Ancient Maya Cave Use in the Yalahau Region, Northern Quintana Roo, Mexico

Dominique Rissolo

AMCS

Bulletin 12

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IN THE YALAHAU REGION,
NORTHERN QUINTANA ROO, MEXICO

Entrance to Akab Chén.
Photo by Dominique Rissolo.

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With a Foreword by James E. Brady

ASSOCIATION FOR MEXICAN CAVE STUDIES
BULLETIN 12
2003

This is a complete publication of a dissertation written for the degree of Doctor of Philosophy in Anthropology, University of California, Riverside, under the supervision of Scott L. Fedick.

Cover photograph:
The author surveying in Actun Toh.
Photo by Kurt R. Heidelberg.

Association for Mexican Cave Studies
PO Box 7672
Austin, Texas 78713
www.amcs-pubs.org

The AMCS is a Project of the National Speleological Society

Printed in the United States of America

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FOREWORD

It is a great pleasure to be able to introduce Dominique Rissolo's book, *Ancient Maya Cave Use in the Yalahau Region, Northern Quintana Roo, Mexico*. In addition to being an excellent report, the volume is significant to specialists in the field in several respects. Most notably, it was written as only the second archaeology dissertation to address Maya ritual cave use and the first since my own, which was submitted in1989. The time separating the two works was an important one because the fundamentals of Maya cave archaeology were established during this period and the sub-field became recognized near the end of the millennium as students like Rissolo started to actively contribute to its development. The volume, therefore, represents the first product of the new generation of cave specialists who will steer the direction of the discipline for the next three or four decades. The time separating this work from my own dissertation is also very noticeable, in that Rissolo writes with a clarity of vision, a confidence of direction, and a sophistication in theoretical approach that I would have envied.

Furthermore, the volume is significant in being the first true regional archaeological cave survey completed in northern Yucatán. While Henry Mercer explored a number of caves in the Puuc region looking for evidence of Paleolithic human habitation, *The Hill-Caves of Yucatan* (1896) was not a regional survey and did not attempt to elucidate cave use. In the 1950s, the Carnegie Institution of Washington published a surprising amount of cave data as a result of its investigations of a number of cenotes in and around Mayapan. Once again, however, there was no attempt to systematically explore these features, and there is no evidence that the project ever appreciated the ceremonial importance of caves. Finally, Juan Luis Bonor did attempt a systematic cave exploration as part of the Oxkintok Project. He documented forty caverns in and around the site at a time when most Maya archaeologists considered caves to be rather rare occurrences. His study, in that respect, was a valuable contribution. Bonor, unfortunately, was never given the level of project support necessary to carry out a detailed archaeological survey. Rissolo's work then stands out as a major undertaking for which there were few precedents on which he could have modeled his project.

In the end Rissolo succeeded admirably in recording a range of different types of cave features. Of particular interest are his observations about differences in the form of utilization between the caves in his sample. In the final chapter, the section "Identification of Cultural Criteria for Cave Selection and Appropriation" provides a compelling analysis of cave function based on morphological differences. Rissolo's large collapse domes, like Actun Toh, do appear to have been forms that were appropriated by elites, judging by the architecture.

Personally, I was most intrigued with Rissolo's discussion of the ritual importance of water. Water as a scarce and critical resource in northern Yucatán has long been recognized, so much so that the utilitarian aspects have overshadowed any consideration of the religious meaning. Unlike other areas of Yucatán, the high water table of the Yalahau region removed the Maya's dependence on caves or cenotes as the only sources of drinking water. In fact, water in the caves was often much less accessible than at nearby wells. Rissolo documents, however, that even small pools of water reached by laborious crawls had religious significance and were the foci of ritual activity. As the author notes, the appreciation of the ritual importance of water in the Yalahau region has implications for the way that archaeologists view water sources in other parts of Yucatán. Thus, Rissolo has provided us with a solid archaeological study that has wide applicability.

James E. Brady

ACKNOWLEDGEMENTS

Permission to conduct research was granted by the Instituto Nacional de Antropología e Historia (INAH) and was graciously facilitated by Joaquín García-Bárcena, acting president of the Consejo de Arqueología. Assistance with the permit process was provided by Adriana Velázquez Morlet, director of Centro INAH Quintana Roo, and María José Con Uribe. It was a privilege to work under two such capable and dedicated scholars. My analysis at the Ceramoteca of Centro INAH Yucatán was made possible by Alfredo Barrera Rubio, Sylviane Boucher, and Yoly Palomo. I am especially grateful to Sylviane and Yoly for sharing with me their extensive knowledge of Maya pottery. I would also like to thank the following INAH archaeologists for their support and for contributing to the successful completion of my dissertation research: Eunice Uc González, Fernando Robles Castellanos, Peter Schmidt, Guillermo Ahuja, Enrique Terrones, Luis Leira, Carlos Peraza, and Cuauhtemoc Fernando Garcés. A special thanks goes to Luis Alberto Martos López for taking an early interest in my research and for his continued support and advice.

I offer my sincerest gratitude and appreciation to the people of Naranjal, who made my many months of living and working in the community a truly enriching experience. I would especially like to thank Claudio Cupul Chi for tirelessly negotiating on my behalf and skillfully arranging my trips to the caves. I extend my thanks to the entire Cupul May family for their warmth, hospitality, and continued friendship.

Many individuals from the *ejidos* on which I worked guided me to the caves, assisted in the research, and shared with me their knowledge and wisdom. This dissertation is a direct result of their involvement and therefore I am pleased to acknowledge the efforts of each individual. From Naranjal: Eleuterio Tun Balam, Pedro Cupul Chi, Luis Tun Balam, Narciso Masum Huitzil, Liberato Mazum Sánchez, Feliciano Tun Balam, Donato Tun Balam, Enrique Cupul Chi, Julian Ayala Cu, Ignacio Cupul Balam, Pascual Mazum Noh, José Cupul May, Marcelino Cupul May, Venancio Cupul May, Gregorio Tun Cupul, and Manuel Tun Cupul. In San Juan de Dios: Gregorio Dzul Cohuo, Daniel Dzul Cohuo, Ramón Balam Quetzal, Felipe Estrella Dzul, Jorge Estrella Dzul, Martiñano Cahun Balam, Reymundo Tsub Uh. I would especially like to thank Eligio Cahuich Bacab for his friendship and earnest support, and Marcelino Dzul Cahuich for accompanying me on my seemingly endless trips to Actun Toh. In Kantunilkin: Fidel Baas Chuc, Carlos Poot Pech, Jorge Cab Canul, and Beningino Cab Ek. And finally, in San Francisco, Severiano Colon Puc. With these individuals, a cave was not just a destination, it was an educational journey and I feel privileged to have learned so much about their world.

My dissertation research was supported in part by grants from the Cave Research Foundation and the National Speleological Society, two consecutive UCR Humanities Graduate Student Research Grants, a UCR Graduate Dean's Dissertation Research Grant, and a generous grant from the Anders Foundation. Follow-up work at the Ceramoteca was made possible through a UC MEXUS Small Grant awarded to Scott L. Fedick. My graduate career at UCR was supported by fellowships from the Department of Anthropology. I would like to thank Ruth Douglas, Judy Corbett, Juan Vicente Palerm, Andrea Kaus, Rick Toomey, Chris Groves, and Gayle and Carl Nuffer for creating or facilitating these funding opportunities. Field accommodations and additional support were graciously and generously provided by Gastón Alegre López and Michael Baker.

If not for Scott Fedick, my main advisor, I would have never found my place in the forests and caves of Quintana Roo. Our chance meeting in Belize has led to a lasting friendship and I look forward to calling him a close and trusted colleague. Scott has never wavered in his enthusiasm and support, and his high academic standards serve as a model I can only hope to follow in the future. I am fortunate to have studied under Karl Taube. His gift of insight and breadth of knowledge are truly astounding. I am indebted to Karl for introducing me to the communities in which I lived and worked and for providing guidance and advice throughout the course of my research. I would like to thank Michael Kearney for sharing his experience as an ethnographer. I have the greatest respect for his work. I am eternally grateful to James Brady. It can be easily said that no one has done more to advance the state of Maya cave studies than Jim. All cave archaeologists working in Mesoamerica owe him a debt of gratitude. Jim's selfless dedication to his students is humbling and my work has benefited immeasurably from his involvement. Also, special thanks go to Eugene Anderson and Robert Patch for serving on my orals committee.

There are few people I admire and respect more that Joseph Ball. His mentorship forged the intellectual and practical skills I sought to hone as a graduate student. I cannot even begin to thank him for introducing me to archaeology and providing me with constant guidance and inspiration.

In the field, there is no one I would rather work with than Jennifer Mathews. Her quick wit, resourcefulness, and tenacity have gotten us through difficult times together. Part of looking forward to each new field season is the promise of spending time with Jen. Her faith in me during the dissertation process will always be appreciated.

Cave work in the Yalahau region was no easy task. The conditions were brutal at best, and for those involved the only reward at the end of the day was a cold Leon Negra and my sincerest thanks. The highly productive initial reconnaissance of the region would not have happened without the unfettered enthusiasm of Kevin Hovey. He was always ready for another cave trip and his constant motivation ensured the success of my first dissertation field season. Kevin is a talented archaeologist and his early ideas about caves and settlement history in the region continue to guide my research. Kurt Heidelberg put in countless hours in Actun Toh and Actun Pech. His hard work and technical expertise are reflected in this dissertation and I learned a great deal from his involvement in the project. Excavations in Actun Toh were conducted with the assistance of Fabio Esteban Amador. Through our work in the field, I have come to value his friendship and admire his abilities as a researcher. I look forward to our future adventures.

