. It was brown-gray in color and compact. The ending elevation of this lot was 184 cm below Datum 10B. Cultural materials included pottery, chert, basalt, and freshwater shell.

Level 12, Lot PL-B-388 and PL-B-403: This lot was below Floor 14, stucco floor located between the original western limit of the terrace and its first expansion. The matrix consisted of silty clay loam. It was brown-gray in color and compact. I observed that both alignments were resting on the patio surface of Feature 27. The ending elevation of this lot was 175.2 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell, marine shell, fauna remains, basalt and an adorno made of marine shell.

Level 12, Lot PL-B-392: This lot was opened to explore the area between the first and second expansions of the terrace western limit. The matrix consisted of silty clay loam. It was brown-gray in color and compact. The ending elevation of this lot was 173 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell and a shell bead.

Level 12, Lot PL-B-393: This lot was opened to explore inside the rectangular feature on top of the northern wall of Feature 27. The matrix consisted of silty clay loam. It was brown-gray in color and compact. I closed the lot when I exposed the top surface of Feature 27. I observed that the northern wall of Feature 27 continued underneath the rectangular feature. I interpreted the rectangular feature as a modification of the rectangular platform. The ending elevation of this lot was 161 cm below Datum 10B. Cultural materials included pottery, chert, freshwater shell, marine shell and a shell bead.

Level 12, Lot PL-B-395: This lot was opened to explore inside the northwestern corner of Feature 27. The matrix consisted of silty clay loam. It was brown-gray in color and compact. I closed the lot arbitrarily at 162 cm below Datum 10B because the area was too small to continue the excavation. Cultural materials included pottery, freshwater shell, and a shell bead.

APPENDIX 2

ARCHITECTURAL ATTRIBUTES AND ARTIFACTS PER CERAMIC PHASE AND STRUCTURE

CUNIL PHASE		Variables			
Architecture	Prominence	Centrality	Northcenter	Northwest	Northcenter/ south
	Visibility	---	---	---	---
	Form	Materials	Tamped-marl patio, cobbles	Plaster	Marl, roughly cut stones
		Retaining walls	---	---	One course
		Layout	Patio	Patio	Circular superstr on patio
		Dimensions	---	---	---
Associated activities	Function		Residence	Residence	Residence
	Production	Casual flakes		---	
		Textile		---	
		Shell ornaments		---	
		Stucco work		---	
		Beekeeping		---	
	Consumption	Freshwater		---	
		Fauna		---	
		Regional goods		Slate plaque	
		Long-distance goods		Obsidian, jade	
	Food	Processing		---	
		Serving		---	
	Ritual performance			---	

Variables		Str. B-4/1st	Str. B-4/2nd	Str. B-4/3rd	Str. B-4/4th
Architecture	Prominence	Centrality			
		Visibility			
	Form	Materials	Bedrock, tamped-marl surface, perishable materials	Mad, roughly cut stones	Patio: plaster & cobbles. Platforms: plaster
		Retaining walls	One course	Superstructure: Two parallel rows, two courses high	---
		Layout	Apsidal building	Apsidal	Basal platform w/ apsidal building
		Dimensions	---	---	---
	Function		Residence	Residence	Residence
	Production	Casual flakes	---		
		Textile	---		
		Shell ornaments	---		
		Stucco work	---		
		Beekeping	---		
		Freshwater	---		
Associated activities	Consumption	Fauna	---		
		Regional goods	Slate plaque		
		Long-distance goods	Obsidian flakes (n=28), jadeite		
		Processing	---		
	Food	Serving	---		
		Ancestor worshipping	Yes, figurines		

Variables		Plaza B/1st	Plaza B/2nd	Plaza B/3rd	Plaza B/4th
Architecture	Prominence	Centrality	Yes		
		Visibility	---	Yes	Yes
	Form	Materials	Tamped-marl patio, perishable materials	---	---
			Large, uncut blocks	Tamped-marl patio, roughly cut stones	Roughly-cut stones plaster, cobbled patio
		Retaining walls	None	Superstructure: two parallel rows, two courses high each	---
		Layout	Apsidal?	Basal platform w/ apsidal superstructure	---
	Function	Dimensions	---	20cm high	---
			Unknown	Domestic	Domestic
	Associated activities	Casual flakes	Yes	Yes	Yes
		Textile	---	---	---
Associated activities	Production	Shell ornaments	---	---	---
		Stucco work	---	---	---
		Beekeeping		Yes	
	Consumption	Freshwater	Yes, limited	Yes, limited	Yes
		Fauna	---	---	Yes
		Regional goods	---	Granite	Slate
		Long-distance goods	---	---	Serpentine, obsidian
	Food	Processing	---	Yes	---
		Serving	Yes	Yes	Yes
		Storage	---	---	---
	Ritual performance	---	---	---	---

EARLY FACET OF THE KANLUK PHASE

Northern group									
Variables		Platform R	Platform P	Platform L/1st	Platform L	Platform 1	Platform B		
Architecture	Prominence	Centrality	--	--	--	--	--	--	
		Visibility	---	--	--	--	--	--	
	Form	Materials	Marl, cobbles	Marl, cobbles	Marl, roughly cut stones	Marl, roughly cut stones	Marl, roughly cut stones, cobbles	Platform: one course; superstr.: 2 courses	
		Retaining walls	One course, one row						Rectangular platform, 2 superstr.
Layout		Apsidal platform	---	---	---	Circular	17.5x17.5m		
Function	Dimensions	---	---	---	---	---	Domestic/public		
	Casual flakes	Domestic	Domestic	Domestic	Domestic	Domestic?			
Associated activities	Production	Textile	Yes						
		Shell ornaments	Yes						
		Stucco work	---						
		Freshwater	Yes						
	Consumption	Fauna	Yes						
		Regional goods	Slate, granite, sandstone				Slate, granite, Basalt, obsidian, greenstone, Mamom pottery		
Food	Long-distance goods	Basalt, obsidian, greenstone							
	Processing								
Ritual performance	Serving								
		Yes				Yes		Yes	

Variables		Southcentral				Structure B-4			
		Pl. B/5 th	Pl. B/6 th	Pl. B/ 8 th	B-4/5 th	B-4/6 th	B-4/7 th		
Architecture	Prominence	Centrality	Maybe	Maybe		---	---	---	
		Visibility	---	--	--	Yes, height			
	Form	Materials	Marl, roughly cut stones	Large slabs, tamped-marl patio	Roughly cut stones, cobbles	Roughly cut stones, lime, plaster, persihable materials			
		Retaining walls	One course			Basal platform: several courses. Superstr: one course			
		Layout	Basal platform, superstructure	Rectangular	Circular	Rectangular basal platform & rectangular superstructure	Rectangular, basal platform & 2 superstr. / stair		
Function	Dimensions	---	---	---	70cm high	1.1m high	1.5m high		
		Domestic	Domestic	Domestic?	Public	Public	Public		
Associated activities	Craft production	Casual flakes	---						
		Textile	---						
		Shell ornaments	---						
		Stucco work	---						
		Freshwater	Yes						
	Consumption	Fauna	---						
		Regional goods	Slate, granite, sandstone			Granite			
		Long-distance goods	Basalt, obsidian, greenstone			Obsidian flake, jadeite beads			
	Food	Processing	---						
		Serving	---						
	Ritual performance		Yes						

Variables		Plaza B/ 5th-A	Plaza B/ 5th-B	Plaza B/ 6th	Plaza B/ 7th	Plaza B/ 8 th
Prominence	Centrality	Yes	Yes	Yes	Yes	Yes
	Visibility	---	---	---	---	---
Form	Materials	Tamped-marl patio, roughly cut stones		Tamped-marl surface, small slabs	Tamped marl surface	Roughly cut stones, tamped earth patio
	Retaining walls	Double row, one course	Two courses	One course	--	Three/four courses
	Layout	Unknown	Unknown	Circular or apsidal	Surface	Apsidal
	Dimensions	---		---	---	56cm high
Function		Domestic		Domestic	Domestic	Domestic
Craft production	Casual flakes	Yes	Yes	Yes	Yes	Yes
	Textile	---	---	---	Yes	Yes
	Shell ornaments	---	---	---	---	---
	Stucco work	---	---	---	Yes	Yes
Consumption	Freshwater	Yes		Yes	Yes	Yes
	Fauna	---	---	Limited	---	---
	Regional goods	---	---	---	---	---
	Long-distance goods	---	---	---	---	MS, Mamom pottery
Food	Processing	Cooking		--	--	Cooking
	Serving	Limited		Limited	Yes	Yes
	Storage	---	---	Limited	Yes	Limited
Ritual performance	---	Limited		Limited	Limited - figurines, small jars, censers	Limited

LATE FACET OF THE KANLUK PHASE

Variables			Plaza B		
Architecture	Prominence	Centrality	B-2/1st	B-4/8th	B-4/9th
		Visibility	---	---	---
	Form	Materials	Roughly cut stones	Well-cut stones, plaster	Well-cut stones, plaster
		Retaining walls	one course	---	
		Layout	Apsidal	Basal platform w/ circular str. on platform / stair	Basal platform w/ low platform
	Function	Dimensions	---	2m high	2.5m high
			---	---	---
		Casual flakes	---	---	---
	Craft production	Textile	Yes	---	---
		Bone ornaments	No	---	---
Shell ornaments		No	---	---	
Stucco work		No	---	---	
Freshwater		---	Yes, mainly jute		
Fauna		No	---	---	
Consumption	Regional goods	---	Granite, slate		
	Long-distance goods	---	Obsidian blades, Strombidae		
	Food	Processing	---	---	
Serving		---	---		
Associated activities	Ritual performance	---	12 figurines	104 figurines	

Variables		Plaza B/ 9th	Plaza B/ 10th	Plaza B/ 11th-A	Plaza B/ 11th-B	Plaza B/ 11th-C	Plaza B/ 12th
Prominence	Centrality	Yes	Yes	Yes			Yes
	Visibility						
	Materials	Marl, cut stones	Marl, cut stones	Plaster, well-cut stones	Roughly cut stones, clay, marl	Roughly cut, stones, cobbles, yellow clay	Cobbles
Form	Retaining walls	4 courses	Platform: 5/6 courses, Terrace: 3 courses	3 courses	4 courses	1 course	1 course
	Layout	Rectangular w/ patio	Rectangular w/ terrace & patio	Keyhole-shaped, patio	Rectangular, w/ ancillary str.	Oval	Irregular
	Dimensions	50cm high	50cm high	8.50m diameter, 30cm high	at least 23.6m2	1.65x1.35m, 0.20 high	at least 98m ²
Function	Function	Domestic	Domestic	Public	Domestic	Public	Public
Craft production	Casual flakes	Yes	Yes		Yes		almost disappear
	Textile	Yes, sporadic	Yes, sporadic		Yes		Yes, limited
	Bone ornaments	No	Yes, limited		Yes		No
	Shell ornaments	Yes, limited	Yes, limited		Yes, increased		No
	Stucco work	No	Yes		Yes		No
Consumption	Freshwater	Yes	Yes		Yes, increased		Yes, decreased
	Fauna	Yes	Yes		Yes, increased		Yes, decreased
	Regional goods	Slate	Chert, slate, granite		Chert, slate, granite		Slate, granite
	Long-distance goods	Conch, obsidian, Mamom pottery	Conch, basalt, obsidian, serpentine, Mamom pottery		Conch (increased), basalt, obsidian, serpentine, greenstone, Mamom pottery		Obsidian, basalt
	Prestige goods	Shell ornaments	Shell ornaments		Shell ornaments, slate disks, Reforma Incised		---
Food	Processing	Cooking	Cooking		Cooking and grinding		Grinding
	Serving	Yes	Yes		Yes		---
	Storage	Yes	Yes		Yes		---
Ritual performance	---	Figurines, miniature vessels	Figurines, censer, miniature & spouted vessels		Caches, figurines, miniature & spouted vessels		Altar/monument, figurines (limited),

Variables		Plaza C		Plaza F		Plaza G
		Round str	F-2/1st	F-2/2nd	G-Plaza/1st	
Architecture	Prominence	Centrality	---	---	---	
		Visibility	---	Yes	---	
	Form	Materials	Roughly cut stones	Cobbles, blocks, plaster	Large blocks, plaster	Roughly cut stones
		Retaining walls	One course			
		Layout	Round	Platform on bedrock	---	---
	Dimensions	5m diameter	50cm tall	85cm high	---	
Function		---	---	---	---	
	Craft production	Casual flakes	---	---	---	---
Textile		No	---	---	---	
Bone ornaments		No	---	---	---	
Shell ornaments		No	---	---	---	
Stucco work		No	---	---	---	
Freshwater		Yes, only jute	---	---	---	
Associated activities	Consumption	Fauna	No	---	---	
		Regional goods	No	---	---	
		Long-distance goods	No	---	---	
	Food	Processing	---	---	---	---
Serving		---	---	---	---	
Ritual performance	---	No	---	---	---	

Variables		Tolok			Cas Pek		Tzinic
Prominence	Centrality	Str. 1/Midden	Str. 14	Str. 15	Str. A	Str. B	Str. 6
	Visibility	---	---	---	---	---	---
Form	Materials	---	Cut stones, plaster	Cut stones, stucco, tamped marl patio	Roughly cut stones	Roughly cut stones, marl	Plaster
	Retaining walls	---	9 courses	5 courses	Single course	Platform & superstr: One course	---
	Layout	---	Key-hole shape on platform	Circular on platform	Platform above bedrock	Basal Platform w/ superstructure	---
	Dimensions	---	9.5 in diameter, 55cm high	5.5m in diameter, 40cm high	---	8x9m	8-10 cm
Function		---	Public	Public	---	---	---
	Casual flakes	---	---	---	---	---	---
	Textile	Yes	Yes	No	---	---	---
	Bone ornaments	---	---	---	---	---	---
	Shell ornaments	---	---	---	Yes	No	---
Associated activities	Stucco work	---	---	---	---	---	---
	Freshwater	mainly appe snail; P. indiorum, P. glaphyrus, few pomacea	P. indiorum, P. glaphyrus, few pomacea		mainly apple snail; pomacea, p. indiorum, P. glaphyrus		---
	Fauna	marine fish, turtle, curassow, deer, opossum, armadillo, paca, rabbit	Strombidae, obsidian		marine fish, turtle, turkey, deer, peccary, dog, opossum, armadillo, paca		
	Regional goods	Granite, slate	Granite, slate	Jadeite	Granite, slate	---	---
	Long-distance goods	Strombidae, prunum, dentalium, jadeite, obsidian	Strombidae, obsidian	Strombidae, obsidian	Strombidae, obsidian	---	---
Food	Processing	---	---	---	---	---	---
	Serving	---	---	---	---	---	---
Ritual performance	---	12 figurines	7 figurines	---	3 figurines	18 figurines	---

Architecture

Associated activities

Variables		Zubin				Zotz		Zopilote
		C9-8th	C9-7th	C9-6th	Str. B-8	Str. 2/1st	Str. 2/2nd	
Architecture	Prominence	Centrality						Str. A-1
		Visibility						Height
	Form	Materials	Roughly cut stones, tamped clay surfaces		cut stone, plaster patio	Plaster, clay, marl	Plaster, cut stones	---
		Retaining walls	Three courses	Four courses	one course		Basal platform: three courses	---
		Layout	Apsidal	Apsidal w/ step axial stair	Platform on plaza floor	Platform on bedrock	Basal platform w/ round structure	---
	Dimensions	40cm high	44cm high	80cm high	---	---	3.6m in diameter, 1.2 m high	4m-5.5m high
Associated activities	Function	Public	Public	Public	Domestic	---	Public	---
	Casual flakes		---		---	---		---
	Textile		---		---			---
	Bone ornaments		---		---			---
	Shell ornaments		---		---			---
	Stucco work		---		---			---
	Freshwater		---		---			---
	Fauna		---		---			---
	Regional goods		---		---			---
	Long-distance goods	---		jadeite beads, greenstone	---			---
	Processing		---		---			---
	Food		---		---			---
	Ritual performance	---	4 figurines	5 figurines	2 figurines	---	---	---

REFERENCES CITED

- Abramiuk, Marc and William P. Meurer
 2006 A Preliminary Geoarchaeological Investigation of Ground Stone Tools in and around the Maya Mountains, Toledo District, Belize. *Latin American Antiquity* 17(3):335-354.
- Abrams, Elliot M.
 1989 Architecture and Energy: An Evolutionary Perspective. In *Archaeological Method and Theory Vol. 1*, edited by Michael B. Schiffer, pp. 47-89. University of Arizona Press, Tucson.
- 1994 *How the Maya Built Their World: Energetics and Ancient Architecture*. University of Texas Press, Austin.
- Adams, Richard E. W.
 1971 *The Ceramics of Altar de Sacrificios*. Papers of the Peabody Museum of Archaeology and Ethnology 63(1). Harvard University, Cambridge, Massachusetts.
- Aimers, James J. and Prudence M. Rice
 2006 Astronomy, ritual, and the Interpretation of Maya "E-Group" Architectural Assemblages. *Ancient Mesoamerica* 17:79-96.
- Aimers, James, Terry G. Powis and Jaime J. Awe
 2000 Preclassic Round Structures of the Upper Belize River Valley. *Latin American Antiquity* 11(1):71-86.
- Aldenderfer, Mark
 1993 Ritual, Hierarchy, and Change in Foraging Societies. *Journal of Anthropological Archaeology* 12:1-40.
- 2004 Preludes to Power in the Highland Late Preceramic Period. *Archaeological Papers of the American Anthropological Association* 14:13-35.
- Amador Berdugo, Fabio E.
 2005 *Ancient Pottery in the Yalahau Region: A Study of Ceramics and Chronology in Northern Quintana Roo, Mexico*. PhD dissertation, State University of New York, Buffalo.
- Ames, Kenneth
 1981 The Evolution of Social Ranking on the Northwest Coast of North America. *American Antiquity* 46(4): 789-805.