The following individuals all put their time in underground, and I appreciate their help and high tolerance for discomfort: José Manuel Estrada Faisal, Jane Prendergast, Julie Bell, Darcy Wiewall, Jennifer Mathews, Ivan Miranda, Kerry Duff, Karlos Santos-Coy, Natasha Johnson, and Aaron Gardner. I would also like to thank my fellow Yalahau project members for their moral and logistical support during the course of my fieldwork. Many thanks to: Jorge Ceja Acosta, Jeffrey Glover, Kathy Sorensen, Bente Juhl Andersen, Bethany Morrison, Shanti Morell-Hart, and Dennis Taylor. I am especially grateful to Karl Lorenzen for his generosity and good company in the field. Thanks also to Arturo Gómez-Pompa, Marco Lazcano Barrero, and Gillian Schultz.

The opportunity to work with José Manuel Ochoa on my ceramic collection was a blessing. I have met few scholars with his focus and discipline and I would probably still be wandering the aisles of the Ceramoteca if not for his help. Manuel's patience, good nature, and passion for archaeology created an ideal environment to both work and learn.

I would like to thank Sara Dzul, Socorro Jiménez Alvarez, Teresa Ceballos Gallareta, and Tara Bond for their input during the ceramic analysis. Access to the important Komchen ceramic reports was kindly provided E. Wyllys Andrews V. My deepest thanks to Georgia Charuhas, Veronique Rorive, and Sylviane Boucher for their warm-hearted hospitality during my stay in Mérida. Thanks also to Clara Egugrian and Antonio Mena of the Yum Balam Reserve and to the entire staff of Hotel El Rey del Caribe in Cancún.

Back in the States, a number of individuals contributed to my dissertation research. Karen Selsor and the UCR Radiocarbon Laboratory coordinated the analysis of my samples by CAMS, at the Lawrence Livermore National Laboratory. Special thanks to Kathy Rose for her work on the dolomite samples. The faunal material was analyzed (in Mexico) and written-up at UCR by Alexis Gray. I appreciate the input by Matthew Des Lauriers on my small lithics collection. Jaime Muldoon spent hours scanning my slides and fine-tuning the images for my dissertation. His patience and attention to detail are remarkable.

A number of ideas in my dissertation would have never emerged without a nudge from Andrea Stone. I consider her work to be of the highest caliber, so her support of my research is especially meaningful. I feel honored to have worked with her in the field, if only for a short while. Every step of my graduate career benefited from the sage advice and encouragement of Carlos G. Vélez-Ibáñez. I hope to someday pass along his skillful approach to mentoring, which has enhanced both my personal and professional life.

I am proud to be part of a close-knit community of cave archaeologists. Although I have not yet had the opportunity to work with any of them in the field, their kind words and constructive advice over the years have been invaluable. In the overly competitive world of academia, their spirit of camaraderie and sincere desire to help each other succeed is truly amazing. These individuals are almost too numerous to mention, so I would like to acknowledge them collectively, by project: the Western Belize Regional Cave Project, the Xibun Archaeological Project, the Maya Mountains Archaeological Project, the former Petexbatún Regional Cave Survey, and the talented group of cave archaeologists in the graduate program at California State University, Los Angeles.

I would like to thank a number people at UCR for their moral support over the years: Paul Gelles, Erv Taylor, Maria Anna González, Travis Du Bry, Gina Nuñez, Manolo González Estay, Ramona Pérez, Alison Lee, and Zachary Hruby. Dawn Whelchel and Joye Sage deserve honorary Ph.D.s for their hard work and their very real contributions to the viability of the department. Thanks also to Jessica Jones, Valerie Smith, and the new department chair, Tom Patterson. All graduate students at UCR are fortunate to have Trina Elerts behind the desk at Graduate Division. Her kind assistance is greatly appreciated.

Since I submitted my dissertation to UCR in September of 2001, I have had the good fortune of forging new friendships and benefiting from those formed during the final phase of my graduate career. Although they may not have been directly involved in my dissertation fieldwork, I feel that these individuals nevertheless merit recognition since it is their involvement in my current research that has maintained the academic momentum necessary to bring this manuscript to print. In this regard, I would first like to thank Jeffrey Glover, who has become one of my closest friends and colleagues. Jeffrey and I have taken only our first few steps on what will surely be a long and exciting (and probably perilous) *brecha* through our archaeological careers. I have the ever-intrepid Sam Meacham to thank for my recent introduction to the underwater caves of Quintana Roo. I look forward to someday following my close friend Guillermo de Anda into the cenotes of Yucatán and I thank Alberto Pérez Romero and the rest of the Taller de Arqueología Subacuatica at the UADY for their hospitality and support. I would like to acknowledge Pilar Luna, Carmen Rojas, Octavio del Río, and Arturo González of the Subdirección de Arqueología Subacuática de INAH for showing interest in my research and extending the invitation of future collaboration. Special thanks also to Karina Romero, Lilia Lizama, Tony Andrews, Jim Coke, Bil Phillips, Fred Devos, and Danny Riordan.

My dissertation appears here in its final form thanks to the tireless efforts of Bill Mixon. As publications editor for the Association for Mexican Cave Studies, Bill has brought the world of Mexican caves and caving to researchers and explorers across geographic and academic borders. It was a pleasure working with Bill as he applied his keen eye and commitment to excellence to an otherwise imperfect manuscript. I am truly honored to have my dissertation included among the many outstanding AMCS Bulletins.

I offer my deepest thanks to my parents, Bob and Marianne, my sisters, Evelyne and Natalia, my brother, Bobby, and also to Norm, Darcy, Jason, and Mike. Every day I am humbled by their love, encouragement, and support. My father has instilled in me the reverence, awe, curiosity, and wanderlust that have taken me to this point in my life, and my mother's special balance of compassion and determination is something I always strive for. The recent arrival of my son, Lorenzo, marks a new chapter in my life and I prepared my thoughts on this final culmination of my graduate career while under his blissful gaze.

Finally, I would like to thank my wife, Zoë, to whom this dissertation is dedicated. The nature of my boundless appreciation is very personal. I will only say that this accomplishment belongs to both of us.

ABSTRACT

For the ancient Maya of the northwestern Yucatán Peninsula, caves and cenotes either functioned as the primary sources of drinking water or were seasonally used as last resorts when all other reserves were exhausted. These watery portals, which were imbued with sacred qualities, are as much a part of the cultural identity of the northern lowlands as they are integral components of the enigmatic karst landscape. Unlike the northwestern peninsula, a range of readily available freshwater sources including wetlands and numerous small cenotes characterizes an inland portion of Quintana Roo located in the northeastern corner of the Yucatán Peninsula. This largely unstudied area, known as the Yalahau region, also exhibits evidence of extensive ancient settlement.

Given the relative abundance and accessibility of surface water in northern Quintana Roo, an archaeological cave survey was designed to evaluate the nature and extent of cave use in the Yalahau region. The primary goal was to determine whether or not caves were reserved for ceremonial activities and if so, whether evidence of their specialized appropriation could be identified. The secondary goal was to assess the extent to which the archaeology of the caves in the region could provide functional and chronological information regarding both regional settlement and the organization of the sacred landscape. If water can be easily procured at the surface of the Yalahau region, one would expect evidence of its collection from caves to be characteristic of more ceremonial behavior. Moreover, if remote sources of cave water were especially valued, evidence of their exploitation should be observable even in areas where more accessible water sources exist. Additionally, we should be able to identify those natural speleological characteristics that contributed to cave selection as well as influenced the spatial manipulation of the cave environment.

Between 1996 and 1999, twenty caves of archaeological interest were investigated in the Yalahau region. Research demonstrates that caves are neither the only nor the most accessible means of water collection in the Yalahau region, yet their modification is indicative of the reverential appropriation of cave water. This study articulates the relationships between caves and surface sites and reveals how the ancient Maya conceptualized, transformed, and interacted with caves in region.

CHAPTER 1

INTRODUCTION

The hope of solving this important question by means of evidence easily accessible, but hitherto neglected, and the many chances of a hunt in the subterranean twilight, preoccupied our thoughts as, suddenly equipping an expedition, we packed up our provisions, tents, medicines, and instruments, and set out for Yucatan.

Henry C. Mercer, *The Hill-Caves of Yucatan* (1896:15)

Much to his chagrin, Mercer's "important question" regarding the presence of Paleolithic deposits interred within the caves of Yucatán was resoundingly answered in the negative. Instead he revealed evidence of a rich tradition imbedded in a complex system of meanings that he was neither prepared to comprehend nor inclined to ponder. His investigations were an early, fortuitous step into the rapidly developing field of Maya cave archaeology.

More recent studies demonstrate that among the ancient Maya, caves were associated with the concepts of creation, fertility, and the underworld (Bassie-Sweet 1991, 1996; Brady 1998; MacLeod and Puleston 1978; Stone 1995). In fact, the cave as a place of emergence is a pan-Mesoamerican theme (Heyden 1975, 1981; Taube 1986; see also Manzanilla 2000). Caves were an integral part of the Maya sacred landscape (Brady 1997a; Brady and Ashmore 1999; Brady and Bonor Villarejo 1993; Stone 1995) and served as staging areas for ritual activities (Andrews 1970; Bonor Villarejo 1989a; Brady 1989; Pohl and Pohl 1983; Stone 1989; Thompson 1959, 1975). A number of ethnographic works remark on not only the deliberate inclusion of caves and cenotes into the organization and formation of community space and identity, but also the continued sanctification of these subterranean and watery places (Redfield and Villa Rojas 1934; Roys 1935; Villa Rojas 1947; Vogt 1976, 1981; see also Holland 1963:27; García-Zambrano 1994).

Caves containing pools of water represented especially sacred environments to the ancient Maya (Brady and Stone 1986:22) and the collection of *suhuy ha'* (or "virgin water") from caves is thought to have been a common practice (see Thompson 1975). Nevertheless, the treatment of caves and cenotes in the Yucatecan literature has drawn attention away from the special nature of cave water and the significance of its sacred underground context. In Yucatán and northeastern Campeche, the cave/cenote was the primary source of water for some communities and the last resort for others. Either way, the daily need for this precious resource left residents of the region with little choice than to follow any and all conduits to the water table.

Our general characterization of the natural environment of the northern Maya Lowlands suggests that this relationship between the Maya and caves should hold true across the peninsula. However, not all areas uniformly lack a range of readily available water sources. Such is the case in northernmost inland Quintana Roo. This zone of wetlands and low, forested hills is known as the Yalahau region (see figures 1.1 and 1.2). In addition to sizable bodies of surface water, numerous cenotes and natural wells (or microcenotes) are found throughout this unique and largely unstudied region (see Chapter 2 for a more in-depth explanation). If caves were present within this water-rich region, would they too function as primary or exigent sources of water?

Due in part to the region's inaccessibility and relatively low elevation, it has not been an attractive target for scholarly cave exploration. A rather ambitious, peninsula-wide survey of caves by James Reddell (1977) provides barely a glimpse beneath the surface of the Yalahau and is essentially limited to a single, previously reported and presumably non-archaeological cave near the community of Nuevo Xcan (1977:249). Similarly, the valuable atlas of Maya caves assembled by Juan Luis Bonor Villarejo (1989a) does not list any caves for the inland area of Quintana Roo north of Cobá. The closest well-known cave site is the Gruta de Xcan, which is located along the western boundary of the Yalahau region in Yucatán (Benavides Castillo 1983; Márquez de González et al. 1982). It is

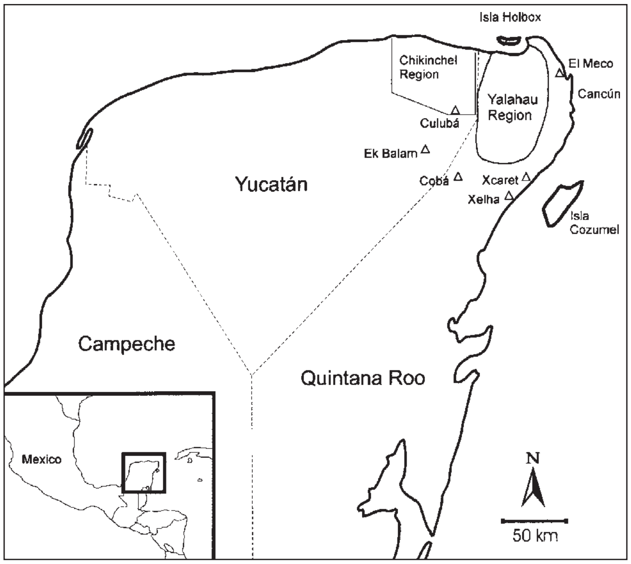


Figure 1.1. Location of the Yalahau Region.

likely that the region's high water table (which is thought to be indicative of cave-poor terrain), the absence of massive civic-ceremonial centers (on the order of Chichén Itzá or Cobá), and the introverted nature of local *ejidos* have all contributed to the region's academic isolation.

In 1993, Scott L. Fedick and Karl A. Taube directed an archaeological reconnaissance of the region (eds.1995). This field season led to the development of the Yalahau Regional Human Ecology Project—a long-term, interdisciplinary research effort focusing on the relationship between the ancient Maya and the environment of northern Quintana Roo. After visiting a number caves in 1993, I became aware of both the frequency of caves within the Yalahau region and the omnipresent signs of human activity found within them. I returned in 1995 in order to conduct a more deliberate reconnaissance. After only a few short weeks, we had identified nine additional caves. Evidence of ancient Maya activity included deposits of pottery and other artifacts, altars, architectural features, *haltunes* (carved stone troughs), modifications of cave interiors, mining, speleothem breakage and removal, and rock art. Having identified the requisite data, I initiated the Yalahau Archaeological Cave Survey in 1996 and began my dissertation research in earnest.

Research Goals, Questions, and Hypotheses

My initial task was to evaluate the nature and extent of cave use in the Yalahau region. This could be easily accomplished by conducting an objective assessment of the identifiable deposits and modifications in each of the caves within a manageable sample (see table 1.1). My primary goal was to isolate the ritual function of the caves and identify evidence of their specialized appropriation. The secondary goal was to determine the extent to which the archaeology of the region's caves could provide functional and chronological information regarding both regional settlement and the overall cultural organization of the landscape. At the same time, the cave survey hoped to take advantage of on-going investigations of surface sites by integrating their results into the analysis of cave function and chronology.

The most obvious question concerned the nature of cave use in a water rich environment. Given the accessibility of surface water in the region, were the caves reserved for ceremonial purposes? If so, what are the material correlates of ritualized water collection? Furthermore, what are the possible emic criteria for specialized cave selection or appropriation and how was it achieved? These were the fundamental questions that shaped the research design.

If water can be easily procured at the surface via a range of sources, one would expect evidence of water collection from caves to be characteristic of more ceremonial behavior. Moreover, if water from remote and relatively inaccessible cave pools (or from dripping

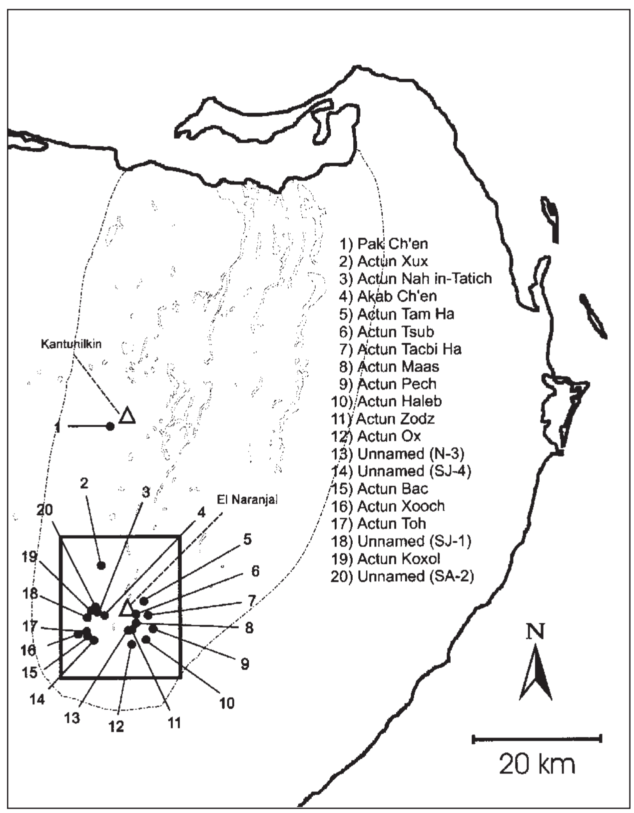


Figure 1.2. Caves of the Yalahau Region. Regional and wetland boundaries are delineated.

speleothems) was especially valued, we should see its exploitation *even* in areas where alternative (that is, more accessible) water sources exist. Secondly, in caves that have been appropriated for ritual activities, we should be able to identify those natural speleological characteristics that contributed to their selection as well as influenced (or determined) the spatial manipulation and (re)organization of the cave environment. The abundance of accessible water in the Yalahau region, combined with the relative inaccessibility of its watery caves, makes the region ideally suited for such a study.

Research Methodology

The first step towards realizing project goals and addressing my hypothesis was to record different cave sites until a threshold number (i.e. a manageable quantity) was reached. A roughly 200 km^2 survey area was selected in the southern Yalahau region. This portion of the region is water rich yet exhibits slightly more pronounced uplands (throughout which caves are more likely to form). Additionally, the civic-ceremonial center of El Naranjal (and the modern Maya community of Naranjal) could be used as a central place from which the survey could expand in a radial fashion. Caves were located with the assistance of local guides, plotted on 1:50,000 topographic maps with the aid of a Global Positioning System (GPS) receiver, and assigned an alphanumeric designation. Each designation includes the initial(s) of the *ejido* in which the cave is located, followed by a sequence number. In most cases, the local guides (often with my consideration) gave the caves formal names. There is no doubt that numerous other cave sites exist within this vast survey area; however a thorough regional survey or inventory was not the purpose of the present study.

By the end of the 1996 field season, eighteen of the twenty caves (in figure 1.2) had been investigated. Of these, a sub-sample of ten caves was selected for detailed study. The primary criteria included the presence or absence of cave pools and the nature of cave accessibility. An attempt was also made to include caves both near the site center of El Naranjal and at the far reaches of its periphery. With the understanding that cave morphology lies along a continuum (see the section entitled "The Lexicon" below), five highly flexible categories were devised.

A common cave type in the horizontally-bedded karst of the Yalahau region is the collapse dome. Mercer's description of "evidence easily accessible" (in the opening quote of the dissertation) does not apply here. These voluminous caves, with vertical entrances and pools of water, make up the first category and include Actun Toh, Actun Tacbi Ha, Actun Tam Ha, and Actun Tsub. More accessible caves with pools include Pak Ch'en (which was added to the survey in 1997) and Akab Ch'en. A separate category for more constricted caves with remote pools includes Actun Pech. Dry caves were separated into two categories: enclosed spaces (i.e. dark caves) such as Actun Zodz and more open rockshelters such as Actun Maas and Actun Xooch. The extent to which the remaining caves in the survey fall within these categories is evident in their individual descriptions (see Chapter 4). Once again, the caves listed above were those selected for more in-depth and systematic investigations.