- 1995 Chiefly Power and Household Production on the Northwest Coast. In *Foundations of Social Inequality*, edited by T. Douglas Price and Gary M. Feinman, pp. 155-. Plenum Press, New York.

Anderson, Benedict

- 2006 *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Verso, London.

Anderson, David G.

- 1994 *The Savannah River Chiefdoms: Political Change in the Late Prehistoric Southeast*, University of Alabama Press, Tuscaloosa.

Anderson, David S.

- 2005 Preclassic Settlement Patterns in Northwest Yucatan. In *Mono y Conejo* 3:13-22.
- 2010 *Xtobó, Yucatan, México: The Study of a Preclassic Maya Community*. PhD dissertation, Tulane University, New Orleans.
- 2011 Xtobo, Yucatan, Mexico, and the Emergent Preclassic of the Northern Maya Lowlands. *Ancient Mesoamerica* 22:301-322.
- 2012 The Origins of the Mesoamerican Ballgame: A New Perspective from the Northern Maya Lowlands. In *The Ancient Maya of Mexico: Reinterpreting the Past of the Northern Maya Lowlands*, edited by Geoffrey E. Braswell, pp. 43-64. Equinox, Sheffield, UK.

Andrews, Anthony and Fernando Robles Castellanos

- 2004 An Archaeological Survey of Northwest Yucatan, Mexico. *Mexicon* XXVI (1): 7-14.

Andrews IV, E. Wyllys and Irwin Rovner

- 1975 Archaeological Evidence on Social Stratification and Commerce in the Northern Maya Lowlands: Two Masons' Tool Kits from Muna and Dzibilchaltun, Yucatan. In *Archaeological Investigations on the Yucatan Peninsula*, edited by M. A. L. Harrison and R. Wauchope, pp. 81-100. Publication 31. Middle American Research Institute, Tulane University, New Orleans.

Andrews, E. Wyllys IV and E. Wyllys Andrews V

- 1980 *Excavations at Dzibilchaltun, Yucatan, Mexico*. Middle American Research Institute Pub. 48. Tulane University, New Orleans.

Andrews V, E. Wyllys

- 1981 Dzibilchaltun. *Supplement of the Handbook of Middle American Indians. Volume 1: Archaeology* (V.R. Bricker and J.A. Sabloff, vol. eds.): 313-341. University of Texas Press. Austin.

1986 Olmec Jades from Chacsinkin, Yucatan, and Maya Ceramics from La Venta, Tabasco. *Research and Reflections in Archaeology and History* (E. W. Andrews V, ed.): 11-49. Middle American Research Institute, pub. 57. Tulane University, New Orleans.

1988 Ceramic Units from Komchen, Yucatan, Mexico. *Cerámica de Cultura Maya* 15:51-64.

Andrews, E. Wyllys V and Norman Hammond

1990 Redefinition of the Swasey Phase at Cuello, Belize. *American Antiquity* 55(3): 570-584.

Andrews, E. Wyllys V, Noberto Gonzalez and William Ringle

1980 Map of the Ruins of Komchen, Yucatan, Mexico. Middle American Research Institute, Tulane University, New Orleans.

Andrews, E. Wyllys V, George J. Bey and Christopher Gunn

2008 Rethinking the Early Ceramic History of the Northern Maya Lowlands: New Evidence and Interpretations. Paper presented in 73th Annual Meeting of the Society for American Archaeology, Vancouver, Canada.

Aoyama, Kazuo

1999 *Ancient Maya State, Urbanism, Exchange, and Craft Specialization: Chipped Stone Evidence from the Copán Valley and the La Entrada Region, Honduras*. University of Pittsburgh Memoirs in Latin American Archaeology, No. 12. University of Pittsburgh Dept. of Anthropology, Pittsburgh, PA.

2010 Socioeconomic and Political Implications of Regional Studies of Maya Lithic Artifacts: Two Case Studies of the Copán Region, Honduras, and the Aguateca Region, Guatemala. In *The Technology of Maya Civilization. Political Economy and Beyond in Lithic Studies*, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 37-54. Equinox, London, Oakville.

2014 Symbolic and Ritual Dimensions of Exchange, Production, Use and Deposition of ancient Maya Obsidian Artifacts. In *Obsidian Reflections. Symbolic Dimensions of Obsidian in Mesoamerica*, edited by Marc N. Levine and David M. Carballo, pp. 127-158. University Press of Colorado.

Ardren, Traci, T. Kam Manahan, Julie K. Wesp, and Alejandra Alonso

2010 Cloth Production and Economic Intensification in the Area Surrounding Chichen Itza. *Latin American Antiquity* 21:274-289.

Ashmore, Wendy

- 1989 Construction and Cosmology: Politics and Ideology in Lowland Maya Settlement Patterns. In *Word and Image in Maya Culture: Explorations in Language, Writing and Representation*, edited by William F. Hanks and Don S. Rice, pp. 272-286. University of Utah Press, Salt Lake City.

- 1996 Comment. *Current Anthropology* 37:47-48.

Audet, Carolyn M.

- 2001 Excavations of Structure F-2, Cahal Pech, Cayo District, Belize. In *The Western Belize Regional Cave Project. A Report of the 2000 Field Season*, edited by Reiko Ishihara, Cameron S. Griffith and Jaime J. Awe, 269-284. University of New Hampshire, Durham.

Awe, Jaime J.

- 1992 Dawn in the Land between the Rivers: Formative Occupation at Cahal Pech, Belize and Its Implications for Preclassic Occupation in the Central Maya Lowlands. Ph.D. dissertation, University of London.
- 1994 Ritual, Religion, and Cultural Complexity in the Middle Formative Belize River Valley. Paper presented at the 12th Maya Weekend, University Museum, University of Pennsylvania, Philadelphia.
- 2008 Architectural Manifestations of Power and Prestige: Examples from Classic Period Monumental Architecture at Cahal Pech, Xunantunich and Caracol, Belize. *Research Reports in Belizean Archaeology* 5:159-173.

Awe, Jaime J. Jim Aimers and Caroline Blanchard

- 1992a A Preclassic Round Structure from the Zotz Group at Cahal Pech, Belize. In *Progress Report of the Fourth Season (1991) of Investigations at Cahal Pech, Belize*, edited by Jaime J. Awe and Mark D. Campbell, pp. 119-140. Institute of Archaeology, Belmopan, Belize, C.A.

Awe, Jaime, Cassandra Bill, Mark Campbell and David Cheethan

- 1990 Early Middle Formative Occupation in the Central Maya Lowlands: Recent Evidence from Cahal Pech, Belize. *Papers from the Institute of Archaeology* 1: 1-5, University College, London.

Awe, Jaime J. and Paul F. Healy

- 1994 Flakes to Blades? Middle Formative Development of Obsidian Artifacts in the Upper Belize River Valley. *Latin American Antiquity* 5(3):193-205.

Awe, Jaime J. and Myka M. Schwanke

- 2006 Preliminary Investigation of Structure C2, Cahal Pech, Belize. In *Belize Valley Reconnaissance Project. A Report of the 2005 Field Season*, edited by Christophe G. Helmke, pp. 135-142. Trent University, Peterborough Ontario.

Awe, Jaime J., J. Vinuales, M. Velasco and R Novelo

- 1992b Investigations at the Cas Pek Group in the Western Periphery of Cahal Pech, Belize. In *Progress Report of the Fourth Season (1991) of Investigations at Cahal Pech, Belize*, edited by Jaime J. Awe and Mark D. Campbell, pp. 51-58. Trent University, Peterborough Ontario.

Ball, Joseph

- 1977 The Rise of the Northern Maya Chiefdoms. A Socioprocessual Analysis. In *The Origins of Maya Civilization*, edited by Richard Adams, pp. 101-132. School of American Research, University of New Mexico, Albuquerque.

- 1993 *Cahal Pech, the Ancient Maya, and Modern Belize: The Story of an Archaeological Park*. San Diego University Press, San Diego.

Ball, Joseph and E. Wyllys Andrews

- 1978 *Preclassic Architecture at Becan, Campeche*. Middle American Research Institute, Tulane.

Ball, Joseph and Jennifer Taschek

- 2003 Reconsidering the Belize Valley Preclassic: A Case for Multiethnic Interactions in the Development of a Regional Culture Tradition, *Ancient Mesoamerica* 14: 179-217.

- 2004 Buenavista del Cayo. A Short Outline of Occupational and Cultural History at an Upper Belize Valley Regal-Ritual Center. In *Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 149-167. University Press of Florida, Tallahassee.

Barlett, Mary Lee

- 2004 Artifacts of Fired Clay. In *K'áxob: Ritual, Work, and Family in an Ancient Maya Village*, edited by Patricia McAnany, pp. 263-273. Cotsen Institute of Archaeology, University of California, Los Angeles.

Barret, Jason W.

- 2004 Constructing Hierarchy through Entitlement: Inequality in Lithic Resource Access among the Ancient Maya of Blue Creek, Belize. PhD dissertation, Texas A&M University.

- 2010 Ancient Maya Exploitation of Non-renewable Resources in the Eastern Maya Lowlands. In *The Technology of Maya Civilization. Political Economy and*

Beyond in Lithic Studies, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 57-68. Equinox, London, Oakville.

Bauer, Jeremy R.

- 2006 Excavaciones en el Grupo E de Cival. In *Investigaciones arqueológicas en la región de Holmul, Petén, Guatemala. Informe preliminar de la Temporada 2005*, edited by Francisco Estrada-Belli, pp. 44-64. Boston University.

Beaudry-Corbett, Marilyn and Sharisse McCafferty

- 2002 Spindle Whorls: Household Specialization at Ceren. In *Ancient Maya Women*, edited by Traci Ardren, pp. 52-67. AltaMira Press, Walnut Creek.

Beckman, Christopher

- 2008 Corporate Strategies in the Late Formative to Early Classic Tequila Valleys of Central Jalisco. In *Latin American Antiquity* 19 (4): 414-434.

Berger, Rainer, Suzanne de Atley, Reiner Protsch and Gordon R. Willey

- 1974 Radiocarbon Chronology for Seibal, Guatemala. *Nature* 252:472-473.

Berlin, Henrich

- 1953 *Archaeological Reconnaissance in Tabasco*. Current Reports, no. 7. Carnegie Institution of Washington, Washington, D.C.

Bey, George J, III and Rossana May Ciau

- 2014 The Role and Realities of Popol Nahs in Northern Maya Archaeology. In *The Maya and their Central American Neighbors: Settlement Patterns, Architecture, Hieroglyphic Texts, and Ceramics*, edited by Geoffrey E. Braswell, pp. 335-355. Routledge, New York.

Blake, Michael T.

- 1991 An Emerging Early Formative Chiefdom at Paso de la Amada, Chiapas, Mexico. In *The Formation of Complex Society in Southern Mesoamerica*, edited by W. R. Fowler, Jr., pp. 27-45. CRC Press, Boca Raton, Florida.

Blake, Michael T., Richard G. Lesure, Warren D. Hill, Luis Barba and John E. Clark

- 2006 The Residence of Power at Paso de la Amada, Mexico. In *Palaces and Power in the Americas. From Peru to the Northwest Coast*, edited by Jessica J. Christie and Patricia J. Sarro, pp. 191-210. University of Texas Press, Austin.

Blanton, Richard

- 1998 Beyond Centralization: Steps toward a Theory of Egalitarian Behavior in Archaic States. In *Archaic States*, edited by Gary M. Feinman and Joyce Marcus, pp. 135-172. School of American Research Press, Santa Fe.

Blanton, Richard, Gary M. Feinman, Stephen A. Kowalewski and Peter N. Peregrine
1996 A Dual-processual Theory for the Evolution of Mesoamerican Civilization.
Current Anthropology 37:1-14.

Blanton, Richard and Gary M. Feinman
1984 The Mesoamerican World System. *American Anthropologist* 86:673-682.

Boileau, Arianner

2012 Preliminary Report on the Middle Preclassic Vertebrate Remains from Pacbitun, Belize. In *Pacbitun Regional archaeological Project (PRAP): Report on the 2011 Field Season*, edited by Terry G. Powis, pp. 94-106. Report Submitted to the Institute of Archaeology, Belmopan, Belize.

Bourdieu, Pierre

1977 *Outline of a Theory of Practice*. Cambridge University Press, Cambridge

Braswell, Geoffrey

2000 Industria lítica clase tallada: Obsidiana. In *El Sitio Maya de Topoxte. Investigaciones en una isla del lago Yaxhá, Petén, Guatemala*, edited by W. Wurster, pp.208-221. Verlag Philipp Von Zabern, Marnz Am Rhein

Braswell, Geoffrey E., John E. Clark, Kazuo Aoyama, Heather I. McKillop and Michael D. Glascock

2000 Determining the Geological Provenance of Obsidian Artifacts from the Maya Region: A Test of the Efficacy of Visual Sourcing. *Latin American Antiquity* 11(3):269-282.

Braswell, Geoffrey E.

2000 Industria lítica clase tallada: Obsidiana. En *El sitio maya de Topozté. Investigaciones en una isla del lago Yaxhá, Petén, Guatemala*, edited by W. Wurster, pp. G208-221. Verlag Phillip Von Zabern, Mamz Am Rhein.

Braswell, Geoffrey E., John E. Clark, Kazuo Aoyama, Heather I. McKillop and Michael d. Glascock

2000 Determining the Geological Provenience of Obsidian Artifacts from the Maya Region. *Latin American Antiquity* 11:269-282.

2010 Procurement and Production of Obsidian Artifacts at Calakmul. In *The Technology of Maya Civilization. Political Economy and Beyond in Lithic Studies*, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 119-129. Equinox, London, Oakville.

Braswell, Jennifer B.

2010 Elite Craft Production of Stone Drills and Slate at Group D, Xunantunich. In *Classic Maya Provincial Politics*, edited by L.J. LeCount and J. Yaeger, pp. 161-183. University of Arizona Press, Tucson.

Brown, M. Kathryn

2007 *Ritual Ceramic Use in the Early and Middle Preclassic at the Sites of Blackman Eddy and Cahal Pech, Belize*. Report at Famsi.

2008 Establishing Hierarchies in the Middle Preclassic Belize River Valley. In *Research Reports in Belizean Archaeology* 5, edited by John Morris, Sherilyne Jones, Jaime Awe and Christophe Helmke, pp. 175-184. Belmopan, Belize.

2009 The Preclassic in the Mopan River Valley: Preliminary Investigations at Nohoch Ek and Xunantunich. In *Research Reports in Belizean Archaeology* 6, edited by John Morris, Sherilyne Jones, Jaime Awe and Christophe Helmke, pp. 63-72. Institute of Archaeology, Belmopan, Belize.

2010 From Sunrise to Sunset: Preliminary Investigations of Preclassic and Postclassic Ritual Activity at Xunantunich, Belize. *Research Reports in Belizean Archaeology* 7, edited by John Morris, Sherilyne Jones, Jaime Awe, George Thompson and Melissa Badillo, pp. 37-44. Institute of Archaeology, Belmopan, Belize.

2013 Missing Persons: The Role of Ancestors in the Rise of Complexity. *Research Reports in Belizean Archaeology* 10, edited by John Morris, Jaime Awe, Melissa Badillo, and George Thompson, pp. 57-64. Institute of Archaeology, Belmopan, Belize.

Brown, M. Kathryn, Jennifer Cochran, Leah McCurdy and David Mixter

2011 Preceramic to Postclassic: A Brief Synthesis of the Occupation History of Group E, Xunantunich. *Research Reports in Belizean Archaeology* 8, edited by John Morris, Melissa Badillo, Jaime Awe, and George Thompson, pp. 209-220. Institute of Archaeology, Belmopan, Belize.

Brown, M. Kathryn and James F. Garber

2005a The Development of Middle Formative Public Architecture in the Maya Lowlands: The Blackman Eddy, Belize Example. In *New Perspectives on Formative Mesoamerican Cultures*, edited by Terry G. Powis, pp. 39-50, BAR International Series 1377.

2005b The Role of Public Architecture and Ritual in the Rise of Complexity: An Example from Blackman Eddy, Belize. In *Research Reports in Belizean Archaeology* 2:53-66, National Institute of Culture and History, Belize.

2005c A Diachronic Architecture, Ritual, and the Emergence of Cultural Complexity: A Diachronic Perspective from the Belize Valley. In *Lords of Creation, The Origins of Sacred Maya Kingship*, edited by Virgiana M. Fields and Dorie Reents-Budet: 46-51. Los Angeles County Museum of Art, Scala Publishers.