Each cave in the sub-sample was included in a program of detailed mapping and recordation. The combination of a random and judgmental sampling

	Enclsd.Cave	Rk.Shltr.	Vert.Entr.	Drk.Zone	Pool	Haltun	Stairwy.	Wall/Terr.	Altar	Rk.Art	Spel.Brk.	Mine	Assoc.Struc.
Pak Chen	●				●		●	●	●	●	●		●
Actun Xux		●				●	●	●			●		
Actun Na in-Tatich		●						●					
Akab Chen	●				●		●	●	●		●		●
Actun Tam Ha	●		●		●		●	●					●
Actun Tsub	●		●	●	●						●		●
Actun Tacbi Ha	●		●		●		●	●			●	●	
Actun Maas		●				●		●	●				
Actun Pech	●		●	●	●		●			●			●
Actun Haleb	●			●			●	●			●		●
Actun Zodz	●					●		●	●		●		
Actun Ox		●						●			●		
Unnamed (N-3)		●								●			
Unnamed (SJ-4)		●									●		
Actun Bac	●		●	●			●						
Actun Xooch		●					●	●	●	●			
Actun Toh	●		●	●	●		●	●	●	●	●	●	●
Unnamed (SJ-1)	●		●		●		●						●
Actun Koxol		●									●		
Unnamed (SA-2)	●										●		

Table 1.1. Presence of selected features and characteristics by cave.

strategy was used for the collection of surface material. Due to their valuable role in functional and behavioral interpretation, all whole (or nearly whole) vessels, caches, and artifact clusters observed during the investigations were plotted and recovered. Due to the exceptionally rich archaeological history of Actun Toh, special attention in the form of excavations was applied to this cave. Similarly, the relatively elaborate corpus of rock art in Pak Ch'en warranted both its inclusion in the survey and its expanded treatment in the dissertation. It should be noted that research priorities and logistical factors, as well as *ejidal* and governmental discretion, often dictated the degree or extent to which these field activities could be conducted. Consequently, this is reflected in the nature of the descriptions (of both sampled and sub-sampled caves) in Chapter 4.

If we are to hypothesize that many of the water-bearing caves in the region were reserved for ceremonial rather than utilitarian activities, it is important to take inventory of all fresh water sources that would have been available to local residents in the past. During my reconnaissance, I recorded a number of ancient wells, micro-cenotes, *aguadas, bajos,* and an unreported *sabana.* Not included are the eight wells of El Naranjal reported by Fedick and Winzler (1995), or the currently used (and probably ancient) wells of the modern Maya communities located within my survey area. Similarly, all evidence of ancient settlement observed during the course of the survey was recorded. Such information is critical in identifying direct relationships between surface structures and caves as well as the greater influence of caves in the formation of cultural landscapes.

A Brief History of the Project

As stated above, the pilot field season of the Yalahau Archaeological Cave Survey was primarily concerned with performing an opportunistic reconnaissance of the proposed study area. A number of the caves identified in 1995 were not revisited during subsequent seasons. Therefore, information presented here regarding those caves is knowingly limited. The 1996 through 1998 field seasons were highly productive and substantial amounts of data were collected from the ten caves within the sub-sample (Rissolo 1997, 1998a, 1998b, 1999; Rissolo and Heidelberg 1998).

Research tasks during this period largely involved mapping. Cave maps presented in the dissertation take one of two forms: they are either the results of complete surveys (accomplished with a compass, clinometer, and tape) or they appear as sketch maps and/or profiles. The latter were accomplished with the aid cursory compass coordinates and distance measurements. Seven of the caves in the sub-sample were surveyed in detail. An accurate profile was produced for Actun Tsub, though a plan map was not. Akab Ch'en was sketched, while logistical constraints prevented the mapping of Actun Xooch. Also during this period, images from those caves that contain rock art were drawn and photographed.

Though minor surface collections were made in 1998, the 1999 field season was essentially devoted to the recovery of ceramic material as well as additional mapping and rock art recordation (Rissolo 2001a, 2001b). Collections from eight caves in the sub-sample were produced (the largest being from Actun Toh). Additionally, excavations were conducted in Actun Toh in order to both recover chronologically sensitive material and determine the nature of particular cave modifications. The combined ceramic collections were analyzed (in a collaborative setting) at the Ceramoteca of Centro INAH Yucatán (Mérida) during summer 2000 (Rissolo and Ochoa Rodríguez 2001; see also Ceja Acosta and Rissolo 2001).

The Lexicon

The terms "cave" and "cenote" are particularly problematic. The extent to which our desire to categorize these natural phenomena can distract us from the study of their cultural appropriation, is discussed in final chapter of the dissertation. The notion of the prototypical cylindrical cenote has been made fast in our mind's eye thanks to Chichén Itzá. However, this term (from the Maya *ts'onot*) is used to describe a range of watery subterranean environments. As Antochiw (1999:19) notes, the myriad forms of cenotes in Yucatán presented a challenge to those first Spaniards who tried to describe them. The popular four-type scheme for Yucatecan cenotes employed by Pearse et al. (1936) is useful within certain contexts, however, I choose to apply a less rigid strategy in my descriptions of karstic features.

Native terminology regarding caves and cave-like spaces continues to be an extremely fertile and promising area of research and will no doubt provide more meaningful alternatives to Western geomorphological classifications. The interpretive potential of such information, collected in an ethnographic context, was not fully realized in this present study. Nevertheless, a few important distinctions were made clear to me during the course of my investigations. The term *ts'onot* can apply to any cave that provides access to the water table. The stereotypical "well" (marked by a collar or windlass) is always referred to as *ch'en*. However, any *ts'onot* that is regularly used for water collection can also be a *ch'en*. The most generic term for cave is *aktun*. As a general rule, I used this term in my cave names unless a different place name already existed or unless I was instructed otherwise. As I came to realize, a few of the caves in my survey, that I had designated *aktun*, were referred to by locals as simply "*lelo' ts'onot*" or "that cenote."

The term *aktun* was also applied to rockshelters (without my prompting). When I expressed interest in visiting *aktunob*, very often I was led to an open rockshelter site. It was immediately apparent that these too were considered "caves." My use of the term "rockshelter" applies to any "cave" whose entrance diameter is greater than the horizontal length of its deepest alcove. The conflated term "cave/cenote" is used in this dissertation for the sole purpose of avoiding a cenote's morphological association with the idealized sinkhole of Chichén Itzá fame.

The Orthography

Solely as a matter of personal preference, all place names in this dissertation (either recorded or created) appear in the colonial orthography. For example: *Aktun Soots'* appears as *Actun Zodz*. All other Yucatec Mayan words are written in the new or modern orthography. The fact that references to the Maya rain god appear in this dissertation as *Chaak*, *Chac*, or *Chack* is not the result of editorial error, but rather can be attributed to the varied (and sometimes non-discretionary) transliteration of Yucatec Mayan. Certain pluralized terms which are Mayan in origin, such as *haltunes*, are occasionally used since they have entered into the Yucatecan Spanish vernacular.

CHAPTER 2

THE STUDY AREA: THE YALAHAU REGION AND NORTHERN QUINTANA ROO

The Natural Environment

As mentioned in the previous chapter, the Yalahau region was selected for the present study largely because of its unique physical characteristics. A thorough understanding of the region's natural setting is critical to the success of on-going multidisciplinary investigations of the area's human ecology. Several recent works provide a comprehensive characterization of region's physical setting (Bell 1998; Fedick et al. 2000; Fedick and Taube 1995; Lazcano-Barrero et al. 1995; Mathews 1998). Provided below is a more concise, purposive description of the pitted karst topography and ecology of the Yalahau region.

The Karst Landscape and Regional Hydrogeology

The region, referred to geologically as the Holbox fracture zone, is characterized by linear depressions and swales which follow an underlying system of horst and graben features within the horizontally-bedded Tertiary carbonates (Tulaczyk et al. 1993; Weidie 1982; see also Weidie 1985). A highly localized rainfall anomaly has contributed to an unusually thick freshwater aquifer lens (Isophording 1975) and pronounced dissolution activity (Southworth 1985). Consequently, water is available at or near the surface—if not within the low-lying wetlands (or *sabanas*), then via the region's numerous cenotes and micro-cenotes (Winzler and Fedick 1995; see also Bell 1998).

The porous limestone stratum, known as *sascab*, which lies beneath the hardened surface cap-rock (Isphording 1975:244, 246), facilitates the rapid and complete infiltration of rainwater across the peninsula. In areas of greater relief and higher rainfall (which aptly characterizes the block-faulted zone of the Yalahau) the rapid dissolution of the sub-*sascab* strata enables extensive cave formation (see Reddell 1977:217).

If horizontal maze caves are present in the Yalahau region, they are quite probably rare. The dominant cave type appears to be the collapse dome. These chambers are the result of breakdown, combined with the forces of dissolution and erosion (Bögli 1980:144–150). When a broad horizontal cavity becomes too wide to support the burden of its ceiling, the overlying rock will detach along existing bedding planes. The subsequent accumulation of collapse debris is removed by the action of karst water. The expanded cavity or chamber assumes an "equilibrium of forces" (Jennings 1985:28). Therefore, if the walls of the cavity expand outward, a new equilibrium is established as the ceiling compensates (by expanding upward). This bell-shaped cave form corresponds to "type A" in the taxonomy of cenotes proposed by Pearse et al. (1936). If the floor of the collapse dome meets the water table, then the eventual complete collapse of its ceiling would result in the creation of an open cenote or "type B" (Pearse et al. 1936). Should the floor of the collapsed dome be dry, it might be referred to simply as a shaft or pit. The rockshelters encountered during the survey are categorically different in that they are found beneath the overhanging walls of dolines (or broad, shallow sinkholes).

The detailed lithology of the Yalahau region has not yet been described (for a peninsula-wide discussion see Isphording 1975; see also Lesser and Weidie 1988). Most generally, the region consists of a range of limestones (including fossiliferous formations). During the course of this study, beds of dolomite (which are *sascab*-like in texture) have been identified. The process of diagenesis that resulted in the conversion of limestone to dolomite was probably facilitated by the action of magnesium-laden meteoric water (rather than sea water). The mining of this material from the region's cave is discussed in Chapter 4.1 and Chapter 7.

The Regional Ecology

Much of what we know about the ecology of the Yalahau region is the result of investigations that are associated with the Yalahau Regional Human Ecology Project and the Reserva Ecológica El Edén (see

Fedick et al. 2000; Fedick and Taube 1995; see also Lazcano-Barrero et al. 1995). Well-drained portions of the region are covered with thin lithosols and pockets of deeper rendzina soils. Fedick and Hovey (1995) provide a sample distribution of what local *milperos* refer to as *box luum* (productive "black soils") and *chaac luum* (less productive "red soils"). Soils within the inundated wetlands are characterized by silty clay laminae with overlying peaty deposits (Fedick et al. 2000). Throughout northern Quintana Roo, the deepest soils are found within a variety of karstic depressions.

Vegetation zones range from seasonal or perennial wetlands *(sabanas)* and swamp forests *(tintale)* to upland, semi-deciduous tropical forests. For information on the ancient manipulation of the region's wetlands, see Fedick (1998), Fedick et al. (2000), and Morrison (2000). For a comprehensive overview of the region's ecology, see Gómez-Pompa et al. (2001).

Previous and Current Archaeological Investigations

The Yalahau Region

Archaeological reporting from the Yalahau region did not appear until 1946, when Alberto Escalona Ramos described his brief visit to Kantunilkin. Sanders (1955, 1960) conducted the first archaeological reconnaissance of the region and provides the results of surface collections and minor excavations at Chiquilá, Monte Bravo, Solferino, Vista Alegre, El Diez, Leona Vicario, and Kantunilkin (see figure 2.1). The coastal survey by Eaton and Ball (1978) includes the site of Vista Alegre, which is located on the Laguna Yalahau, along the region's northern boundary. These and other investigations across northern Quintana Roo are summarized by Anthony P. Andrews (1985). A later report on the site of San Angel (see figure 2.1) was prepared by Taube and Gallareta Negrón (1989). Previous and subsequent trips to the region by Karl A. Taube, Fernando Cortés de Brasdefer, Edward Kurjack, Rubén Maldonado, Sonia Lombardo, and Scott L. Fedick were motivated by a developing appreciation for the rich and enigmatic archaeological landscape of the Yalahau region.

As is evident, the Yalahau region proper had received little archaeological attention prior to the formation of the Yalahau Regional Human Ecology Project in 1993. Research conducted during the initial field season was centered in and around the civic-ceremonial center of El Naranjal (also referred to as Tumben-Naranjal; see figure 2.2). For a more comprehensive introduction to the Yalahau region as well as the results

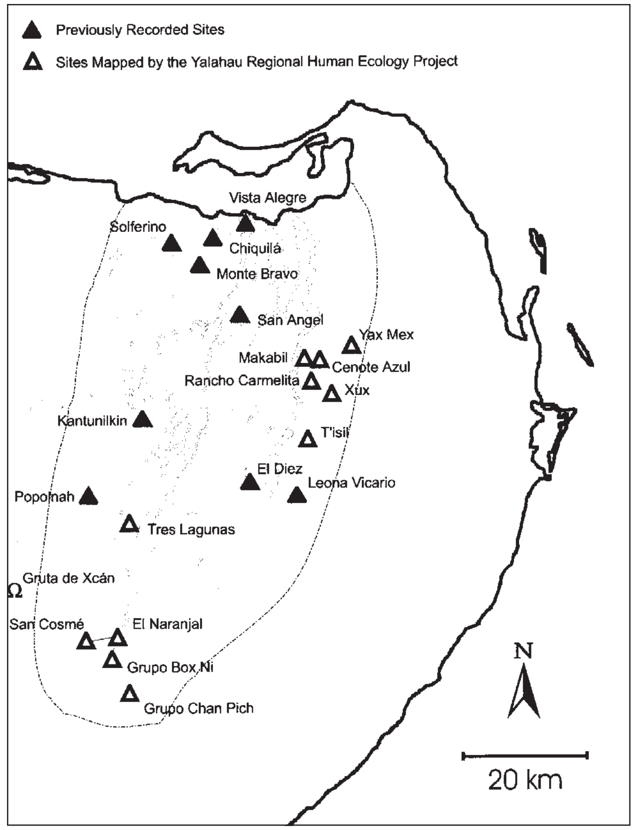


Figure 2.1. Sites of the Yalahau Region.

of the multifaceted 1993 season, the reader should consult Fedick and Taube (eds.1995).

The unique Megalithic architecture at El Naranjal (and nearby sites) was first studied by Taube (1995). This style is reminiscent of Aké and Izamal to the west and is believed to correspond to the Late Preclassic to Early Classic periods (Taube 1995; see also Andrews IV and Stuart 1975:80; Roys and Shook 1966:49–50; Sidrys 1978:157; Velázquez Morlet et al. 1991:61; Webster 1979:156–157). In her authoritative study of the nature and distribution of the Megalithic style across the northern Maya Lowlands, Mathews (1998) evaluated the extent to which this style is suggestive of a northern interaction sphere during this early time frame. Issues relating to the identification or designation of interaction spheres that at one time included northern Quintana Roo are briefly discussed below.

Additional research at El Naranjal between 1995 and 1999 involved excavation of the site's *sascaberas* (Lorenzen 1998, 1999), recordation of Postclassic modification to the site's monumental architecture (Lorenzen 1999), and identification of outlying settlements and topographic features (Rissolo 1998a).

During this same period, a new program of reconnaissance and mapping was initiated in the northern portion of the Yalahau region. Extensive early settlement and evidence of wetland manipulation was identified within the Reserva Ecológica El Edén and gave rise to a number of related research projects (see Fedick et al. 2000 for an overview; see also Andersen 2001; Fedick, ed. 1998; Morrison 2000). Recently, focus has shifted to the site of T'isil, which is located just south of El Edén reserve. As work progresses, new insights into the region's early settlement history emerge (Amador 2001; Ceja-Acosta 2001; Ceja-Acosta and Rissolo 2001; Fedick and Mathews 2001; Glover and Amador 2001; Mooney-Digrius 2001; Morell-Hart 2001). Future research in the northern Yalahau region will include continued studies of community organization at T'isil, an extensive settlement survey by Jeffrey Glover and Fabio Esteban Amador, continued analysis of regional ceramics by Jorge Ceja Acosta, and further investigation of the purported trans-regional sacbe by Jennifer Mathews (see Mathews 1998, 2001).

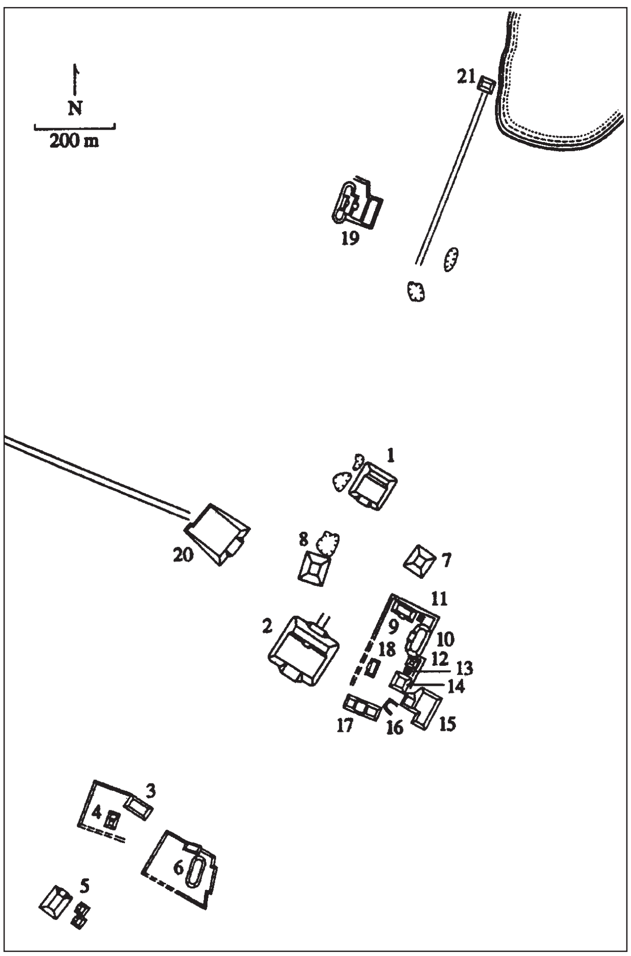


Figure 2.2. Map of El Naranjal (after Fedick and Taube 1995:fig. 1.8).

Research at the Region's Periphery

The nearest major civic-ceremonial center is Cobá, which is located approximately 35 km from the southern terminus of the Yalahau region (see map in figure 1.1). Early work at the site was reported by Thompson et al. (1932). For the results of subsequent research projects see Con (2000), Con and Martínez Muriel (1992), Folan et al. (1983), González Fernández (1975), Manzanilla (1987), and Robles Castellanos (1990). Robles Castellanos and Andrews (1986) suggest that Cobá was the dominant polity of an eastern sphere during the Terminal Classic. Mathews (1998) argues convincingly that sphere affiliations may have differed greatly in northern Quintana Roo during the Late Preclassic to Early Classic periods. I would stress that many of the questions concerning sphere designation and political organization during this early phase are "ceramics questions." Mathews' research provides a foundation from which formal, problem-oriented analyses of regional pottery can progress. It should be noted that the Middle Preclassic material recovered from the caves of the Yalahau region (and described in Chapter 5 of the dissertation) provides a preliminary look into the region just beyond the Cobá periphery, at a time before the emergence of this powerful center.