Brown, M. Kathryn, James F. Garber and Christopher J. Hartman

- 1999 Evidence of Middle Preclassic Ritual Activity in the Maya Lowlands: An Example from Blackman Eddy, Belize. In *The Belize Valley Archaeology Project: Results of the 1998 Field Season*, edited by James F. Garber, pp.5-21. Manuscript of file, Institute of Archaeology, Belmopan, Belize

Brown, M. Kathryn, Leah McCurdy, Whitney Lytle and Thomas Chapman

- 2013 Recent Investigations of the Mopan Valley Preclassic Project at Xunantunich. *Research Reports in Belizean Archaeology 10*, edited by John Morris, Jaime Awe, Melissa Badillo, and George Thompson, pp. 137-146. Institute of Archaeology, Belmopan, Belize.

Brown, David O., Meredith L. Dreiss and Richard E. Hughes

- 2004 Preclassic Obsidian Procurement and Utilization at the Maya Site of Colha, Belize. *Latin American Antiquity* 15(2):222-240.

Brumfiel, Elizabeth

- 1994 Factional Competition and Political Development in the New World: An Introduction. In *Factional Competition and Political Development in the New World*, edited by Elizabeth Brumfiel, pp. 3-14. Cambridge University Press, Cambridge.

Bullard, William R., Jr

- 1956 The Melhado Site: A House Mound Group in British Honduras. *American Antiquity* 22:29-44.

- 1965 *Stratigraphic Excavations at San Estevan, Northern British Honduras*. Occasional Papers of the Royal Ontario Museum of Art and Archaeology no. 9, Toronto.

Buttles, Palma L.

- 1992 Small finds in Context: The Preclassic Artifacts of Colha, Belize. MA thesis, University of Texas, Austin.

Carneiro, Robert L.

- 1970 A Theory of the Origin of the State. *Science, New Series* 169(3947):733-738.

- 1981 The Chiefdom: Precursor of the State. In *The Transition to Statehood in the New World*, edited by G. D. Jones and R. R. Kautz, pp. 37-79. Cambridge University Press, Cambridge.

- 2003 *Evolution in Cultural Anthropology. A Critical History*. Westview Press, Boulder Colorado.

Carr, Helen S.

- 1985 Subsistence and Ceremony: Faunal Utilization in a Late Preclassic Community at Cerros, Belize. In *Prehistoric Lowland Maya Environment and Subsistence Economy*, edited by Mary Pohl, pp. 115-32. Peabody Museum of Archaeology and Ethnology. Paper 77, Harvard University, Cambridge.

Carrillo Góngora, Zelmy Mariza

- 2003 Los malacates como evidencia arqueológica de la manufactura de algodón durante el periodo clásico en la península de Yucatán. Tesis de Licenciatura, Facultad de Ciencias Antropológicas, Universidad Autónoma de Yucatán, Mérida.

Ceballos Gallaretta, Teresa and Fernando Robles Castellanos

- 2012 Las etapas más tempranas de la alfarería maya en el noroeste de la península de Yucatán. *Ancient Mesoamerica* 23: 403-419.

Cervera, Purificación

- 1996 *Los artefactos líticos de Isla Cerritos*. Tesis de Licenciatura. Universidad Autónoma de Yucatán, Mérida, México.

Chase, Arlene, Diane Chase, Elayne Zorn and Wendy Teeter

- 2008 Textiles and the Maya Archaeological Record: Gender, Power, and Status in Classic Period Caracol, Belize. *Ancient Mesoamerica* 19: 127-142.

Cheetham, David

- 1995 Excavations of Structure B-4, Cahal Pech, Belize: 1994 Operations. In *Belize Valley Preclassic Maya Project: Report on the 1994 Field Season*, edited by P.F. Healy and J.J. Awe, pp. 18-44. Occasional Papers in Anthropology No. 10. Trent University Press, Peterborough, ON.
- 1996 Reconstruction of the Formative Period Site Core of Cahal Pech, Belize. In *Belize Valley Preclassic Maya Project: Report on the 1995 Field Season*, edited by P.F. Healy and J.J. Awe, pp. 1-33. Occasional Papers in Anthropology No. 12. Trent University Press, Peterborough, Ontario.
- 1998 *Interregional Interaction, Symbol Emulation, and the Emergence of Socio-Political inequality in the Central Maya Lowlands*. Master's thesis, Department of Anthropology and Sociology, University of British Columbia.
- 2004 The Role of "Terminus Groups" in Lowlands Maya Site Planning. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 125-148. University Press of Florida, Gainesville.
- 2005 Cunil: A Pre-Mamom Horizon in the Southern Maya Lowlands. In *New Perspectives on Formative Mesoamerican Cultures*, edited by Terry G. Powis, pp. 27-38. BAR International Series 1377. Oxford.

Cheetham, David and Jaime J. Awe

1996 The Early Formative Cunil Ceramic Complex at Cahal Pech. Paper presented at the Annual Meeting of the Society for the American Archaeology, New Orleans.

2002 The Cunil Ceramic Complex, CAhal Pech, Belize. Manuscript on file, Department of Anthropology. Trent University, Peterborough, ON.

Cheetham, Jim Aimers, J. Ferguson, David Lee, L. Delhonde and Al Jenkins

1994 Return to the Suburbs: The Second Season of Investigations at the Zopilote Group, Cahal Pech. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the Sixth (1993) Field Season*, edited by Jaime J. Awe, pp. 164-178. University of London.

Cheetham, David J., Donald W. Forsyth and John Clark

2003 La cerámica pre-Mamom de la Cuenca del Río Belice y del centro del Petén. Las correspondencias y sus implicaciones. In *XVI Simposio de Investigaciones Arqueológicas en Guatemala*, 2002, edited by Juan Pedro Laporte, Barbara Arroyo, Hector Escobedo and Hector Mejia, pp. 609-628. Museo Nacional de Arqueología y Etnología, Guatemala.

Cheetham, David, Julian Vinuales, Milena Bisquet and Cathrine Holgate

1993a A Report of the Second Season of Investigations at the Cas Pek Group, Cahal Pech. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1992 Field Season*, edited by J.J. Awe, pp. 139-151. Trent University, Peterborough, ON.

Cheetham, David, Julian Vinuales, Johana T. Carlsson, Tara Wallis and Piers Wilson

1993b Life in Suburbia: Preliminary Investigation of the Zopilote Group, Cahal Pech, Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1992 Field Season*, edited by J.J. Awe, pp. 152-172. Trent University, Peterborough, ON.

Cheong, Kong

2012 A Description of the Ceramic Musical Instruments Excavated from the North Group of Pacbitun, Belize. In *Pacbitun Pregional Archaeological Project (PRAP). Report on the 2011 Field Season*, edited by Terry G. Powis, pp. 15-29. Report submitted to the Institute of Archaeology, Belmopan.

Clark, John E.

1987 Politics, Prismatic Blades, and Mesoamerican Civilization. In *The Organization of Core Technology*, edited by J.K. Johnson and C.A. Morrow, pp. 259-284. Westview Press, Boulder.

1988 *The Lithic Artifacts of La Libertad, Chiapas*. Papers of the New World Archaeological Foundation, No.52. Brigham Young University, Provo.

Clark, John E. and Michael Blake

- 1994 The Power of Prestige: Competitive Generosity and the Emergence of Rank Societies in Lowland Mesoamerica: In *Factional Competition and Political Development in the New World*, edited by Elizabeth M. Brumfiel and John W. Fox, pp. 17-30. Cambridge University Press, Cambridge.

Clark, John and D. Bryant

- 1997 Technological Typology of Prismatic Blades and Debitage from Ojo de Agua, Chiapas, Mexico. In *Ancient Mesoamerica* 8:111-136.

Clark, John and David Cheetham

- 2002 Mesoamerica's Tribal Foundations. In *Archaeology of Tribal Societies*, edited by William A. Parkinson, pp. 278-339. Archaeological Series 15. International Monographs in Prehistory, Ann Arbor.

Clark, John and Margarita Gaxiola (editors)

- 1989 *La obsidiana en Mesoamérica*. Instituto Nacional de Antropología e Historia, Mexico.

Clark, John and Richard Hansen

- 2001 The Architecture of Early Kingship: Comparative Perspectives on the Origins of the Maya Royal Court. In *Royal Courts of the Ancient Maya*, Vol. 2, edited by Takeshi Inomata and Stephen D. Houston, pp. 1-45. Westview Press, Boulder.

Clutton-Brock, Juliet and Norman Hammond

- 1994 Hot Dogs: Comestible Canids in Preclassic Maya Culture at Cuello, Belize. *Journal of Archaeological Science* 21:819-826.

Cochran, Jennifer L.

- 2009 A Diachronic Perspective of Marine Shell Use from Structure B1 at Blackman Eddy, Belize. MA thesis, University of Texas at Arlington.

Coe, Michael D

- 1977 Olmec and Maya: A Study in Relationships. In *The Origins of Maya Civilization*, edited by Richard E.W. Adams, pp. 198-196. University of New Mexico, Albuquerque.

Coe, Michael D. and Richard A. Diehl

- 1980 *In the Land of the Olmec: The Archaeology of San Lorenzo Tenochtitlan*. University of Texas Press, Austin.

Coe, Sophie D.

- 1994 *America's First Cuisine*. University of Texas Press, Austin.

Coe, William R.

- 1965 Tikal, Guatemala, and emergent Maya civilization. *Science* 147 (3664):1401-1419.

Coe, William R. and Michael Coe

- 1956 Excavations at Nohoch Ek, British Honduras. *American Antiquity* 21 (4): 370-382.

Conlee, Christina A.

- 2004 The Expansion, Diversification, and Segmentation of Power in Late Prehispanic Nasca. *Archaeological Papers of the American Anthropological Association* 14: 211-223.

Conlon, Jim

- 1992 Beyond the Castle Walls: A Report of the 1991 Excavations at the Tzinic Group, Cahal Pech, Belize. In Progress Report of the Fourth Season (1991) of Investigations at Cahal Pech, Belize, edited by Jaime J. Awe and Mark D. Campbell, pp. 69-90. Trent University, Peterborough Ontario.

- 2013 Archaeological Investigations of Structure B-3, Cahal Pech: A Preliminary Report. In Belize Valley Reconnaissance Project. A Report of the 2011 Field Season, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 60-70. Institute of Archaeology, Belmopan, Belize, C.A.

Crasborn Chavarría, José

- 2010 The History of Tak'alik Ab'aj: An Obsidian Perspective. In *The Technology of Maya Civilization. Political Economy and Beyond in Lithic Studies*, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 91-101. Equinox, London, Oakville.

- 1977 Early Maya Development at Tikal, Guatemala. In *Origins of Maya Civilization*, edited by Richard E. Adams, pp. 27-43. University of New Mexico Press, Albuquerque.

Culbert, T. Patrick and Robert L. Rands

- 2007 Multiple Classifications: An Alternative Approach to the Investigation of Maya Ceramic. *Latin American Antiquity* 18:181-190.

Cyphers Guillén, Ann

- 1993 Women, Rituals, and Social Dynamics at Ancient Chalcatzingo. *Latin American Antiquity* 4(3): 209-224.

Dahlin, Bruce H.

- 1984 A Colossus in Guatemala: The Preclassic Maya City of El Mirador. *Archaeology* 37(5):18-25.

Dahlin, Bruce H., Marjukka Bastamow, Timothy Beach, Zachary W. Hruby, Scott R. Hutson and Daniel Mazeau

- 2010 Phantoms Lithics at Chunchucmil, Yucatán, México. In *The Technology of Maya Civilization. Political Economy and Beyond in Lithic Studies*, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 76-87. Equinox, London, Oakville.

Davis, Jeffrey B. and Terry G. Powis

- 2015 El Quemado: Preliminary Findings of Pacbitun's Hidden Structure. In *Pacbitun Regional Archaeological Project (PRAP): Report on the 2014 Field Season*, edited by Terry G. Powis, pp.90-102. Institute of Archaeology, National Institute of History and Culture, Belmopan City, Belize.

DeLance, Lisa L.

- 2015 Preliminary Catalog and Curation of Figurine Fragments from the Sites of Cahal Pech, Blackman Eddy, Pacbitun, Santa Rita, Baking Pot and Xunantunich. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2014 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe, pp. 166-209. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.

DeMarrais, Elizabeth, Luis J. Castillo and Timothy Earle

- 1996 Ideology, Materialization and, Power Strategies. *Current Anthropology* 37(1):15-31.

Derilo Tway, María B.

- 2004 Gender, Context and Figurine Use: Ceramic Images from the Formative Period San Andres Site, Tabasco, Mexico. MA Thesis, The Florida State University.

Dietler, Michael and Brian Hayden

- 2001 Digesting the Feast—Good to Eat, Good to Drink, Good to Think: An Introduction, In *Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by Michael Dietler and Brian Hayden, pp. 1-20. Smithsonian Institution Press, Washington and London.

Douglas, John E. and Linda J. Brown

- 2013 Summary Field Report: Excavations at Cahal Pech, January 2012. In *Belize Valley Reconnaissance Project. A Report of the 2012 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 35-58. Institute of Archaeology, Belmopan, Belize, C.A.

Doyle, James A., Stephen Houston, Edwin Román, Thomas Garrison, Timothy Beach and Aheryl Luzzadder-Beach

- 2012 El Palmar, Petén, Guatemala y las vías de la época Preclásica en el límite sur de la Meseta Kárstica Central. In *XXV Simposio de Investigaciones Arqueológicas*

en Guatemala, 2011, edited by Bárbara Arroyo, Lorena Paiz, Héctor Mejía, pp.837-844. Museo Nacional de Arqueología y Etnología, Guatemala.

Dreiss, M. L. and D. O. Brown

- 1989 Obsidian Exchange Patterns in Belize. In *Prehistoric Maya Economies of Belize*, edited by P. A. McAnany and B. L. Isaac, pp. 57-90. Research in Economic Anthropology. Supplement 4. JAI Press, Greenwich, CT.

Drennan, Robert D.

- 1984a Long-distance Movement of Goods in the Mesoamerica Formative and Classic. *American Antiquity* 49:27-43.
- 1984b Long-distance Transport in Prehispanic Mesoamerica. *American Anthropologists* 86:105-112.
- 1991 Pre-Hispanic Chiefdom Trajectories in Mesoamerica, Central America, and Northern South America. In *Chiefdoms: Power, Economy, and Ideology*, edited by Timothy K. Earle, pp. 263-287. Cambridge University Press, Cambridge.
- 2000 Games, Players, Rules and Circumstances. Looking for Understandings of Social change at Different Levels. In *Cultural Evolution: Contemporary Viewpoints*, edited by Gary M. Feinman and Lind R. Manzanilla, pp. 177-196. Kluwer Academic / Plenum Publishers, New York.

Drucker, P.

- 1943 *Ceramic Stratigraphy at Cerro de las Mesas, Veracruz, Mexico*. Bureau of American Ethnology, Bulletin No. 141.

Earle, Timothy

- 1987 Chiefdoms in Archaeological and Ethnohistorical Perspectives. *Annual Review of Anthropology* 16:279-308.
- 1991 The Evolution of Chiefdoms. In *Chiefdoms: Power, Economy and Ideology*, edited by Timothy Earle, pp. 1-15. Cambridge University Press, Cambridge.
- 1997 *How Chiefs Come to Power: The Political Economy in Prehistory*. Stanford University Press, Stanford.
- 2002 *Bronze Age Economics: The Beginnings of Political Economies*. Westview Press, Boulder.

Eaton, Jack D.

- 1974 Shell Celts from Coastal Yucatan, Mexico. *Bulletin of the Texas Archaeological Society* 45:197-208.

Ebert, Claire E.

- 2015 Chemical Characterization of Obsidian Artifacts from Cahal Pech and Lower Dover, Belize. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2014 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe, pp. 210-221. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.

Ebert, Claire E., Brendan J. Culleton, Jaime J. Awe and Douglas J. Kennet

- 2016 AMS 14C Dating of Preclassic to Classic Period Household Construction in the Ancient Maya Community of Cahal Pech, Belize. *Radiocarbon* 1-19.

Ebert, Claire E., M. Denisson, K.G. Hirth, S.B. McClure and D.J. Kennet

- 2014 Formative Period Obsidian Exchange along the Pacific Coast of Mesoamerica. *Archaeometry* 57:54-73.

Elbroch, Mark

- 2006 *Animal Skulls: A Guide to North American Species*. Stackpole Books, Mechanicsburg, Pennsylvania

Elson, Mark D. and David R. Abbott

- 2000 Organization Variability in Platform Mound-Building Groups of the American Southwest. In *Alternative Leadership Strategies in the Prehispanic Southwest*, edited by B.J. Mills, pp. 117-135. University of Arizona Press, Tucson, AZ.

Emery, Kitty F.

- 2003 The Noble Beast: Status and Differential Access to Animals in the Maya World. *World Archaeology* 34(3): 489-515.

- 2007 Aprovechamiento de la Fauna en Piedras Negras: Dieta. Ritual y Artesanía del Periodo Clásico Maya. *Mayab* 19:51-69.

- 2008 Techniques of Ancient Maya Bone Working: Evidence from a Classic Maya Deposit *Latin American Antiquity* 19(2): 204-221.

- 2009 Perspectives on Ancient Maya Bone Crafting from a Classic Period Bone-Artifact Manufacturing Assemblage. *Journal of Anthropological Archaeology* 28: 458-470.