To the north of Cobá is the smaller site of Punta Laguna (see Cortés de Brasdefer 1988) and to the northeast is the major center of Ek Balam. Middle Preclassic material was also recovered at Ek Balam (Bey et al. 1998) and the site was likely an important power during the area's early settlement. North of Ek Balam is a region defined by the Contact Period province of Chikinchel. This area, which borders the western edge of the Yalahau region, has been extensively studied by Susan Kepecs (1997, 1998; see also Kepecs and Boucher 1996; Kepecs and Gallareta Negrón 1995). A consideration of the ceramics from Chikinchel is included in Chapter 5 of the dissertation.

Few studies of the northernmost Caribbean coast (to the east of the Yalahau region) have been produced. Andrews and Robles (1985) describe excavations at the site of El Meco and a description of the Ecab province is provided by Benavides Castillo and Andrews (1979). The sites of Cancún (to the south) were first reported in detail by Lothrop (1924) and later research on the island was conducted by Andrews IV et al. (1974). A review of the archaeological literature regarding the Caribbean coast south of Cancún—as it pertains to coastal cave sites—is presented in the following chapter.

CHAPTER 3

REVIEW OF THE CAVE ARCHAEOLOGY LITERATURE

Introduction

The last decade has seen unprecedented interest in Maya cave archaeology. Not only has the pace of cave reporting and data collection increased dramatically, but also caves have emerged from academic isolation to be rightfully integrated into current studies of sacred landscape and cosmology. Maya cave archaeology, as a sub-field, is experiencing its second major transition; the first was essentially empirical, while the present is more theoretical.

The discovery of Naj Tunich in the Petén was undoubtedly a significant turning point in our understanding of caves. Its grandeur and observable evidence of elite ritual activity resonated through the archaeological community, but it did not fit the field's overall concept of Maya caves. Thus a closer scrutiny of cave use among the Maya was necessary (Brady 1989). The large corpus of hieroglyphic inscriptions was also immediately recognized as being of enormous importance (Stone 1995). The Naj Tunich discoveries were a catalyst for the inclusion of a cave survey in the Petexbatún Regional Archaeological Project. It was the success of this survey (Brady 1997a; Brady et al. 1997) that rapidly moved caves from second-tier contexts—whose inclusion in any given site's research design was optional, at best—to receiving more equitable consideration. The implementation of cave surveys, in conjunction with surface investigations, is a recent strategy that continues to spread across the Maya area (e.g. Awe 1998; McAnany et al. 1998; Prufer 2001), and is exemplified by the present study.

The current transition is characterized by more theoretical discussions in which caves are viewed as inseparable components in our reconstruction of ancient Maya world-view. Just as greater academic rigor is reflected in cave reporting, so too have our evaluations of cave meaning been marked by more comparative and interpretive approaches. The synthesis of ethnography, iconography, and linguistics has dramatically advanced the state of Maya cave studies. Examples include Brady's paper on the caves of the Petexbatún (1997) as well as Stone's book on Naj Tunich (1995). Fortunately, this development does not come at the expense of sound field methodology, as both are improving simultaneously.

A full evaluation of all available literature on Maya cave archaeology is well beyond the scope of this dissertation and, I would argue, unwarranted for two reasons. First, an authoritative review of the historical development of the cave literature is available in James Brady's dissertation (1989). A more current (albeit abbreviated) historical review was presented by Brady at a Society for American Archaeology meeting (1997b). Second, a fairly complete topically indexed bibliographic guide to the Mesoamerican cave literature has already been published (Brady 1999a). A number of dissertations and manuscripts currently in progress will expand our access to, and further contextualize the cave material in the near future. Relevant publications of a more interpretive nature are integrated into the final chapter of the dissertation rather than discussed here.

This chapter can best serve the reader by providing a finer-grained, historical analysis of cave and cenote archaeology across the northwestern Yucatán Peninsula. Of particular interest are the ideas regarding cave use that have emerged from a long-established archaeological research tradition in this part of the Maya area, as well as ethnohistorical accounts and ethnographic observations. The discussion will revolve around the themes of cave function and cave frequency. This review will establish the current intellectual and theoretical context in which the advances made by this study of cave use in the unique, water-rich Yalahau region can be evaluated. Following this section, is the first inclusive, regional review of available cave literature specific to northern Quintana Roo.

Yucatecan Cave Archaeology: A Historical Perspective

Water and Cave Function

One cannot imagine Yucatán without cenotes. Undoubtedly, these natural windows to the water table are inextricably linked to the enigmatic landscape of the northwestern peninsula and are part of the collective identity of modern Yucatán and northern Campeche. They are not only fonts of precious water but of well-known myths and legends like those of Nicte-Ha or Xtacumbilxunan (see Trujillo de Echanove 1959). Early accounts by explorers to the region, such as John Lloyd Stephens and Frederick Catherwood (Stephens 1843), were characterized by awe and fascination of these watery chasms. However, it was not until further into the nineteenth century that more scholarly attention began to take shape. (See figure 3.1 for a map of many of the reported cave sites in Yucatán).

In 1895, Henry C. Mercer followed the Corwith expedition to the hills of Yucatán in hopes of discovering evidence of Paleolithic occupation hidden within the region's caves. Though fruitless in fulfilling his intended goal, Mercer's accomplishment was impressive even by standards of modern field archaeology. He explored twenty-nine caves (thirteen of these were excavated), which displayed abundant evidence of ancient Maya ritual activity. In his book (1896), he describes the water-bearing caves he visited, including the Gruta de Chac, as well as the numerous *haltunes,* which were ubiquitous in those caves that did not reach the water table.

Prior to Mercer's trip to Yucatán, Edward H. Thompson investigated Loltún cave, and he reported on his work in 1897. Thompson provides detailed descriptions and illustrations of what is arguably one of the most spectacular caverns in the northern Maya Lowlands. Like most of the caves in Mercer's survey, Loltún cannot be described as a cenote. However, among the numerous other features and artifacts were *haltunes*, which were also noted by Mercer during his trip to the cave (1896:98–125). More extensive investigations at Loltún were not carried out until 1977, when the remains of extinct fauna were recovered along with later Maya artifacts (Velázquez Valadez 1980, 1981; see also Millet et al. 1978). The much touted, but nevertheless important early human presence in the cave was also supported by a later study (González Licón 1986).

Perhaps influenced by a Western predisposition to imagine the most ancient settlers of a region to be cave dwellers, some archaeologists have erroneously interpreted various features in Loltún (e.g. hearths) as evidence of habitation. I would argue that this has been compounded by the fact that Loltún is not a cenote. Cenotes, regardless of their myriad natural forms, are already well established in the Yucatecan consciousness as geomorphologic receptacles of water, whose primary function has been ascribed by the people living among them since the peninsula was first settled. If not drinking water, what then was the attraction to Loltún? So essential were cave pools to the viability of life in areas such as the Puuc, that the strong presence of humans in a dry cave like Loltún could only be fully explained if quotidian habitation is considered.

Indeed, there is a tremendous wealth of references to, and studies of, cenotes and cave pools in Yucatán and Campeche, and a few bear mentioning here. For the purpose of this discussion on cave water, I will separate watery caves into two broad but meaningful categories. The first includes those cenotes in which the water's edge is remote and located deep within a cave, and the second includes those cenotes in which the water's edge is easily reached either directly from the surface or relatively near the surface. Ethnographic and ethnohistorical data, which suggest that these categories are rooted in emic notions of cave water, are discussed in the final chapter of the dissertation. The accessibility of cave water in Yucatán and Campeche is often a product of elevation (i.e. distance to the water table). In areas with the greatest distance to the water table, cave pools were sometimes used as a last resort in the struggle for potable water. In lower elevation areas, communities developed around more accessible cenotes, which were relied upon as the primary sources of water. The purpose of developing these distinctions here is that neither is the case in the Yalahau region.

We will first look towards the Puuc region, where Catherwood's memorable sketch of the cave at Bolonchen (Xtacumbilxunan) has shaped our conception of cave use in this upland zone (Stephens 1843, II:plate XVIII). In the highest reaches of these low karst hills, the water table is more often reached through a series of deep vertical shafts and tunnels, rather than through open cenotes. Xtacumbilxunan is one such example (see also Zapata et al. 1990). Another is the Gruta de Chac, which was explored by Stephens (1843, II:16–18) and later investigated by Mercer (1896:91–93) and Andrews IV (1965). Stephens asked the residents of a community near the rancho of Chack why they would live in an area where water was so difficult to obtain, and he remarks that "…this idea seemed never to have occurred to them; they said their fathers had lived there before them, and the land around was good for milpas" (1843, II:4). Stephens (1843, II:18) notes that although the modern communities near the Gruta de Chac may in fact adequately subsist on the water so arduously procured from the cave, such a source would not have been sufficient to support large ancient centers in the region.