Emery, Kitty F. and Kazuo Aoyama

- 2007 Bone Tools Manufacturing in Elite Maya Households at Aguateca, Guatemala. *Ancient Mesoamerica* 18:69-89.

Englehardt, Joshua D. and Donna M. Nagle

- 2011 Variations on a Theme: dual-Processual Theory and the Foreign Impact on Mycenaean and Classic Maya Architecture. *American Journal of Archaeology* 115 (3):355-382.

Espinosa, Manuel, Ventura Rodríguez, Ma. Del Rosario Domínguez, William Folan and Heajoo Chung

- 2001 Estudio Preliminar de las Herramientas de pedernal procedentes de Calakmul a través de herramientas analíticas. *Los Investigadores de la Cultura Maya* 9:267-283. Universidad Autónoma de Campeche, Campeche.

Estrada-Belli, Francisco

- 2011 *The First Maya Civilization. Ritual and Power before the Classic Period*. Routledge, London and New York.

Faust, Katherine A. and Christina T. Halperin

- 2009 Approaching Mesoamerican Figurines. In *Mesoamerican Figurines: Small-Scale Indices of Large-Scale Social Phenomena*, edited by Christina T. Halperin, Katherine A. Faust, Rhonda Taube, and Aurore Giguet, 1–22. University Press of Florida, Gainesville.

Fedick, Scott

- 1989 The Economics of Agricultural Land Use and Settlement in the Upper Belize Valley. In *Prehistoric Maya Economies of Belize*, edited by Patricia A. McAnany and Barry L. Isaac, pp. 215-253. Research in Economic Anthropology 4. JAI Press Inc., Greenwich, London.

Feinman, Gary M.

- 1995 The Emergence of Inequality. A Focus on Strategies and Processes. In *Foundation of Social Inequality*, edited by T. Douglas Price and Gary M. Feinman, pp. 255-279. Plenum Press, New York.
- 2000 Dual-Processual Theory and Social Formation in the Southwest. In *Alternative Leadership Strategies in the Prehispanic Southwest*, edited by B.J. Mills, pp. 207-224. University of Arizona Press, Tucson, AZ.
- 2001 Mesoamerican Political Complexity. The Corporate-Network Dimension. In *From Leaders to Rulers*, edited by Jonathan Haas, pp. 151-175. Kluwe Academic, Plenum Publishers, New York, Boston, Dordrecht, London, Moscow.
- 2010 A Dual-Processual Perspective on the Power and Inequality in the Contemporary United States: Framing Political Economy for the Present and the Past. In *Pathways to Power. New Perspective on the Emergence of Social Inequality*, edited by T. Douglas Price and Gary M. Feinman, pp. 255-288. Springer, New York.

Feinman, Gary M. and Jill Neitzel

- 1984 Too Many Types: An Overview of Sedentary Prestate Societies in the Americas. *Advances in Archaeological Method and Theory* 7:39-102.

Feinman, Gary M., Kent G. Lightfoot and Steadman Upham

- 2000 Political Hierarchies and Organization Strategies in the Puebloan Southwest. *American Antiquity* 65(3): 449-470.

Ferguson, Josalyn, Tina Christensen and Sonja Schwake

- 1996 The Eastern Ballcourt, Cahal Pech, Belize: 1995 Excavations. In *Belize Valley Preclassic Maya Project: Report on the 1995 Field Season*, edited by Paul F. Healy and Jaime J. Awe, PP. 34-58. Trent University, Peterborough, ON.

Fernández Souza, Lilia and Nancy Peniche May

- 2011 Esferas de actividad en el espacio doméstico del Norte de Yucatán. Un estudio etnoarqueológico. In *Localidad y globalidad en el mundo maya prehispánico e indígena contemporáneo. Estudios de espacio y género*, edited by Miriam J. Gallegos Gómora and Julia A. Hendon, pp. 167-178. Instituto Nacional de Antropología e Historia.

Flannery, Kent V.

- 1972 Cultural Evolution of Civilization. *Annual Review of Ecology and Systematics* 3:399-426.

- 1976 *The Early Mesoamerican Village*. Academic Press, New York.

- 1994 Childe the Evolutionist: A Perspective from Nuclear America. In *The Archaeology of V. Gordon Childe: Contemporary Perspectives*, edited by David R. Harris, pp. 101-119. University College, London.

- 1998 The Ground Plans of Archaic States. In *Archaic States*, edited by Gary M. Feinman and Joyce Marcus, pp. 15-58. School of American Research Press, Santa Fe.

- 1999 Chiefdoms in the Early Near East: Why It's so Hard to Identify Them. In *The Iranian World. Essays on Iranian Art and Archaeology*, edited by Abbas Alizadeh, Yousef Majidzadeh and Sadegh M. Shahmirzadi, pp. 44-63. Iran University Press.

Flannery, Kent V and Joyce Marcus

- 1976 Formative Oaxaca and the Zapotec Cosmos. *American Scientist* 64: 374-383.

- 1994 Early Formative Pottery of the Valley of Oaxaca, Mexico. University of Michigan Museum of Anthropology, Memoir 27. University of Michigan, Ann Arbor.

Foias, Antonia

- 2013 *Ancient Maya Political Dynamics*. University Press of Florida, Gainesville.

Follensbee, Billie J.A.

- 2008 Fiber Technology and Weaving in Formative Gulf Coast Cultures. *Ancient Mesoamerica* 19:87–110.

- 2013 Unsexed Images, Gender-Neutral Costume, and Gender-Ambiguous Costume in Formative Period Gulf Coast Cultures. In *Wearing Culture: Dress and Regalia in Early Mesoamerica and Central America*, edited by Heather Orr and Matthew G.Looper, pp. 207-252. University of Press Colorado

Ford, Anabel

- 1986 *Population Growth and Social Complexity: An Examination of Settlement and Environment in the Central Maya Lowlands*. Anthropological Research Papers No. 35. Arizona State University, Tempe.

- 2004 Integration among Communities, Center, and Regions. The Case from El Pilar. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 238-256. University Press of Florida, Tallahassee.

Ford, Anabel and K. Olson

- 1989 Aspects of Ancient Maya Household Economy: Variation in Chipped Stone Production and Consumption. In *Prehistoric Maya Economies of Belize*, edited by P. A. McAnany, pp. 185-211. Research in Economic Anthropology, Supplement 4. JAI Press, Greenwich, CT.

Ford, Anabel, Fred Stross, Frank Asaro, Helen V. Michel

- 1997 Obsidian Procurement and Distribution in the Tikal-Yaxha Intersite Area of the Central Maya Lowlands. *Ancient Mesoamerica* 8:101-110.

Foucault, Michel

- 1970 *The Order of Things. An Archaeology of the Human Sciences*. Routledge, London.

Freiwald, Carolyn R.

- 2010 "Dietary Diversity in the Upper Belize River Valley: A Zooarchaeological and Isotopic Perspective." *Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Ancient Mesoamerica*, edited by J. E. Staller and M. D. Carrasco, pp. 399-420. Springer. New York.

Fried, Morton H.

- 1967 *The Evolution of Political society. An Essay in Political Anthropology*. McGraw-Hill, New York, St. Luis, San Francisco.

Friedman, Jonathan and Michael Rowlands

- 1977 Notes towards and Epigenetic Model of the Evolution of Civilisation. In *The Evolution of Social Systems*, edited by Jonathan Friedman and Michael J. Rowlands, pp. 201-276. Duckworth, London.

Gallareta Negrón, Tomás, George J. Bey III and William M. Ringle

- 2002 Investigaciones arqueológicas en las ruinas de Kiuic y la zona Labná-Kiuic, distrito de Bolonchén, Yucatán, México. Temporada 2001. Informe técnico al Consejo de Arqueología del Instituto Nacional de Antropología e Historia, Mérida, Yucatán, México.

Gallareta Negrón, Tomás and William M. Ringle

- 2004 The Transition from the Middle to the Late Preclassic in northern Yucatan: New Perspectives from the Puuc. Paper presented at the 103rd Annual Meeting of the American Anthropological Association, Atlanta.

Gamble, Lynn H., Phillip J. Walker and G. S. Russell

- 2002 Further Considerations of the Emergence of Chumash Chiefdoms. *American Antiquity* 67(4): 772-777.

Garber, James F.

- 1989 *Archaeology at Cerros, Belize, Central America: Volume II, The Artifacts*. Southern Methodist University Press, Dallas.

Garber, James F. and Jaime J. Awe

- 2006 Excavations in Plaza B at Cahal Pech: The 2004 Field Season. *Research Reports in Belizean Archaeology* 3: 39-52. Institute of Archaeology, Belize.
- 2008 Middle Formative Architecture and Ritual at Cahal Pech. In *Research reports in Belizean Archaeology* 5:185-190. National Institute of Culture and History, Belmopan, Belize.
- 2009 A Terminal Early Formative Symbol System in the Maya Lowlands: The Iconography of the Cunil Phase (1100-900BC) at Cahal Pech. *Research Reports in Belizean Archaeology* 6:151-159.

Garber, James F., M. Kathy Brown and C. J. Hartman

- 1997 Excavations on Structure B1 at Blackman Eddy: Results of the 1996 Field Season, In *The Belize Valley Archaeology Project: Results of the 1996 Field Season*, edited by James F. Garber and D.M. Glassman, pp. 6-33. Southwest Texas State University, San Marcos.

Garber, James F., M. Kathryn Brown and Christopher J. Hartman

- 2002 *The Early/Middle Formative Kanocha Phase (1200-850Bc) at Blackman Eddy, Belize*. Report at Famsi.

- Garber, James F., M. Kathryn Brown, Jaime J. Awe, and Christopher J. Hartman
 2004 Middle Formative Prehistory of the Central Belize Valley: An Examination of Architecture, Material Culture, and Sociopolitical Change at Blackman Eddy. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 25-47. University Press of Florida, Tallahassee.
- Garber, James, Jennifer Cochran and Jaime Awe
 2005 Excavations in Plaza B at Cahal Pech: The 2004 Field Season. In *The Belize Valley Archaeological Project: Results of the 2004 Field Season*, edited by James F. Garber, pp. 4-41. Texas State University, San Marcos.
- 2007 The Middle Formative Ideological Foundations of Kingship: The Case from Cahal Pech, Belize. *Research Reports in Belizean Archaeology* 4:169:175.
- Garber, James F., Jennifer L. Cochran, Lauren A. Sullivan and Jaime Awe
 2006 Excavations in Plaza B at Cahal Pech: The 2005 Field Season. In *The Belize Valley Archaeological Project: Results of the 2005 Field Season*, edited by James F. Garber, pp. 4-30. Texas State University, San Marcos.
- 2007 Excavations in Plaza B at Cahal Pech: The 2006 Field Season. In *The Belize Valley Archaeological Project: Results of the 2006 Field Season*, edited by James F. Garber, pp. 4-26. Texas State University, San Marcos.
- Garber, James F., Sherman W. Horn, III and Jaime J. Awe
 2008 Excavations in Plaza B at Cahal Pech: The 2007 Field Season. In *The Belize Valley Archaeological Project: Results of the 2007 Field Season*, edited by James F. Garber, pp. 4-26. Texas State University, San Marcos.
- Garber, James F., Amy Benton, Whitney Lytle, Marta Salazar and Jaime J. Awe
 2009 Excavations in Plaza B at Cahal Pech: The 2008 Field Season. In *The Belize Valley Archaeological Project: Results of the 2008 Field Season*, edited by James, F. Garber, pp. 4-16. Texas State University, San Marcos.
- Garber, James, Sherman Horn III and Jaime Awe
 2010 Excavations in Plaza B at Cahal Pech: The 2009 Field Season. In *The Belize Valley Archaeological Project: Results of the 2009 Field Season*, edited by James F. Garber, pp. 4-27. Texas State University, San Marcos.
- Gerhardt, Juliette C.
 1988 *Preclassic Architecture at Cuello, Belize*. BAR International Series 464. Oxford.

Gerhardt, Juliette C. and Norman Hammond

- 1991 The Community at Cuello. The Ceremonial core. In *Cuello an Early Maya Community in Belize*, edited by Norman Hammond. Cambridge University Press, Cambridge.

Gifford, James C.

- 1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley. Memoirs of the Peabody Museum of Archaeology and Ethnology* 18. Cambridge, MA: Harvard University.

Gilbert, B. M.

- 2003 *Mammalian Osteology* Missouri Archaeological Society, Columbia.

Ginell, William.S. and Rakesh Kumar

- 2004 Limestone Stabilization Studies at a Maya Site in Belize. In *Biodeterioration of Stone Surfaces*, edited by L- St. Clair and M. Seaward, pp. 19-44. Kluwer Academic Publishers.

Goldman, Irving

- 1970 *Ancient Polynesian Society*. University of Chicago Press, Chicago.

Goldstein, Paul S.

- 2000 Exotic Goods and Everyday Chiefs: Long-distance Exchange and Indigenous Sociopolitical Development in the South Central Andes. *Latin American Antiquity* 11(4): 335-361.

Glascok, Michael d., Geoffrey E. Braswell and Roert H. Cobean

- 1998 A Systematic Approach to Obsidian Source Characterization. *Archaeological Obsidian Studies. Method and Theory*, edited by M. Steven Shackley pp. 15-65. Plenum Press, New York.

Graham, Elizabeth A.

- 1987 Resource Diversity in Belize and Its Implications for Models of Lowland Maya Trade. *American Antiquity* 52(4):753-767.

Graham, Ian

- 1967 *Archaeological Explorations in El Peten, Guatemala*. Middle American Research Institute 33. Tulane University, New Orleans.

Grove, David C. and Susan D. Gillespie

- 1984 Chalcatzingo's Portrait Figurines and the Cult of the Ruler. *Archaeology* 37(4):27-33.

- 1992 Archaeological Indicators of Formative Period Elite: A Perspective from Central Mexico. In *Mesoamerican Elites. An Assessment*, edited by Diane Chase and Arlen Chase, pp. 191-205. University of Oklahoma Press.
- 2002 Middle Formative Domestic Ritual at Chalcatzingo, Morelos. In *domestic Ritual in Ancient Mesoamerica*, edited by Patricia Plunket, pp. 11-19. Cotsen Institute of Archaeology Monograph 46. Los Angeles, CA.
- Guderjan, Thomas H.
 2007 *The Nature of an Ancient Maya City. Resources, Interaction, and Power at Blue Creek, Belize*. The University of Alabama Press, Tuscaloosa.
- Haas, Jonathan
 1982 *The Evolution of the Prehistoric State*. Columbia University Press, New York.
- Haberland, W.
 1958 An Early Mound at Louisville, British Honduras. *Man* 58:128-129.
- Haines, Helen R.
 1997 Continuing Excavations of Preclassic Deposits at Structure 9. In *Blue Creek Project: Working Papers from the 1996 Field Season*, edited by W. D. Driver, H. L. Clagett and H. R. Haines, pp. 19-24. Mara Research Program, St. Mary's University, San Antonio.
- Halperin, Cristina
 2008 Classic Maya Textile Production: Insights from Motul de San José, Peten, Guatemala. *Ancient Mesoamerica* 19:111-125.
- 2014 *Maya Figurines. Intersections between State and Household*. University Press, Austin.
- Halperin, Cristina, Sergio Garza, Keith M. Prufer and James E. Brady
 2003 Caves and Ancient Maya Ritual Use of Jute. *Latin American Antiquity* 14:207-219.
- Hammond, Norman
 1980 Early Maya Ceremonial at Cuello, Belize. *Antiquity* 54:176-190.
- 1982 The Prehistory of Belize. *Journal of Field Archaeology* 9(3):349-362.
- 1989 The Function of Maya Middle Preclassic Pottery Figurines. *Mexicon* 11:111-114.

- 1999 The Genesis of Hierarchy: Mortuary and Offertory Ritual in the Pre- Classic at Cuello, Belize. In *Social Patterns in Pre-Classic Mesoamerica*, edited by D. C. Grove and Rosemary A. Joyce, pp. 49-66. Dumbarton Oaks, Washington, D.C.

Hammond, Norman (editor)

- 1991 *Cuello: An Early Maya Community in Belize*. Cambridge University Press, Cambridge.

Hammond, Norman and Juliette C. Gerhardt

- 1990 Early Maya Architectural Innovation at Cuello, Belize. *World Archaeology* 21(3):461-481.

Hammond, Norman, Duncan Pring, R. Berger, R. Switsur and A.P. Ward

- 1976 Radiocarbon Chronology for Early Maya Occupation at Cuello, Belize. *Nature* 260:579-581.

Hammond, Norman, Duncan Pring, Richard Wilk, Sara Donaghey and Frank P. Saul,

- 1979 The Earliest Lowland Maya? Definition of the Swasey Phase. *American Antiquity*, 44: 92-110

Hammond, Norman, Amanda Clarke and Cynthia Robin

- 1991 *Middle Preclassic Buildings and Burials at Cuello, Belize: 1990 Investigations* 2(4): 352-363.

Hammond, Norman, Amanda Clarke and Francisco Estrada Belli

- 1992 Middle Preclassic Maya Buildings and Burials at Cuello, Belize. *Antiquity* 66:955-964.

Hammond, Norman, Amanda Clarke and Sara Donaghey

- 1995 The Long Goodbye: Middle Preclassic Maya Archaeology at Cuello, Belize. *Latin American Antiquity* 6(2):120-128.

Hansen, Richard D.

- 1991 Resultados preliminares de las investigaciones arqueológicas en el sitio Nakbe, Petén, Guatemala. In *II Simposio de Investigaciones Arqueológicas en Guatemala, 1988*, edited by Juan Pedro Laporte, S. Villagrán, Héctor Escobedo, D. de González and Juan Valdés, pp.163-178. Museo Nacional de Arqueología y Etnología, Guatemala.

- 1992 Proyecto Regional de Investigaciones Arqueológicas del Norte de Petén, Guatemala: Temporada 1990. In *IV Simposio de Investigaciones Arqueológicas en Guatemala, 1990* edited by Juan Pedro Laporte, Héctor Escobedo and S. Brady, pp.1-28. Museo Nacional de Arqueología y Etnología, Guatemala.

- 1993 Investigaciones del sitio arqueológico Nakbé: Temporada 1989. In *III Simposio de Investigaciones Arqueológicas en Guatemala, 1992*, edited by Juan Pedro Laporte, Héctor Escobedo and S. Villagrán, pp. 115-122. Museo Nacional de Arqueología y Etnología, Guatemala, Guatemala.
- 1998 Continuity and Disjunction: Preclassic Antecedents of Classic Maya Architecture. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp. 42-122. Dumbarton Oaks, Washington, D.C.
- 2000 Ideología y arquitectura: Poder y dinámicas culturales de los mayas del periodo Preclásico en las tierras bajas. In *Memoria de la Segunda Mesa Redonda de Palenque. Arquitectura e ideología de los antiguos mayas*, edited by Silvia Trejo, pp. 71-108. CONACULTA, INAH, México D.F., México.
- 2002 The Architectural Development of an Early Maya Structure at Nakbé, Petén, Guatemala. In <http://www.famsi.org/reports/95113/95113Hansen01.pdf>
- 2005 Perspectives on Olmec-Maya Interaction in the Middle Formative Period. In *New Perspectives on Formative Mesoamerican Cultures*, edited by Terry G. Powis, pp. 51-72. BAR International Series 1377, Oxford.
- Hartman, Christopher J., M. Kathryn Brown, Jonathan Pagliaro and Jennifer McWilliams
1999 The 1998 Investigations on Structure B1 at the Site of Blackman eddy, Belize. Results of Excavations in Operations 15n, 18a, and 19a. In *The Belize Valley Archaeology Project: Results of the 1998 Field Season*, edited by James F. Garber and M. Kathryn Brown, pp. 68-91. Institute of Archaeology, Belmopan.
- Harry, Karen G. and James M. Baynman
2000 Leadership Strategies among the Classic Period Hohokam: A Case Study, pp. *Alternative Leadership Strategies in the Prehispanic Southwest*, edited by Barbara J. Mills, pp- 136-153. The University of Arizona Press.
- Hayden, Brian
2001 Fabulous Feasts: A Prolegomenon to the Importance of Feasting. In *Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by Michael Dietler and Brian Hayden, pp. 23-64. Smithsonian Institution Press, Washington and London.
- Hayden, B. and R. Gargett
1990 Big Man, Big Heart?: A Mesoamerican view of the Emergence of Complex Society. *Ancient Mesoamerica* 1:3-20.
- Healy, Paul F.
1990 Excavations at Pacbitun, Belize: Preliminary Report on the 1986 and 1987 Investigations. *Journal of Field Archaeology* 17: 247-262

Healy, Paul F. and Jaime J. Awe

- 1995 Radiocarbon Dates from Cahal Pech, Belize: Results from the 1994 Field Season. In *Belize Valley Preclassic Maya Project: Report on the 1994 Field Season*, edited by Paul F. Healy and Jaime Awe, pp. 198-216. Trent University, Peterborough.

Healy, Paul F. and Marc G. Blainey

- 2011 Ancient Maya Mosaic Mirrors: Function, symbolism, and Meaning. *Ancient Mesoamerica* 22:229-244.

Healy, Paul F., Kitty Emery and Lori Wright

- 1990 Ancient and Modern Maya Exploitation of the Jute Snail (*Pachychilus*). *Latin American Antiquity* 1: 170-183.

Healy, Paul F., David Cheetham, Terry G. Powis and Jaime J. Awe

- 2004 Cahal Pech. The Middle Formative Period. In *Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*, edited by James F. Garber, pp. 103-124. University Press of Florida, Tallahassee.

Healy, Paul F., Jaime J. Awe, Gyles Ianonne and Cassandra Bill

- 1995 Pacbitun (Belize) and the Ancient Maya Use of Slate. *Antiquity* 69:337-348.

Hearth, Nicholas F. and Scott L. Fedick

- 2010 Defining Chert Paucity Problem in the Northern Maya Lowlands. In *The Technology of Maya Civilization. Political Economy and Beyond in Lithic Studies*, edited by Zachary X. Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 69-75. Equinox, London, Oakville.

Helms, Mary W.

- 1993 *Craft and the Kingly Ideal: Art, Trade, and Power*. University of Texas Press, Austin.

Hendon, Julia A.

- 2000 Round Structures, Household Identity, and Public Performances in Preclassic Maya Society. *Latin American Antiquity* 11(3):299-301.
- 2003 In the House: Maya Nobility and their Figurine-Whistles. *Expedition* 45:28-33.
- 2006 Textile Production as Craft in Mesoamerica: Time, Labor, and Knowledge. *Journal of Social Archaeology* 6:354-378.

Hepp, Guy D. and Arthur A. Joyce

- 2013 Nine from Flesh to Clay: Formative Period Iconography from Oaxaca's Lower Río Verde Valley. In *Polity and Ecology in Formative Period Coastal Oaxaca*, edited by Arthur A. Joyce, pp. 265-299. University Press Colorado.

- Hernández Álvarez, Héctor and Nancy Peniche May
 2012 Los malacates arqueológicos de la Península de Yucatán. *Ancient Mesoamerica* 23:441-459.
- Hester, Thomas R. and Norman Hammond (editors)
 1976 *Maya Lithic Studies: Papers from the 1976 Belize Field Symposium*. Center for Archaeological Research, Special Report 4. University of Texas at San Antonio.
- Hester, Thomas R. and Harry J. Shafer
 1984 Exploitation of Chert Resources by the Ancient Maya of Northern Belize, Central America. *World Archaeology* 16(2):157-173.
- 1991 *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. Monographs in World Archaeology, No. 1. Prehistory Press, Madison, WI.
- Hirth, Kenneth
 1992 Interregional Exchange as Elite Behavior. An Evolutionary Perspective. In *Mesoamerican Elites: An Archaeological Assessment*, edited by Diane Chase and Arlen Chase, pp. 18-29. University of Oklahoma Press.
- Hirth, Kenneth, Ann Cyphers, Robert Cobean, Jason De León and Michael Glascock
 2013 Early Olmec Obsidian Trade and Economic Organization at San Lorenzo. *Journal of Archaeological Science* 40:2784-2798.
- Hohman, Bobbi M.
 2002 *Preclassic Maya Shell Ornament Production in the Belize Valley, Belize*. Ph.D. Dissertation. The University of New Mexico, Albuquerque, New Mexico.
- Hohman, Bobbi M. and Terry Powis
 1996 The 1995 Excavations at Pacbitun, Belize: Investigations of the Middle Formative Occupation in Plaza B. In *Belize Valley Preclassic Maya Project: Report on the 1995 Field Season*, edited by Paul Healy and Jaime J. Awe, pp. 98-117. Occasional Papers in Anthropology 12. Trent University, Peterborough.
- Horn III, Sherman W.
 2015 *The Web of Complexity: Socioeconomic Networks in the Middle Preclassic Belize Valley*. PhD Dissertation. Tulane University, New Orleans.
- Hruby, Zachary X., Geoffrey E. Braswell and Oswaldo Chinchilla Mazariegos
 2010 *The Technology of Maya Civilization. Political Economy and Beyond in Lithic Studies*. Equinox, London, Oakville.
- Iannone, Gyles
 1993 Time among the Thorns: Results of the 1992 Field Season at Zubin, Cayo District, Belize. In *Belize Valley Reconnaissance Project. Progress Report of the*

1992 *Field Season*, edited by Jaime J. Awe, pp. 10-44. Trent University, Peterborough Ontario.

- 1994 More Time among the Thorns: Results of the 1993 Field Season at Zubin, Cayo District, Belize. In *Belize Valley Reconnaissance Project. Progress Report of the Sixth (1993) Field Season*, edited by Jaime J. Awe, pp. 32-108. Trent University, Peterborough Ontario.
- 1995 One Last Time among the Thorns: Results of the 1994 Field Season at Zubin, Cayo District, Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1994 Field Season, Vol. 1*, edited by G. Iannone and J.M. Conlon, pp. 11-122. Institute of Archaeology, London, UK.
- 1996 Problems in the Study of Ancient Maya Settlement and Social Organization: Insights from the "Minor Center" of Zubin, Cayo District, Belize. Unpublished Ph.D Dissertation, Institute of Archaeology, University of London, London.

Inomata, Takeshi

- 2001 The Power and Ideology of Artistic Creation: Elite Craft Specialists in Classic Maya Society. *Current Anthropology* 42(3):321-349.
- 2014a Negotiation of Inalienability and Meanings at the Classic Maya Center of Aguateca, Guatemala. *Archaeological Papers of the American Anthropological Association* 23(1):128-141.
- 2014b Plaza Builders of the Preclassic Maya Lowlands. The Construction of a Public Space and a Community at Ceibal, Guatemala. In *Mesoamerican Plazas Arenas of Community and Power*, edited by Kenichiro Tsukamoto and Takeshi Inomata, pp. 19-33. The University of Arizona Press, Tucson.

Inomata, Takeshi and Markus Eberl

- 2014 Stone Ornaments and Other Stone Artifacts. In *Life and Politics at the Royal Court of Aguateca: Artifacts, Analytical Data, and Synthesis*, edited by Takeshi Inomata and Daniela Triadan, pp. 84-118. The University of Utah Press, Salt Lake City.

Inomata, Takeshi, Jessica MacLellan, Daniel Triadan, Jessica Munson, Melissa Burham, Kazuo Aoyama, Hiroo Nasu, Flory Pinzón and Hitoshi Yonenobu

- 2015 Development of Sedentary Communities in the Maya Lowlands: Coexisting Mobile Groups and Public Ceremonies at Ceibal, Guatemala. *PNAS* 112:4268-4273.

Inomata, Takeshi, Daniela Triadan, Kazuo Aoyama, Victor Castillo and Hitoshi Yonenobu

- 2013 Early Ceremonial Constructions at Ceibal, Guatemala, and their Origins of Lowland Maya Civilization. *Science* 340: 467-471.

Isaza Aizpuruia, Ilean Isel

- 2004 The Art of Shell Working and the Social Uses of Shell Ornaments. In *K'axob: Ritual, work and Family in an Ancient Maya Village*, edited by Patricia A. McAnany, pp. 335-351. Cotsen Institute of Archaeology, University of California, Los Angeles.

Isaza Aizpuruia, Ilean Isel and Patricia McAnany

- 1999 Adornment and Identity: Shell ornaments from Formative K'axob. *Ancient Mesoamerica* 10:117-127.

Isbell, William H. and Katharina J. Schreiber

- 1978 Was Huari a State? *American Antiquity* 43(3):372-389.

Ishihara-Brito, Reiko and Jaime J. Awe

- 2013 Excavations on Cahal Pech Structure B-4. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 118-127. Institute of Archaeology, Belmopan, Belize, C.A.

Ishihara-Brito, Jorge Can and Jaime Awe

- 2013 Excavations and Conservation of Structure B-1 West Face. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 71-89. Institute of Archaeology, Belmopan, Belize, C.A.

Jackson, Thomas L. and Michael W. Love

- 1991 Blade Running: Middle Preclassic Obsidian Exchange and the Introduction of Prismatic Blades at La Blanca, Guatemala. *Ancient Mesoamerica* 2:47-59.

Johnson, Allen W.

- 1982 Organization Structure and Scalar Stress. In *Theory and Explanation in Archaeology: The Southampton Conference*, edited by Colin Renfrew, Michael J. Rowlands and Barbara Abbott Segraves, pp. 389-421. Academic Press, New York.

Johnson, Allen W. and Timothy K. Earle

- 2000 *The Evolution of Human Societies: from Foraging to Agrarian State*. Stanford University Press, Stanford.

Junker, Laura L.

- 1999 *Raiding, Trading and Feasting: The Political Economy of Philippine Chiefdoms*. University of Hawai'i Press.

Kamp, Kathryn A., John C. Whittaker, Rafael Guerra, Kimberly McLean, Peter Brands, y José V. Guerra Awe

- 2006 A Ritual Spindle Whorl Deposit from the Late Classic Maya Site of El Pilar, Belize. *Journal of Field Archaeology* 31:411–423.

Kappelman, Julia G. and F. Kent Reilly III

- 2001 *Paths to Heaven, Ropes to Earth: Birds, Jaguars, and Cosmic Cords in Formative Period Mesoamerica*. Center for Ancient American Studies, Washington.

Keller, Angela H.

- 2012 Creating Community with Shell. In *Chan: An Ancient Maya Farming Community*, edited by Cynthia Robin, pp. 253-270. University Press of Florida, Gainesville.

Kersey, Kimberly M.

- 2006 Emerging Elite Economies: Formative Period Obsidian Distribution in the Belize River Valley. In *The Belize Valley Archaeology Project: Results of the 2004 Field Season*, edited by J.F. Garber, pp. 31-62. Report submitted to the Institute of Archaeology, Belmopan, Belize.

Kingsnorth, Alice

- 1993 Complexities of Complexity: An Anthropological Concern. *Bulletin of the American Schools of Oriental Research* 292:107-120.

Kirch, Patrick V.

- 1991 Chiefship and Competitive Involution: The Marquesas Islands of Eastern Polynesia. In *Chiefdoms: Power, Economy and Ideology*, edited by Timothy Earle, pp. 119-146. Cambridge University Press.

- 2012 *A Shark Going Inland is my Chief: The Island Civilization of ancient Hawai'i*. University of California Press, Berkeley.

Kolb, Michael J.

- 1994 Monumentality and the Rise of Religious Authority in Precontact Hawai'i. *Current Anthropology* 35:521-547.

Kosakowski, Laura J.

- 1987 *Preclassic Maya Pottery at Cuello, Belize*. Anthropological Papers of the University of Arizona. No. 47. University of Arizona Press, Tucson.

Kosakowski, Laura, Anna C. Novotny, Angela H. Keller, Nicholas F. Hearsh and Carmen Ting

- 2012 Contextualizing Ritual Behavior. Caches, Burials and Problematic Deposits from Chan's Community Center. In *An Ancient Maya Farming Community*, edited by Cynthia Robin, pp. 289-319. University of Press Florida, Florida.

Kosakowski, Laura J. and Duncan Pring

- 1991 Ceramic Chronology and Typology. In *Cuello: An Early Maya Community in Belize*, edited by Norman Hammond, pp. 60-69. Cambridge University Press, Cambridge.

- 1998 The Ceramics of Cuello, Belize. A New Evaluation. *Ancient Mesoamerica* 9:55-66.

Kovacevish, Brigitte and Michael G. Callaghan

- 2014 Introduction: Inalienability, Value, and the Construction of Social Difference. *Archaeological Papers of the American Anthropological Association* 23(1):1-13.

Kowalewski, Stephen. A., Gary M. Feinman, and L. Finsten

- 1992 'The Elite' and Assessment of Social Stratification in Mesoamerica. In *Mesoamerican Elites: An Archaeological Assessment*, edited by Diane Chase and Arlen Chase, pp. 206-220, University of Oklahoma Press, Norman, OK.

Kurtz, Donald

- 2001 *Political Anthropology: Power and Paradigms*. Westview Press, Boulder, Colorado.

Laporte, Juan Pedro and Vilma Fialko

- 1993 El Preclásico de Mundo Perdido. Algunos aportes sobre los orígenes de Tikal. In *Tikal y Uaxactún en el Preclásico*, edited by Juan Pedro Laporte and J. A. Valdés, pp. 9-47, Universidad Nacional Autónoma de México, México D.F.

- 1995 Un reencuentro con Mundo Perdido, Tikal, Guatemala. *Ancient Mesoamerica* 6: 41-94.

Lawrence, D.L. and S.M. Low

- 1990 The Built Environment and Spatial Form. *Annual Review of Anthropology* 19:453-505.

Leach, Edmund

- 1954 *Political Systems of Highland Burma*. University of London, London.

LeCount, Lisa J.

- 1996 *Pottery and Power: Feasting, Gifting, and Displaying Wealth among the Late and Terminal Classic Lowland Maya*. Unpublished Ph.D. Dissertation. University of California, Los Angeles.

LeCount, Lisa J. and Angela H. Keller

- 2011 *Actuncan Archaeological Project: Report of the Third Season 2010* Belmopan, Belize. Report submitted to the Institute of Archaeology, Belmopan, Belize

Lee, David F. H.