Quite different from the Puuc region, both in terms of form and function, are the more open cenotes of lowland Yucatán. These prototypical portals to the water table functioned as sustaining centers of communities. Indeed, Morley (1947:12) points out the

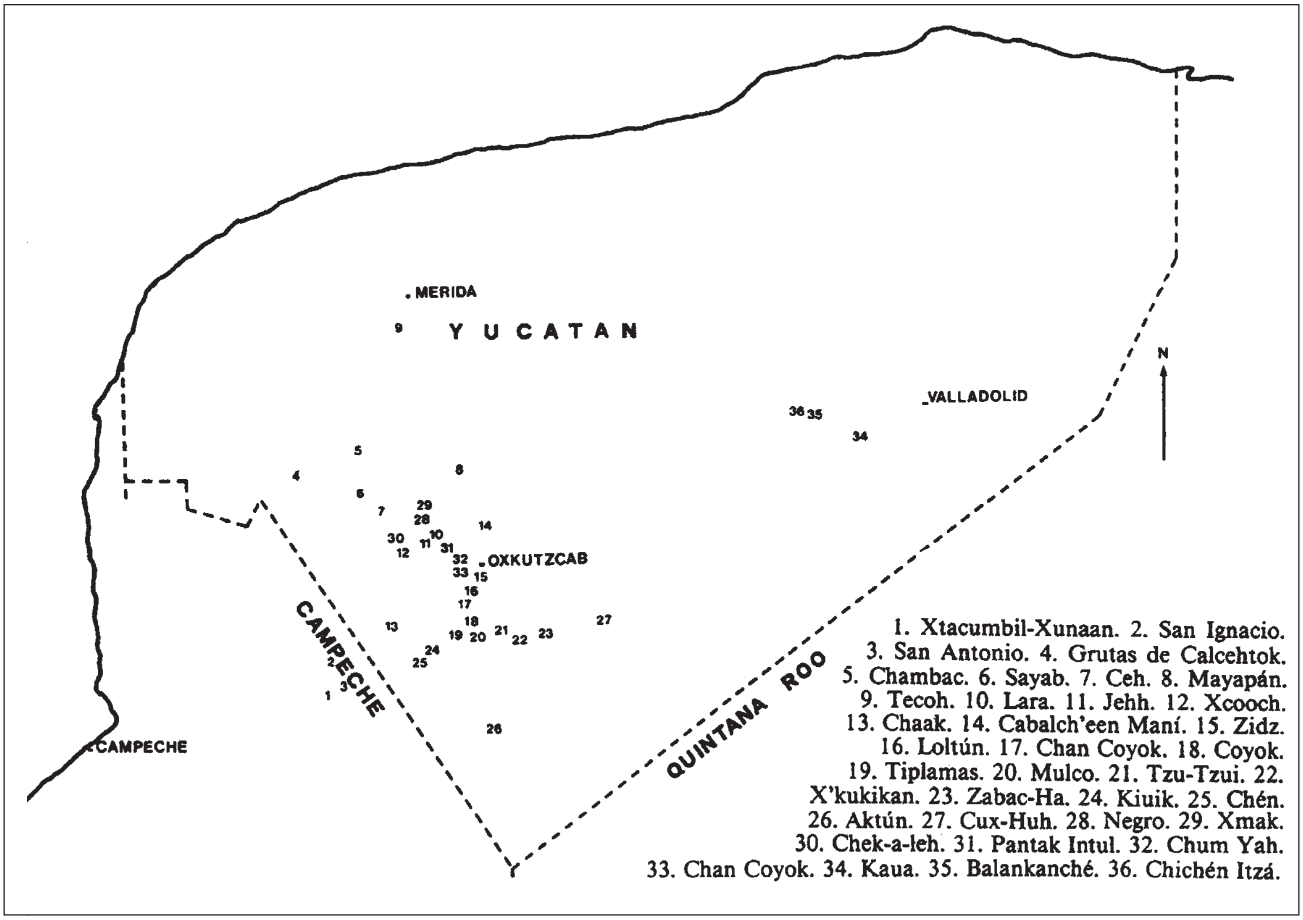


Figure 3.1. Cave sites of Yucatán and northern Campeche (after Bonor Villarejo 1989a:fig. 29a).

close connection between settlements and cenotes in this area. It is well known that in Yucatán, cenotes were closely linked to community identity. In his synthesis of cave function, Thompson (1975: xiv–xv) rates their use as sources of drinking water as the most important. This is noteworthy because it is the only utilitarian use listed among his major functions. Not surprisingly then, archaeologists in Yucatán have tended to stereotypically assign caves the function of water sources. While the ritual role of the Cenote of Sacrifice at Chichén Itzá is widely recognized, it is often assumed that its sacred function is somewhat unique and was made possible by the fact that the Cenote Xtoloc functioned as the site's utilitarian water source. The implicit assumption is that a ritual function is incompatible with a utilitarian function.

Cave archaeologists have begun to question these assumptions. The fact that cenotes are marked by crosses, named in prayers (Góngora Cámara and Preuss 1990:144; Redfield 1941:117) and are the focus of ceremonies (Redfield 1941:118–119) indicates that they have a sacred significance regardless of their use as water sources. In the Puuc area, it is well known that chultunes (as well as aguadas) made urban life in the hills possible (Barrera Rubio 1985, 1987; Bonor Villarejo 1987a; McAnany 1990; Zapata Peraza 1987; see also Veni 1990). Barrera Rubio (1985) also mentions that the soil of the Puuc is excellent for agriculture and explains how the Maya were able to effectively mitigate the water situation by directing the construction and maintenance of chultunes and catchment basins. A detailed study of these features in the Puuc was conducted by Zapata Peraza (1989). Barrera Rubio (1995) raises the question of whether or not a "cave" must be a natural or human-made environment in order to possess sacred qualities. The study focuses on the modeled stucco sculptures found on the walls of chultunes— many of which are animals often associated with rain. He asserts that the sacred qualities likely ascribed to chultunes are due to the scarcity of water-bearing caves in the Puuc region. In other words, they functioned as surrogates.

Once again, the morphological continuum connecting the two extremes (remote cave pool and open cenote) and the sacredness of cave/cenotes will be explored in the final chapter of the dissertation.

Cave Frequency

Our attention now turns to cave/cenote studies in Yucatán, from which ideas regarding cave frequency, as well as cave function have emerged. As already noted, Mercer's investigation of nearly two dozen caves in the Puuc area remained one of the most extensive cave investigations for nearly 90 years.

The Mayapan project, conducted by the Carnegie Institution in the early 1950s, was unprecedented in terms of extensive regional cave reporting. Though few interpretive insights regarding cave function and meaning arose from the project, the mapping of caves in relation to surface structures, as well as the frequency of caves at the site would prove to have far-reaching implications. Robert E. Smith published many of the descriptions and illustrations of the cenotes at Mayapan (1953; 1954) and prepared the final ceramic monograph (1971). Philip E. Smith (1954; 1955) briefly explored the significance of the ritual positioning of architecture near caves at the site (e.g. Chen Mul). In total, twenty-six cenotes where identified within the site boundary (A.L. Smith 1962). In his report on Yucatecan ceramics, Brainerd provides maps of Chen Mul as well as the cenotes of Telchaquillo and Mani (1958). He also comments on the unique character of cave pottery assemblages (Brainerd 1958:7, 21), as will be discussed in later chapters. Strömsvik also reported on cave/cenotes within the vicinity of Mayapan (1953; 1954), including a more detailed report on the cave of Dzab-Na near Tecoh (1956).

Water in the cave/cenotes of Mayapan was not as remote or inaccessible as in the Puuc region, and no doubt accounted for much (if not all) of the site's daily needs. Heavily trafficked, masonry causeways like those found in the cenotes of Mucuyché (Stephens 1843:fig. 5) and Mani (Brainerd 1958:map 12) facilitated unencumbered, routine use. In Brainerd's illustration (1958:map 12), members of the modern community are depicted collecting water from a secondary access or "well" directly above the cave pool (around which collar and windlass were constructed). Despite quotidian appearances, the sacred nature of the cenotes at Mayapan is made obvious by offertory features like the platform in Cenote X-Coton (R.E. Smith 1953) and the modern rain ceremony at Cenote Itzmal Ch'en (Shook 1952:250).

The Mayapan project was particularly noteworthy in that it revealed the frequent occurrence of caves across the Yucatecan landscape. A more in-depth study of the relationship between settlement and the landscape at Mayapan was conducted by Brown (n.d.), and work by Eunice Uc González continues in the region. James Brady (personal communication 2001) has suggested that the relatively low profile of the Mayapan project (in relation to more grandiose Carnegie endeavors in the Maya area) resulted in the idea that the high frequency of caves at Mayapan was unique or atypical. The prevalence of single-cave studies has suggested to archaeologists that, while it is possible to have areas with multiple caves such as Mayapan, the more common situation is for caves to be rare and widely dispersed over the landscape. This idea has important implications for the study of caves. First, if caves are expected to be rare, there is little incentive to mount a search for something that may not exist. Second, a relatively rare feature is unlikely to be the focus of an important cultural complex since most communities would not have the opportunity to participate in it.

This view has drastically changed among cave archeologists as a result of cave surveys, which began in the 1980s. Juan Luis Bonor Villarejo conducted the first recent regional survey in Yucatán during his tenure with Proyecto Oxkintok. Bonor Villarejo recorded some 37 caves in the Oxkintok/Calcehtok region (1987a, 1987b, 1989b, see also 1989a). Further studies in the area were conducted by Evia Cervantes (1991) and Uc González and Canche Mazanero (1989). To the southeast, regional investigations centered at Oxkutzcab revealed several new cave sites (Strecker 1984, 1985; Stone 1989a; Bonor Villarejo and Sanchez y Pinto 1991). It became increasingly apparent from these studies that caves were both common and commonly used throughout the Yucatán. Equally important, the focus on the singular function of water collection began to broaden as a variety of features were recorded, such as painted scenes of elite activity on cave walls, interments, and the architectural enclosure of cave rooms. In fact, it is the very frequency of caves (i.e. the comparative investigation of multiple caves) that allowed for variability in cave function to be identified and assessed. Current regional surveys, like the Yalahau project, suggest that caves (in relation to settlement) are quite abundant and were readily integrated into the cultural geography of the peninsula.