- 1996 Nohoch Na (The Big House): The 1995 Excavations of the Cas Pek Group, Cahal Pech, Belize. In *Belize Valley Preclassic Maya Project: Report on the 1995 Field Season*, edited by P.F. Healy and J.J. Awe, pp. 77 - 97. Occasional Papers in Anthropology No. 12. Trent University, Peterborough, Ontario.
- 2001 Preliminary Report of Excavations at Structure D-1, Cahal Pech, Cayo District, Belize. In *The Western Belize Regional Cave Project. A Report of the 2000 Field Season*, edited by Reiko Ishihara, Cameron S. Griffith and Jaime J. Awe, 285-300. University of New Hampshire, Durham.

Lee, David F. H. and Jaime J. Awe

- 1995 Middle Formative Architecture, Burials, and Craft Specialization: Report on the 1994 Investigations at the Cas Pek Group, Cahal Pech, Belize. In *Belize Valley Preclassic Maya Project: Report on the 1994 Field Season*, edited by P.F. Healy and J.J. Awe, pp. 95 - 115. Occasional Papers in Anthropology No. 10. Trent University, Peterborough, Ontario.

Lehman, Edward W.

- 1969 Toward a Macrosociology of Power. *American Sociological Review* 34(4): 453-465.

Lenski, Gerhard E.

- 1966 *Power and Privilege. A Theory of Social Stratification*. The University of North Carolina Press, Chape Hill.

Lesure, Richard G.

- 1997 Figurines and Social Identities in Early Sedentary Societies of Coastal Chiapas, Mexico, 1550–800 BC.” In *Women in Prehistory: North America and Mesoamerica*, edited by Cheryl Claassen and Rosemary A. Joyce, 227–48. University of Pennsylvania Press, Philadelphia.
- 1999a Figurines as Representations and Products at Paso de la Amada, Mexico. *Cambridge Archaeological Journal* 9 (2): 209–20.

1999b On the Genesis of Value in Early Hierarchical Societies. In *Material Symbols: Culture and Economy in Prehistory*, edited by John Robb, pp. 23–55. Center for Archaeological Investigations, Occasional Paper, 26. Southern Illinois University, Carbondale.

2002 The Goddess Diffracted: Thinking about the Figurines of Early Villages. *Current Anthropology* 43:587-610.

Lohse, Jon,

2010 Archaic Origins of the Lowland Maya. *Latin American Antiquity* 21(3):312-352.

Lomitola, Lisa M.

2012 Ritual Use of the Human Form: A Contextual Analysis of the “Charlie Chaplin” Figurines of the Maya Lowlands. MA thesis, University of Central Florida.

Lopez, Roberto F.

1993 Excavaciones en la Estructura 32 de Nakbe. In *III Simposio de Investigaciones Arqueológicas en Guatemala, 1989*, edited by Juan Pedro Laporte, Héctor Escobedo and S. Villagrán, pp.75-84. Museo Nacional de Arqueología y Etnología, Guatemala.

Lopez Varela, Sandra

2004 Ceramic History of K'axob: The Early Years. In *K'axob: Ritual, Work and Family in an Ancient Maya Village*, edited by Patricia A. McAnany, pp.169-192. Monumenta Archaeologica 22. The Cotsen Institute of Archaeology, University of California, Los Angeles.

López Varela, Sandra, Annelou van Gijin and Loe Jacobs

2002 De-mystifying Pottery Production in the Maya Lowlands: Detection of Traces of Use-Wear on Pottery Sherds through Microscopic Analysis and Experimental Replication. *Journal of Archaeological Science* 29(10):1133-1147.

Love, Michael W.

2002 Early Complex Society in Pacific Coastal Guatemala: Settlements and Chronology of the Río Naranjo, Guatemala. *Papers of the New World Archaeological Foundation*, No. 66. Brigham Young University, Provo.

Lucero, Lisa J.

2003 The Politics of Ritual: The Emergence of Classic Maya Rulers. *Current Anthropology* 44(4):523-558.

Luedtke, Barbara E.

1992 *An Archaeologist's Guide to Chert and Flint*. Institute of Archaeology, University of California, Los Angeles.

Mann, Michael

- 1986 *The Sources of Social Power. Volumen 1.* Cambridge University Press, Cambridge.

Marcus, Joyce

- 1983 Lowland Maya Archaeology at the Crossroads. *American Antiquity* 48:454-488.
- 1989 Zapotec Chiefdoms and the Nature of Formative Religions. In *Regional Perspectives on the Olmec*, edited by Robert J. Sharer and David C. Grove, pp. 148-197. School of American Research, Santa Fe.
- 1993 Ancient Maya Political Organization. In *Lowland Maya Civilization in the Eight Century, A.D.*, edited by Jeremy Sabloff and John S. Henderson, pp. 111-184. Dumbarton Oaks Research Library and Collection, Washington, D.C.
- 1996 The Importance of Context in Interpreting Figurines. *Cambridge Archaeological Journal* 6:285-291.
- 1998 *Women's Ritual in Formative Oaxaca: Figurine Making, Divination, Death and the Ancestors.* Prehistory and Human Ecology of the Valley of Oaxaca 11. University of Michigan, Ann Arbor.
- 2008 The Archaeological Evidence for Social Evolution. *Annual Review of Anthropology* 37(1):251-266.
- 2009 Rethinking Figurines. In *Mesoamerican Figurines: Small-Scale Indices of Large-Scale Social Phenomena*, edited by Christina T. Halperin, Katherine A. Faust, Rhonda Taube, and Aurore Giguët, pp. 25-50. University Press of Florida, Gainesville.
- 2012 Maya Political Cycling and the Story of the Kaan Polity. In *The Ancient Maya of Mexico. Reinterpreting the Past of the Northern Maya Lowlands*, edited by Geoffrey E. Braswell, pp. 88-116. Equinox Press, London.

Marcus, Joyce and Kent V. Flannery

- 1994 Ancient Zapotec Ritual and Religion: An Application of the Direct Historical Approach. In *The Ancient Mind*, edited by Colin Renfrew and Ezra B. W. Zubrow, pp. 55-74. Cambridge University Press.
- 1996 *Zapotec Civilization. How Urban Society Evolved in Mexico's Oaxaca Valley.* Thames and Hudson, London.

Masson, Marilyn

- 2002 Community Economy and the Mercantile Transformation in Postclassic Northeastern Belize. In *Ancient Maya Political Economies*, edited by Marilyn A.

Masson and David A. Freidel, pp. 335-364. Altamira Press, Walnut Creek, California.

- 2004a Fauna Exploitation from the Preclassic to the Postclassic Periods at Four Maya Settlements in Northern Belize. In *Maya Zooarchaeology: New Directions in Method and Theory*, edited by Kitty F. emery, pp. 97-122. Cotsen Institute of Archaeology, University of California, Los Angeles.
- 2004b Contribution of Fishing and Hunting. Subsistence and Symbolic Expression. In *K'axob: Ritual, Work and Family in an Ancient Maya Village*, edited by Patricia A. McAnany, pp. 383-397. Cotsen Institute of Archaeology, University of California, Los Angeles.

Matthews, Jennifer P. and James F. Garber

- 2004 Models of Cosmic Order: The Physical Expression of Sacred Space among the Ancient Maya. *Ancient Mesoamerica* 15: 49-59.

May Ciau, Rossana, Tomás Gallareta Negrón, George J. Bey III, William m. Ringle, Christopher Gunn and Teresa Ceballos Gallareta

- 2006 New Perspectives on the Origins of Monumentality in the Northern Maya Lowlands. Paper presented at the 71st Annual Meetings of the Society for American Archaeology. San Juan, Puerto Rico.

McAnany, Patricia

- 1991 Structure and dynamics of Intercommunity Exchange. In *Second Maya Lithic Conference*, edited by Thomas R. Hester and Harry J. Shafer, pp. 271-293. Prehistory Press, Madison.
- 1995 *Living with the Ancestors: Kinship and Kingship in Ancient Maya Society*. University of Texas Press, Austin.
- 2010 *Ancestral Maya Economies in Archaeological Perspective*. Cambridge University Press, Cambridge.

McAnany, Patricia A. (editor)

- 2004 *K'axob: Ritual, Work, and Family in an Ancient Maya Village*. Monumenta Archaeologica 22. Cotsen Institute of Archaeology, UCLA, Los Angeles.

McAnany, Patricia A. and Justin P. Ebersole

- 2004 Ground and Polished Stone Tools. In *K'axob: Ritual, Work, and Family in an Ancient Maya Village*, edited by P.A. McAnany, pp. 317-330. Monumenta Archaeologica 22. Cotsen Institute of Archaeology, UCLA, Los Angeles.

McAnany Patricia A. and Sandra Lopez Varela

- 1999 Re-Creating the Formative Maya Village of K'axob. Chronology, Ceramic Complexes, and Ancestors in Architecture Context. *Ancient Mesoamerica* 10:147-168.

McAnany, Patricia A. and Polly A. Peterson

- 2004 Tools of the Trade: Acquisition, Use, and Recycling of Chipped Stone. In *K'axob: Ritual, Work, and Family in an Ancient Maya Village*, edited by P.A. McAnany, pp. 279-305. Monumenta Archaeologica 22. Cotsen Institute of Archaeology, UCLA, Los Angeles.

McCafferty, Sharisse D. and Geoffrey G. McCafferty

- 2000 Textil Production in Postclassic Cholula, Mexico. *Ancient Mesoamerica* 11:39-54.

McGuire, Randall

- 1983 Breaking Down Cultural Complexity: Inequality and Heterogeneity. *Advances in Archaeological Method and Theory* 6:91-142.

McSwain, Rebecca

- 1991 A Comparative Evaluation of the Producer-consumer Model for Lithic Exchange in Northern Belize, Central America. *Latin American Antiquity* 2(4):337-351.

Meierhoff, James, Mark Golitko and James d. Morris

- 2012 Obsidian Acquisition, Trade, and Regional Interaction at Chan. In *Chan: An Ancient Maya Farming Community*, edited by cyinthia Robin, pp. 271-288. University Press of Florida, Gainesville.

Micheletti, George and Terry G. Powis

- 2015 Origins of the Block Party: Investigations of Preclassic Architecture Over and Under Plaza A at Pacbitun, Belize. *Research Reports in Belizean Archaeology* 12:205-216.

Miller, Daniel and Christopher Tilley

- 1984 Ideology, Power and Prehistory: An Introduction. In *Ideology, Power and Prehistory*, edited by Daniel Miller and Christopher Tilley, pp. 1-15. Cambridge University Press, Cambridge.

Mills, Barbara J.

- 2004 The Establishment and Defeat of Hierarchy: Inalienable Possessions and the History of Collective Prestige Structures in the Pueblo Southwest. *American Anthropologist* 106(2):238-251.

- 2014 Land, Labor, Bodies, and Objects: comments on Inalienability and Mesoamerican Social Life. *Archaeological Papers of the American Anthropological Association* 23(1): 142-149.

Mitchum, Beverly

- 1991 Lithic Artifacts from Cerros, Belize: Production, Consumption, and Trade. In *Maya Stone Tools. Selected Papers from the Second Maya Lithic conference*, edited by Thomas Hester and Harry Shafer, pp. 45-53. Monographs in World Archaeology No. 1, Prehistory Press, Madison.

Mixter, David W.

- 2012 Excavations on Structure 41. In *Actuncan Archaeological Project: Report of the Fourth Season*, edited by Lisa J. LeCount and J. H. Blitz, pp. 60-116. Report submitted to the Institute of Archaeology, Belmopan, Belize.

Moholy-Nagy, Hattula

- 1991 The Flaked Chert Industry of Tikál, Guatemala. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*, edited by Thomas R. Hester and Harry J. Shafer, pp. 189 - 202. Prehistory Press, Madison, WI.

- 1994 Tikal Material Culture: Artifacts and Social Structure at a Classic Lowland Maya City. Ph.D. dissertation, University of Michigan, Ann Arbor, University Microfilms, Ann Arbor.

- 2003 *The Artifacts of Tikal: Utilitarian Artifacts and Unworked Material. Part B.* University of Pennsylvania Museum, Philadelphia. Tikal Report No. 27-B.

Moholy-Nagy, Hattula and Fred W. Nelson

- 1987 More Source Analyses of Obsidian from Tikal, Guatemala. *Lithic Technology* 16:13-21.

- 1990 New Data on Sources of Obsidian Artifacts from Tikal, Guatemala. *Ancient Mesoamerica* 1:71-80.

Moore, Jerry

- 1992 Pattern and Meaning in Prehistoric Peruvian Architecture: The Architecture of Social Control in the Chimú State. *Latin American Antiquity* 3:95-113.

- 1996 *Architecture and Power in the Ancient Andes. The Archaeology of Public Buildings.* Cambridge University Press, Cambridge.

Morales Aguilar, Carlos, Richard D. Hansen, Abel Morales López and Wayne K. Howell

- 2008 Nuevas perspectivas en los modelos de asentamiento Maya durante el Preclásico en las Tierras Bajas: Los sitios de Nakbe y El Mirador, Petén. In *XXI Simposio de Investigaciones Arqueológicas en Guatemala, 2007*, edited by Juan Pedro

Laporte, Bárbara Arroyo and Héctor Mejía, pp.198-213. Museo Nacional de Arqueología y Etnología, Guatemala.

Morgan, Lewis H.

[1877] 1974 *Ancient Society*. Meridian Book, Gloucester, Massachusetts.

Nash, Donna J. and Patrick R. Williams

2004 Architecture and Power on the Wari-Tiwanaku Frontier. *Archaeological Papers of the American Anthropological Association* 14:151-2004.

Neivens de Estrada, Niña

2014 A Tangled Web: Ceramic Adoption in the Maya Lowlands and Community Interaction in the Early Middle Preclassic as seen in the K'awil Complex from Holmul, Peten, Guatemala. In *The Maya and their Central American neighbors: Settlement patterns, architecture, hieroglyphic texts, and ceramics*, edited by Geoffrey E. Braswell, pp. 177-200. Routledge, New York.

Nelson, Ben A.

1995 Complexity, Hierarchy, and Scale: A Controlled Comparison between Chaco Canyon, New Mexico and La Quemada, Zacatecas. *Latin American Antiquity* 60(4):597-618.

Nelson, Fred N.

1985 Summary of the Results of Analysis of Obsidian Artifacts from the Maya Lowlands. *Scanning Electron Microscopy* 2:631-649.

1989 Rutas de Intercambio de Obsidiana en el Norte de la Península de Yucatán. In *La Obsidiana en Mesoamérica*, edited by Margarita GAXional and John E. Clark, ppg. 363-368. Instituto Nacional de Antropología e Historia, México, D.F.

2004 El intercambio de obsidiana en las Tierras Bajas Mayas. En *XVII Simposio de investigaciones Arqueológicas en Guatemala 2003*, edited by Juan Pedro Laporte, Barbara Arroyo, Héctor Escobedo and Héctor Mejía, pp. 925-935. Museo Nacional De Arqueología y Etnología, Guatemala.

Oberg, Kalervo

1955 Types of Social Structure among the Lowland Tribes of South and Central America. *American Anthropologist* 57:472-487.

Ortner, Sherry

1984 Theory in Anthropology since the Sixties. *Comparative Studies in Society and History* 26(1):126-166.

Pagliaro, Jonathan B., James F. Garber, and Travis W. Stanton

- 2003 Evaluating the Archaeological Signatures of Maya Ritual and Conflict. In *Ancient Mesoamerican Warfare*, edited by M. K. Brown, and T. W. Stanton, pp. 75-90. Alta Mira Press, New York.

Paukekat, Timothy R.

- 2007 *Chiefdoms and Other Archaeological Delusions*. Altamira Press, Lanham.

Parson, Jeffrey R. and Mary H. Parson

- 1990 *Maguay Utilization in highland Central Mexico: An Archaeological Ethnography*. Museum of anthropology, University of Michigan, Ann Arbor.

Payne, Claudine

- 2002 Architectural Reflections of Power and Authority in Mississippian Towns. In *Dynamics of Power*, edited by Maria O'Donovan, pp. 188-213. Southern Illinois University.

Peebles, Christopher and Susan M. Kus

- 1977 Some Archaeological Correlates of Ranked Societies. *American Antiquity* 42(3):421-448.

Pendergast, David M.

- 1969 *The Prehistory of Actun Balam, British Honduras*. Art and Archaeology Occasional Papers No. 16. Royal Ontario Museum, Toronto.

- 1982 *Excavation at Altun Ha, Belize, 1964-1970, Volume II*. Royal Ontario Museum, Toronto.

- 1992 Noblesse Oblige: The Elites of Altun Ha and Lamanai, Belize. In *Mesoamerican Elites: An Archaeological Perspective*, edited by Diane Z. Chase and Arlen D. Chase, pp. 61-79. University of Oklahoma Press, Norman.

Peniche May, Nancy

- 2004 *Aspectos de la Organización Económica de Grupos Domésticos de Élite: Las Industrias de Talla de Sílex de Sihó, Yucatán*. BA thesis, Universidad Autónoma de Yucatán, Mérida.

- 2007a La industria de piedra picada y pulida de Ek' Balam. En Informe de la lítica de Ek' Balam: Sílex, obsidiana y caliza. Manuscrito en posesión de la autora, Department of Anthropology, University of California, San Diego.

- 2007b Los artefactos líticos del noroeste de Yucatán. Series of four reports on limestone, chert. Obsidian and metamorphic stone artifacts. Manuscript on file in the Institute Nacional de Anthropology of History.

- 2010 *The Architecture of Power and Sociopolitical Complexity in Northwestern Yucatan during the Preclassic Period*. MA Thesis, University of California, San Diego.
- 2012a The Architecture of Power and Sociopolitical Complexity in Northwestern Yucatan during the Preclassic Period. In *The Ancient Maya of Mexico. Reinterpreting the Past of the Northern Maya Lowlands*, edited by Geoffrey E. Braswell, pp. 65-87. Equinox Publishing, Sheffield.
- 2012b Report of the 2011 Excavations at Structure B-2 at Cahal Pech, Belize. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra, and Jaime J. Awe, pp. 90-96. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.
- 2013 Excavations in Plaza B, Cahal Pech. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2013 Field Season*, edited by Julie A. Hoggarth, Reiko Ishara-Brito, and Jaime J. Awe, pp. 128-167. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.
- 2014a Revealing Architectural Variability at Cahal Pech: Recent Excavations at Plaza B. In *Research Reports in Belizean Archaeology* 11: 205-212. Belmopan, Belize.
- 2014b Excavations in Plaza B, Cahal Pech: 2013 Field Season. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2013 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe, pp. 24-41. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.
- 2015a Excavations in Plaza G, Cahal Pech: 2014 Field Season. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2014 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe, pp. 123-129. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.
- 2015b The Construction Sequence of Structure B-5, Cahal Pech. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2014 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe, pp. 87-102. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.
- Peniche May, Nancy and Antonio Beardall
- 2015 Excavations of Structure G-2, Cahal Pech: 2014 Field Season. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2014 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe, pp. 130-137. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.

Peniche May, Nancy and Lilia Fernández Souza

- 2004 En la búsqueda de actores sociales: Los artefactos líticos de Sihó, Yucatán. In *XVII Simposio de Investigaciones Arqueológicas en Guatemala 2003*, edited by J.P. Laporte, B. Arroyo, H. Escobedo and H. Mejia, pp. 93-112. Museo Nacional de Arqueología y Etnología, Guatemala.

Peregrine, Peter N.

- 2001 Matrilocality, Corporate Strategy, and the Organization of Production in the Chacoan World. *American Antiquity* 66(1):36-46.

Perodie, James R.

- 2001 Feasting for Prosperity: A Study of Southern Northwest Coast Feasting. In *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by Michael Dietler and Brian Hayden, pp. 185-214. Smithsonian Institution Press, Washington.

Phillips, David

- 1979 Material Culture and Trade of Postclassic Maya. PhD dissertation, Department of Anthropology, University of Arizona, University Microfilms, Ann Arbor.

Pohl, M. E.D. and L.H. Feldman

- 1982 The Traditional Role of Women and Animals in lowland Maya Economy. In *Maya Subsistence: Studies in Memory of Dennis E. Puleston*, edited by Kent V. Flannery, pp. 295-311. Academic Press, New York.

Pool Cab, Marcos

- 2011 La construcción de espacios sociales e identidades entre los mayas prehispánicos de la península de Yucatán. In *Localidad y globalidad en el Mundo Maya Prehispánico e Indígena Contemporáneo. Estudios de Espacio y Género*, edited by Miriam J. Gallegos Gómora and Julia A. Hendon, pp. 53-64. Instituto Nacional de Antropología e Historia, D.F.

Pope Jones, Cynthia

- 1994 Preliminary Analysis of Small Chert Tools and Related Debitage at Caracol, Belize. In *Studies in the Archaeology of Caracol, Belize*, edited by D. Chase and A. Chase, pp.148-156. Pre-Columbian Art Research Institute, Monograph No.7. San Francisco.

Porter, Muriel N.

- 1953 *Tlatilco and the Pre-Classic Cultures of the New World*. Viking Fund Publication in Anthropology, Number Nineteen. Wenner-Gren Foundation for Anthropological Research, Inc, New York.

Potter, Daniel R.

- 1991 A Descriptive Taxonomy of Middle Preclassic Chert Tools at Colha, Belize. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*, edited by Thoas R. Hester and Harry J. Shafer, pp. 21-30. Monographs in World Archaeology 1. Prehistory Press, Madison, Wisconsin.

- 1993 Analytical Approached to Late Classic Maya Lithic Industries. In *Lowland Maya Civilization in the Eight Century A.D.*, edited by Jeremy Sabloff and John Henderson, pp. 273-298. Dumbarton Oaks Research Library and Collection, Washington, D.C.

Potter, Daniel R., Thomas R. Hester, Stephen L. Black and Fred Valdez Jr.

- 1984 Relationships between Early Preclassic and Early Middle Preclassic Phases in Northern Belize: A Comment on "Lowland Maya Archaeology at the Crossroads." *American Antiquity*, 49: 628-631.

Potter, James M. and Elizabeth M. Perry

- 2000 Ritual as a Power Resource in the American southwest. In *Alternative Leadership Strategies in the Prehispanic Southwest*, edited by Barbara J. Mills, pp. 60-78. University of Arizona Press, Tucson.

Powis, Terry G.

- 1992 Preliminary Excavations at the Tolok Group: A Settlement Cluster in the southeastern Periphery of Cahal Pech. In *Progress Report of the Fourth Season (1991) of Investigations at Cahal Pech, Belize*, edited by Jaime J. Awe and Mark D. Campbell, pp. 35-50. Trent University, Peterborough Ontario.

- 1993 Burning the Champa: 1992 Investigations at the Tolok Group, Cahal Pech, Belize. In *Belize Valley Reconnaissance Project. Progress Report of the 1992 Field Season*, edited by Jaime J. Awe, pp. 97-115. Trent University, Peterborough Ontario.

- 1994 Sacred Space and Ancestor Worship: Ongoing Plaza Investigations of Two Middle Formative Circular Platforms at the Tolok Group, Cahal Pech, Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the Sixth (1993) Field Season*, edited by J.J. Awe, pp. 122-146. Institute of Archaeology, University of London, London, UK.

- 1996 Excavations of Middle Formative Round Structures at the Tolok Group, Cahal Pech, Belize. Unpublished MA Thesis, Department of Anthropology, Trent University, Peterborough, ON.

- 2005 Formative Mesoamerican Cultures: An Introduction. In *New Perspectives on Formative Mesoamerican Cultures*, edited by Terry G. Powis, pp. 1-14. BAR International Series 1377. Oxford.

- 2009 *Pacbitun Preclassic Project: Report on the 2008 Field Season*. Report submitted to the Institute of Archaeology, Belmopan Belize.
- 2010 *Pacbitun Preclassic Project: Report on the 2009 Field Season*. Report submitted to the Institute of Archaeology, Belmopan Belize.
- Powis, Terry G. and David Cheetham
- 2007 From House to Holy: Formative Development of Civic-Ceremonial Architecture in the Maya Lowlands. In *Research Reports in Belizean Archaeology* 4:177-186.
- Powis, Terry G. and Paul Healy
- 2012 Preclassic Maya Use of Plaza Space in the Upper Belize River Valley: A View from Cahal Pech and Pacbitun. *Pacbitun Regional Archaeology Project (PRAP): Report on the 2011 Field Season*, edited by Terry G. Powis, pp. 205-227. Report submitted to the Institute of Archaeology, Belmopan Belize.
- Powis, Terry G. and Bobbi M. Hohmann
- 1995 From Private Household to Public Ceremony: Middle Formative Occupation at the Tolok Group, Cahal Pech, Belize. In *Belize Valley Preclassic Maya Project: Report on the 1994 Field Season*, edited by P.F. Healy and J.J. Awe, pp. 45-94. Occasional Papers in Anthropology No. 10. Trent University Press, Peterborough, ON.
- Powis, Terry G., Fred Valdez Jr., Thomas R. Hester, W. Jeffrey Hurts and Stanley M. Tatka, Jr.
- 2002 Spouted Vessels and Cacao Use among the Preclassic Maya. *Latin American Antiquity* 13(1): 85-106.
- Price, Douglas T. and Gary M. Feinman
- 2010 Social Inequality and the Evolution of Human Social Organization. In *Pathways to Power. New Perspectives on the Emergence of Social Inequality*, edited by T. Douglas Price and Gary M. Feinman, pp. 1-14. Springer, New York.
- Pring, Duncan C.
- 1977 *The Preclassic Ceramics of Northern Belize*. Ph D dissertation. University of London.
- Pritchard, James C., C. Mathew Saunders, Christy Pritchard and Catharina Santisilia
- 2011 Excavation at Cahal Pech's Structures C-3 and C-6: Results of the 2010 Season. In *Belize Valley Reconnaissance Project. A Report of the 2010 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe, 15-28. Institute of Archaeology, Belmopan, Belize, C.A.

Pritchard, James C.

- 2013 Excavations of Structure C-3, South, Cahal Pech. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 40-50. Institute of Archaeology, Belmopan, Belize, C.A.

Pritchard, Christy W.

- 2013 Excavation Summary of Plaza C Units along Structures B1 and B2 at Cahal Pech. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 29-43. Institute of Archaeology, Belmopan, Belize, C.A.

Pritchard, Christy, Jim Pritchard and C. Mat Saunders

- 2012 2011 AFAR Excavations in the B Group, Cahal Pech, Belize. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 72-80. Institute of Archaeology, Belmopan, Belize, C.A.

Pyburn, K.A.

- 1989 Maya Cuisine: Hearths and Lowland Economy. In *Research in Economic Anthropology: Prehistoric Maya Economies of Belize*, Supplement 4, edited by Patricia McAnany and Barry L. Isaac, pp. 325-346. JAI Press Inc., Greenwich, CT.

Rands, Robert L. and Barbara C. Rands

- 1965 Pottery Figurines of the Maya Lowlands. In *Archaeology of Southern Mesoamerica*, edited by Gordon R. Willey, pp. 535-560. Handbook of Middle American Indians Vol. 2. University of Texas Press, Austin.

Rathje, William L.

- 1971 The origin and development of lowland Maya Classic civilization. *American Antiquity* 36:275-285.

Redmond, Elsa M. and Charles S. Spencer

- 2012 Chiefdoms at the Threshold: The Competitive Origins of the Primary State. *Journal of Anthropological Archaeology* 31:22-37.

Renfrew, Colin

- 1974 Beyond a Subsistence Economy: The Evolution of Social Organization in Prehistoric Europe. In *Reconstructing Complex Societies: An Archaeological Colloquium*, edited by C. B. Moore, pp. 69-95. Bulletin of the American Schools of Oriental Research 20.

Rice, Don S.

- 1976 The Middle Preclassic Maya Settlement in the Central Maya Lowlands. *Journal of Field Archaeology* 3:425-445.

Rice, Prudence M.

- 1979 Ceramic and Nonceramic Artifacts of Lakes Yaxha-Sacnab, Guatemala. Part I, The Ceramics. Section A, Introduction and the Middle Preclassic Ceramics of Yaxha-Sacnab, Guatemala. *Cerámica de Cultura Maya* 10:1-62.

- 1984 Obsidian Procurement in the Central Peten Lakes Region, Guatemala. *Journal of Field Anthropology* 11: 181-194.

Rick, John W.

- 2004 The Evolution of Authority and Power at Chavín de Huantar, Peru. *Archaeological Papers of the American Anthropological Association* 14: 71-89

Ricketson, Oliver G., Jr.

- 1929 Report of O.G. Ricketson, Jr. on the Excavation at Uaxactun. *Carnegie Institution of Washington Yearbook* 28:316-322.

- 1937 *Uaxactun, Guatemala-Group E-1926-1931. Part I: Excavations*. Publication 477, Carnegie Institution of Washington, Washington, D.C.

Ricketson, O.Garrison, and E.B. Ricketson

- 1937 *Uaxactun, Guatemala: Group E- 1926-1931*. Carnegie Institution of Washington Publication 477. Washington, D.C.

Ringle, William

- 1985 *The Settlement Patterns of Komchen, Yucatan, Mexico*. Ph.D. Dissertation, Tulane University, New Orleans.

Ringle, William M. and E. Wyllys Andrews V

- 1988 Formative Residences at Komchen, Yucatan, Mexico. In *household and Community in the Mesoamerican Past*, edited by Richard R. Wilk and Wendy Ashmore, pp. 171-197. University of New Mexico Press, Albuquerque.

- 1990 The Demography of Komchen, Yucatan, Mexico. In *Precolumbian Population History in the Maya Lowlands*, edited by T. P. Culbert and Don Rice, pp. 215-244. University of New Mexico Press, Albuquerque.

Robertson, Robin A.

- 1983 Functional Analysis and Social Process in Ceramics: The Pottery from Cerros, Belize. In *Civilization in the Ancient Americas: Essays in Honor of Gordon E. Willey*, edited by Richard Leventhal and A.L. Kolata, pp. 105-142. University of New Mexico Press, Albuquerque.

Robichaux, Hugh R.

- 1998 Excavations at the Upper Plaza. In *The 1997 Season of the Chan Chich Archaeological Project*, edited by Brett A. Houk, pp. 31-52. Papers of the Chan Chich Archaeological Project, no. 3. Center for Maya Studies, San Antonio.

Robin, Cynthia

- 1989 *Preclassic Maya Burials at Cuello, Belize*. BAR International Series 480, British Archaeological Reports, Oxford, England.

- 2003 New Directions in Classic Maya Household Archaeology. *Journal of Archaeological Research* 11:307-356.

Robin, Cynthia, Andrew R. Wyatt, Laura J. Kosakowski, Santiago Juarez, Ethan Kalosky and Elise Enterkin

- 2012a A Changing Cultural Landscape. Settlement survey and GIS at Chan. In *An Ancient Maya Farming Community*, edited by Cynthia Robin, pp. 19-41. University of Press Florida, Florida.

Robin, Cynthia, James Meierhoff, Caleb Kestle, Chelsea Blackmore, Laura J. Kosakowski and Anna C. Novotny

- 2012b Ritual in a Farming Community. In *An Ancient Maya Farming Community*, edited by Cynthia Robin, pp. 113-132. University of Press Florida, Florida.

Robin, Cynthia, James Meierhoff and Laura J. Kosakowski

- 2012c Nonroyal Governance at Chan's Community Center. In *An Ancient Maya Farming Community*, edited by Cynthia Robin, pp. 133-144. University of Press Florida, Florida.

Robles Castellanos, Fernando and Anthony Andrews

- 2000 *Proyecto Costa Maya: Reporte interino, Temporada 2000: Reconocimiento arqueológico de la esquina noroeste de la Península de Yucatán*. Instituto Nacional de Antropología e Historia, Centro INAH Yucatán, Mérida.

- 2001 *Proyecto Costa Maya: Reporte interino, Temporada 2001: Reconocimiento arqueológico de la esquina noroeste de la Península de Yucatán*. Instituto Nacional de Antropología e Historia, Centro INAH Yucatán, Mérida.

- 2003 *Proyecto Costa Maya: Reporte interino, Temporada 2002: Reconocimiento arqueológico de la esquina noroeste de la Península de Yucatán*. Instituto Nacional de Antropología e Historia, Centro INAH Yucatán, Mérida.

Robles Castellanos, Fernando, Angeles Cantero Aguilar and Antonio Benavides Rosales

- 2006 Proyecto arqueológico Poxilá, Mpio. De Umán, Yucatán (Temporada de campo 2005) Informe para el Consejo Nacional de Arqueología de México y Propuesta

de investigación para la temporada de 2006. Instituto Nacional de Antropología e Historia, Mérida, Yucatán

Rovner, Irwin, Suzanne M. Lewenstein

1997 *Maya Stone Tools of Dzibilchaltún, Yucatán, and Becán and Chicanná, Campeche*. Middle American Research Institute Tulane University, New Orleans.

Rosenswig, Robert M.

2000 Some Political Processes of Ranked Societies. *Journal of Anthropological Archaeology* 19: 413-460.

Ruscheinsky, Lynn M.

2003 The Social Reproduction of Gender Identity through the Production and Reception of Lowland Maya figurines. Unpublished Ph.D. dissertation, University of British Columbia.

Sabloff, Jeremy A.

1975 Ceramics. In *Excavations at Seibal, Department of Peten, Guatemala*, edited by Gordon R. Willey. Memoirs of the Peabody Museum of Archaeology and Ethnology, Volume 13 (2). Harvard University Press, Cambridge.

Sahlins, Marshall D.

1958 *Social Stratification in Polynesia*. University of Washington Press, Seattle.

1963 Poor Man, Rich Man, Big-Man, Chief: Political Types in Melanesia and Polynesia. In *Comparative Studies in Society and History* 5(3):285-303.

Santasilia, Catharina E.

2012a The Discovery of an Elite Maya Tomb: Excavations at the Summit of Structure B-1, Cahal Pech, Belize. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 35-58. Institute of Archaeology, Belmopan, Belize, C.A.

2012b Terminal Classic Evidence at Plaza H, Cahal Pech, San Ignacio, Belize. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 97-104. Institute of Archaeology, Belmopan, Belize, C.A.

2013a Excavations of the Staircase between Plazas C, H, and B at Cahal Pech. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 21-28. Institute of Archaeology, Belmopan, Belize, C.A.

2013b Excavations in the Eastern Ballcourt, Cahal Pech. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A.

Hoggarth, Rafael A. Guerra and Jaime J. Awe, 51-59. Institute of Archaeology, Belmopan, Belize, C.A.

- 2013c The Discovery of a Protoclassic Maya Tomb: Excavations at the Summit of Structure B1 at Cahal Pech. In *Belize Valley Reconnaissance Project. A Report of the 2011 Field Season*, edited by Julie A. Hoggarth, Rafael A. Guerra and Jaime J. Awe, 90-113. Institute of Archaeology, Belmopan, Belize, C.A.

- 2014 The Discovery of an Early Classic Maya Tomb: Excavations at the Western Façade of Structure B1 at Cahal Pech. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2013 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe, pp. 42-51. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.

Shults, Sara C.

- 2012 Uncovering Ancient Maya Exchange Networks: using the Distributional Approach to Interpret Obsidian Exchange at Actuncan, Belize. MA Thesis, The University of Alabama.

Serra Puche, Mari Carmen

- 2002 The Concept of Feminine Places in Mesoamerica. The Case of Xochitécatl, Tlaxcala, México. In *Gender in Pre-Hispanic America*, edited by Cecelia Klein, pp. 255-283. Dumbarton Oaks, Washington, D.C.

Service, Elman R.

- 1962 *Primitive Social Organization. An Evolutionary Perspective*. Random House, New York.

- 1968 The Prime-Mover of Cultural Evolution. *Southwestern Journal of Anthropology* 24(4):396-409.

- 1971 *Cultural Evolution: Theory in Practice*. Holt, Rinehart and Winston, New York.

- 1975 *Origins of the State and Civilization: The Process of Cultural Evolution*. Norton, New York.

Sewell, William H., Jr.

- 1992 A Theory of Structure: Duality, Agency, and Transformation. *American Journal of Sociology* 98(1):1-29.

Shafer, Harry J. and Thomas R. Hester

- 1983 Ancient Maya Chert Workshops in Northern Belize. *American Antiquity* 48(3):519-543.

Sheets, Payson D.

- 1975 Behavioral Analysis and the Structure of a Prehistoric Industry. *Current Anthropology* 16(3):369-391.

Shelton, Rebecca L.

- 2008 A Contextual Analysis of a Preclassic Problematic Deposit at Blackman Eddy, Belize. MA thesis, The University of Texas, Arlington.

Sidrys, Raymond

- 1983 Conclusions. In *Archaeological Excavations in Northern Belize, Central America*, edited by Raymond Sidrys. Monograph XVII Institute of Archaeology. University of California, Los Angeles.

Sidrys, Raymond V. and John M. Andersen

- 1978 A Second Round Structure from Northern Belize, Central America. *Man* 13:638-650.

Simms, Stephanie, Francesco Berna, George J. Bey III

- 2013 A Prehispanic Maya Pit Oven? Microanalysis of fired clay balls from the Puuc region, Yucatán, México. *Journal of Archaeological Science* 40:1144-1157.

Skaggs, Sheldon, Terry Powis and Duncan Balinger et al.

- 2015 Defining a Late Classic Maya Granite Workshop at the Tzib Group, Pacbitun, Belize. Paper presented at the 80th Annual Meeting of the Society for American Archaeology, San Francisco.

Smith, Ledyard A.

- 1950 *Uaxactun, Guatemala: Excavations of 1931-1937*. Publication 588. Carnegie Institution of Washington, Washington, D.C.

- 1972 *Excavations at Altar de Sacrificios: Architecture, Settlement, Burials, and Caches*. Peabody Museum of Archaeology and Ethnology Papers 26 (2). Harvard University, Cambridge.

Smith, Robert E.

- 1955 *Ceramic Sequence at Uaxactun, Guatemala*. Middle American Research Institute, Publication 20, Tulane University, New Orleans.

Smith, Robert E., Gordon R. Willey and James C. Gifford

- 1960 The Type-Variety Concept as a Basis for the Analysis of Maya Pottery. *American Antiquity*, 25:330-340.

Spencer, Charles S.

- 1987 Rethinking the Chiefdom. In *Chiefdoms in the Americas*, edited by Robert D. Drennan and C. Uribe, pp. 369-390. University Press of America, Lanham, MD.

1990 On the Tempo and Mode of State Formation: Neoevolutionism Reconsidered. *Journal of Anthropological Archaeology* 9:1-30.

1993 Human Agency, Biased Transmission, and the Cultural Ecolution of Chiefly Authority. *Journal of Anthropological Archaeology* 12:41-74.

Stanchly, Norbert

1992 An Analysis of the Faunal Remains from Structure B-4, Cahal Pech, Belize. Appendix 1 in *Dawn in the Land between the Rivers: Formative Occupation at Cahal Pech, Belize and its Implications for Preclassic Development in the Maya Lowlands*, by Jaime J. Awe. Ph.D. Dissertation, University of London, London.

1993 A Preliminary Analysis of the Faunal Remains from the Tolok Group, 1991-1992 Field Season. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1993 Field Season*, edited by J. J. Awe, pp. 130-138. Institute of Archaeology, University of London, London, UK.

1994 A Report of the Faunal Remains Recovered from the Zubin Group, 1993 Field Season. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the Sixth (1993) Field Season*, edited by J.J. Awe, pp. 109- 121. Institute of Archaeology, University of London, London, UK.

1995 Formative Period Maya Faunal Utilization at Cahal Pech, Belize: Preliminary Analysis of the Animal Remains from the 1994 Field Season. In *Belize Valley Preclassic Maya Project: Report on the 1994 Field Season*, edited by Paul F. Healy and Jaime Awe, pp. 124-149. Trent University, Peterborough.

1999 Preliminary Report on the Preclassic Faunal Remains from Pacbitun, Belize 1995 and 1996 Field Seasons. In *Belize Valley Preclassic Maya Project: Report on the 1996-1997 Field Season*, edited by Paul F. Healy, pp. 41-52. Trent University, Peterborough.

Stanchly, Norbert and Jacqueline Dale

1992 An Analysis of the Faunal Remains from Structure B-4, Unit 4 and 5, Cahal Pech, Belize. In *Progress Report of the Fourth Season (1991) of Investigations at Cahal Pech, Belize*, edited by J. J. Awe and Mark D. Campbell, pp. 141-167. Institute of Archaeology, University of London, London, UK.

Stanish, Charles

2004 The Evolution of Chiefdoms. An Economic Anthropological Model. In *Archaeological Perspectives on Political Economies*, edited by Gary M. Feinman and Linda M. Nicholas, pp. 7-24. University of Utah Press, Salt Lake City.

Stanton, Travis and Traci Ardren

- 2005 The Middle Formative of Yucatan in Context: The View from Yaxuna. *Ancient Mesoamerica* 16(2):213-228.

Stark, Barbara, Lynette Heller, and Michael Ohnersorgen

- 1998 People with Cloth: Mesoamerican Economic Change from the Perspective of Cotton in South-Central, Veracruz. *Latin American Antiquity* 9:7-36.

Steponaitis, Vincas P.

- 1978 Location Theory and Complex Chiefdoms: A Mississippian Example. In *Mississippian Settlement Patterns*, edited by Bruce D. Smith, pp. 417-453. Academic Press, New York.

- 1981 Settlement Hierarchies and Political Complexity in Nonmarket Societies: The Formative Period of the Valley of Mexico. *American Anthropologist* 83(2):320-363.

- 1991 Contrasting Patterns of Mississippian Development. In *Chiefdoms: Power, Economy and Ideology*, edited by Timothy Earle, pp. 193-228.

Steward, Julian H.

- 1955 *Theory of Culture Change. The Methodology of Multilinear Evolution*. University of Illinois Press, Urbana.

Steward, Julian H. and Louis C. Faron

- 1959 *Native Peoples of South America*. McGraw-Hill, New York.

Sullivan, Timothy

- 2015 Shifting Strategies of Political Authority in the Middle through Terminal Formative Polity of Chiapa de Corzo, Chiapas, Mexico. *Latin American Antiquity* 26(4): 452-472.

Sullivan, Lauren A.

- 1991 Preclassic Domestic Architecture at Colha, Belize. MA Thesis, University of Texas at Austin.

Sullivan, Lauren A. and Jaime J. Awe

- 2013 Establishing the Cunil Ceramic Complex at Cahal Pech, Belize. In *Ancient Maya Pottery. Classification, Analysis, and Interpretation*, edited by James J. Aimers, pp. 107-120. University Press of Florida, Gainesville, Tallahassee.

Sullivan, Lauren A., M. Kathryn Brown and Jaime J. Awe

- 2009 Refining the Cunil Ceramic Complex at Cahal Pech, Belize. *Research Reports in Belizean Archaeology* 6:161-168.

Sullivan, Timothy

- 2015 Shifting Strategies of Political Authority in the Middle through Terminal Formative Polity of Chiapa de Corzo, Chiapas, Mexico. *Latin American Antiquity* 26(4): 452-472.

Sunahara, Kay S. and Jaime J. Awe

- 1994 The Cas Pek Group, Cahal Pech, Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the Sixth (1993) Field Season*, edited by J.J. Awe, pp. 193 - 210. Institute of Archaeology, University of London, London, UK.

Taschek, Jennifer

- 1992 The Artifacts of Dzibilchaltún, Yucatán, México: Shell, Polished Stone, Bone, Wood and Ceramics. Middle American Research Institute, Publication No. 50. Tulane University, New Orleans.

Thompson, J. Eric S.

- 1939 *Archaeological Investigations in the Southern Cayo District, British Honduras*. Field Museum of Natural History Anthropological Series, vol. 17 (3).
- 1942 *Late Ceramics Horizons at Benque Viejo, British Honduras*. Publication 528, No. 35. Carnegie Institution of Washington, Washington, DC.

Triadan, Daniela

- 2007 Warriors, Nobles, Commoners and Beasts: Figurines from Elite Buildings at Aguateca, Guatemala. *Latin American Antiquity* 18(3): 269-293.
- 2014 Figurines. In *Life and Politics at the Royal Court of Aguateca: Artifacts, Analytical Data, and Synthesis*, edited by Takeshi Inomata and Daniela Triadan, pp. 9-38. The University of Utah Press, Salt Lake City.

Trigger, Bruce G.

- 1990 Monumental Architecture: A Thermodynamic Explanation of Symbolic Behavior. *World Archaeology* 22(2): 119-132.

Uriarte Torres, Alejandro

- 2010 Estrategias políticas y organización espacial durante el Formativo en Ciudad Candel, Yucatán. MA thesis. El Colegio de Michoacán, La Piedad, Michoacán.

Vaillant, George C

- 1930 Excavations at Zacatenco. The Trustees, New York City.

Vaughn, Kevin J.

- 2004 Crafts and the Materialization of Chiefly Power in Nasca. *Archaeological Papers of the American Anthropological Association* 14:113-130.

Velásquez, Juan Luis

- 1993 Excavaciones en la Estructura 31 de Nakbe, Guatemala. In *III Simposio de Investigaciones Arqueológicas en Guatemala, 1989*, edited by Juan Pedro Laporte, Héctor Escobedo and S. Villagrán, pp.67-74. Museo Nacional de Arqueología y Etnología, Guatemala.

Villaseñor Alonso, María Isabel

- 2009 Lowland Maya Lime Plaster Technology: A diachronic Approach. Ph.D. Dissertation. University College London.

Villamil, Laura P.

- 2007 Creating, Transforming, Rejecting, and Reinterpreting Ancient Maya Urban Landscapes. Insights from Lagartera and Margarita. In *Negotiating the Past in the Past. Identity, Memory, and Landscape in Archaeological Research*, edited by Norman Yoffee, pp.183-214. The University of Arizona Press, Tucson.

Villarreal, Alessandra

- 2014 *An Investigation of Preclassic Maya Architecture: The Round Platforms of Cahal Pech, Belize*. Senior Thesis. Johns Hopkins University.

Voorhies, Barbara

- 1991 Textile Production. In *Ancient Trade and Tribute: Economies of the Soconusco Region of Mesoamerica*, edited by Barbara Voorhies, pp. 95-129. University of Utah Press, Salt Lake City.

Wallace, Henry

- 1978 *The Strange Case of the Cozumel Panucho Plugs: Evidence of Pre-Columbian Apiculture on Cozumel*. Ms. on file in the Dept. of Anthropology, University of Arizona, Tucson.

Wason, Paul K.

- 1994 *The Archaeology of Rank*. Cambridge University Press, Cambridge.

Weber, Max

- 1964 *The Theory of Social and Economic Organization*. Free Press, New York.

Webster David

- 1975 Warfare and the Evolution of the State: A Reconsideration. *American Antiquity* 40(4):464-470.
- 1998 Classic Maya Architecture: Implications and Comparisons. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp. 5-47. Dumbarton Oaks, Washington, D. C.

Weiant, Clarence W.

- 1943 *An Introduction to the Ceramics of Tres Zapotes, Veracruz, Mexico*. Smithsonian Bureau of American Ethnology Bulletin 157. US Government Printing Office, Washington, DC.

Weiner, Annette

- 1985 Inalienable Wealth. *American Ethnologist* 12:210– 227.
- 1992 *Inalienable Possessions: The Paradox of Keeping-while-Giving*. University of California Press, Berkeley.

Welker, Martin H.

- 2016 Cahal Pech Plaza B (2011-2013) – Vertebrate Fauna. In *The Belize Valley Archaeological Reconnaissance Project: A Report of the 2015 Field Season*, edited by Julie A. Hoggarth and Jaime J. Awe. Belize Institute of Archaeology, National Institute of Culture and History, Belmopan.

White, Leslie A.

- 2007 [1959] *The Evolution of Culture. The Development of Civilization to the Fall of Rome*. Left Coast Press, Walnut, CA.

White, Christine D., M. D. Pohl, H. P. Schwarcz and F. J. Longstaffe

- 2004 Feast, Field and Forest: Deer and Dog Diets at Lagartero and Copán. In *Maya Zooarchaeology: New Directions in Method and Theory*, edited by Kitty Emery, pp. 141-158. Cotsen Institute of Archaeology, University of California, Los Angeles.

Whiting, J. W. M. and B. Ayres

- 1968 Inferences from the Shape of Dwellings. In *Settlement Archaeology*, edited by K. C. Chang, pp. 117-133. National Press Books, Palo Alto.

Whittaker, John C.

- 1994 *Flintknapping: Making and Understanding Stone Tools*. University of Texas Press, Austin.

Willey, Gordon R.

- 1970 The Real Xe Ceramics of Seibal, Peten, Guatemala. In *Monographs and Papers in Maya Archaeology*, edited by William R. Bullard, Jr., pp. 313-355. Papers of the Peabody Museum of Archaeology and Ethnology, 61. Harvard University, Cambridge Massachusetts.
- 1972 The Artifacts of Altar de Sacrificios. Papers of the Peabody Museum of Archaeology and Ethnology Vol. 64, No. 1. Harvard University Press, Cambridge.

- 1978 Excavations at Seibal: Artifacts. *Memoirs of the Peabody Museum of Archaeology and Ethnology*, Volume 14(1), Harvard University Press, Cambridge.
- 1990 General Summary and Conclusions. In *Excavations at Seibal*. Memoirs of the Peabody Museum of Archaeology and Ethnology, 4. Harvard University, Cambridge Massachussets.
- Willey, Gordon, R. William R. Bullard Jr., John B. Glass and James G. Gifford
 1965 Prehistoric Maya Settlement in the Belize Valley. *Papers of Peabody Museum, Harvard University No 54*. Cambridge, MA: Harvard University.
- Wing, E.S. and S.J. Scudder
 1991 The Ecology and Economy of Cuello: The Exploitation of Animals. In *Cuello, an Early Maya Community in Belize*, edited by Hammond, pp. 84-97. Cambridge University Press, Cambridge.
- Wolf, Eric R.
 1990 Distinguished Lecture: Facing Power – Old Insights, New Questions. *American Anthropologists* 92(3): 586-596.
- Wright, Henry T.
 1984 Prestate Political Formations. In *On the Evolution of Complex Societies: Essays in Honor of Harry Hoijer*, edited by Timothy Earle, pp. 41-78. Undena.
 1994 Prestate Political Formations. In *Chiefdoms and early States in the Near East. The Organizational Dynamics of Complexity*, edited by Gil Stein and Mitchel S. Rothman, pp. 67- 84. Prehistory Press, Madison, Wiscosin.
- Wright, Henry T., and Gregory A. Johnson
 1975 Population, exchange and early state formation in southwestern Iran. *American Anthropologists* 77 (2):267-289.
- Yacubic, Matthew P.
 2006 The Chipped Stone Tool Industries of Blackman Eddy, Belize. Unpublished MA Thesis, Department of Anthropology, Brigham Young University, Provo, UT.
- Yoffee, Norman
 1994 Too Many Chiefs? (or, Safe texts for the '90s). In *Archaeological theory: Who sets the Agenda*, edited by Norman Yoffee and Andrew Sherratt, pp.60-78. Cambridge University Press, Cambridge.
 2005 *Myths of the Archaic States. Evolution of the Earliest Cities, States and Civilizations*. Cambridge University Press, Cambridge.

Zweig, Christina L.

2010 The Formative Ceramic Figurine Collection from the Site of Cahal Pech, Cayo, Belize. Unpublished MA Thesis, Department of Anthropology, The University of Wisconsin, Milwaukee.