More than any previous discovery in Yucatán, Balankanche expanded our appreciation for the ritual function of caves. Though the cave was known for some time (Ruppert et al. 1954), the spectacular inner passages were not revealed until 1959, when local guide José Humberto Gómez discovered a sealed entrance. The initial investigation involved several prominent individuals, including Piña Chán, and was reported by E. Wyllys Andrews IV (1961). The later book by Andrews IV (1970) describes the numerous artifacts found in the inner passages, and their contexts. Among the offerings were Tlaloc effigy censers, stone censers, spindle whorls, miniature pottery vessels, miniature manos and metates, and a fragment of a wooden drum.

The nature and positioning of the offerings, particularly the censers surrounding the prominent column on the "Throne of the Balam" (Group I), left little question as to the ceremonial significance of the cave. While other well known caves in Yucatán and Campeche, such as Loltún, the Gruta de Chac, and Xtacumbilxunan, were still (to some degree) commonly conceived of as habitation or water collection sites, the deposits in Balankanche were immediately recognizable as evidence of ritual activity. Moreover, its spatial and temporal relationship to Chichén Itzá demonstrated that the cave was an important part of the site's ritual circuit. Andrews' 1970 work also includes an explanation and transcription (prepared by Barrera Vásquez) of the ceremony conducted in the cave by local *h-menob*, for the purpose of appeasing the *Yum Balamob* (spiritual guardians). This appendix to Andrews' book contributed to the growing consensus that caves were indeed powerful sacred places.

Yucatán and Campeche have emerged as a single region, unique unto itself—physically, culturally, politically, and academically defined, not only by the landscape but also by people's familiarity and interaction with the landscape. In some way, academic inertia is responsible for our perceptions of archaeological Yucatán. The region's legacy of research and exploration overshadows its lesser-known neighbor, Quintana Roo, to the east. This clustering of research activity in the Yucatecan portion of the peninsula has, to some degree, shaped our notion of cave use across the northern Maya Lowlands in general. Indeed, Catherwood's famous image of water collection at Bolonchen essentially characterizes the popular conception of cave use in the Yucatán. Though the discovery at Balankanche was appreciated for its ritual significance, it was still seen as somewhat atypical of Yucatecan cave use.

As introduced in Chapter 1, the current study demonstrates that there are very real differences, in terms of cave use, between the Yalahau region and the western portion of the northern lowlands. A review and analysis of generalizations drawn from the long history of cave studies in Yucatán is essential to realizing the potential of new studies in northern Quintana Roo.

The Cave Sites of Northern Quintana Roo

I will admit that the modern Mexican state of Quintana Roo is a somewhat arbitrary geographic unit of study. As seen in figure 3.2, the new official political boundary (published in 1999) reveals that areas once considered part of Quintana Roo are now in Yucatán, and vice versa. However, the northern extent of Mexico's Caribbean coast and particularly the northern inland regions of the State appear to be, in many ways, both naturally and culturally distinct from western portions of the peninsula. A further complement to the unique character of northern Quintana Roo is the region's short academic history (as discussed earlier). The relative lack of scholarly attention, with respect to cave archaeology, has resulted in both a limited quantity of available site reports *and* the erroneous impression that the region lacks the kind of cave archaeology worthy of reporting. With the exception of the present study, no regional, comparative, problem oriented cave studies have been conducted in northern Quintana Roo. Therefore, the references discussed below offer more in terms of data for comparative purposes than they do in terms of interpretations of cave use patterning.

My review of the literature begins in and around the site of Xcaret (see Figure 3.3). In the mid 1980s, planned industrial development on the *predios* (parcels) of La Rosita and Punta Venado (also known as Rancho Ina) led to investigations of seven caves by INAH archaeologist Luis Alberto Martos López (1994a; 1994b; 1995; 1997). Three unnamed cave/cenotes at La Rosita were also reported (Martos López 2000:54–55). The presence of caves in the Rancho Ina/Punta Piedra area was initially reported by Terrones González and Leira Guillermo in 1983.

A very thorough *informe* on the archaeology of Aktunkoot was submitted by Martos López in 1994(b), but unfortunately has not been widely disseminated. This intensively modified cave contains a number of architectural features. Among them is a stairway, composed of dressed blocks of stone, which leads from an entrance down to a pool inside the cave. Near the water's edge are two groups of carved images. One consists of a series of frontal faces while the other, which was carved into a dripstone column, is more abstract. Throughout the cave are several rock walls and alignments. Martos López suggests that these features were intended to direct movement through portions of the cave. Clearly, a number of walls were constructed for the purpose of closing-off areas to create rooms (and were mapped and recorded as such).

In an article from *Arqueología*, Martos López

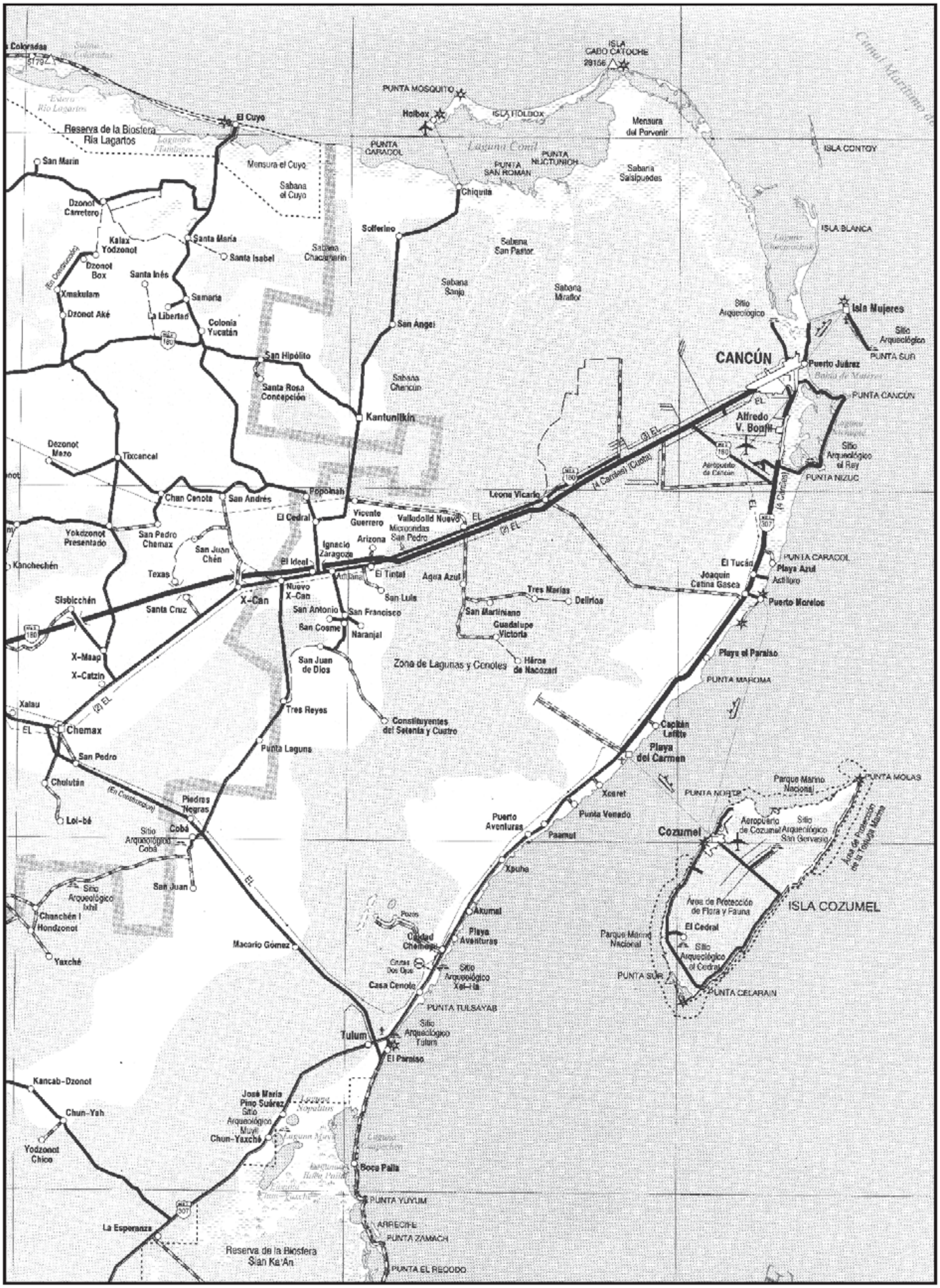


Figure 3.2. INEGI map of Quintana Roo. Note boundary with Yucatán.

(1994a:75–78) provides a brief description of six caves in the La Rosita and Rancho Ina area, including Aktunkoot.

Stairways were found in Caverna de las Escalinatas, Cueva de la Luz, and Cueva de las Caritas—the latter of which, incidentally, was named after a series of simple carved faces. An altar was recorded in Cueva de La Rosita and miniature temple in Cueva de Satachannah (Martos López 1994a:76–77). This temple and its cenote environment resemble patterns noted by Andrews and Andrews (1975) at Xcaret (discussed below).

In 1983, Terrones González and Leira Guillermo reported on a new group of structures at Rancho Ina, which they named Grupo de la Estela or Kisim Nah. This group, also referred to as El Kisim, is located northeast of Xcaret Group P, which was originally recorded by Andrews and Andrews (1975:39–44) during their coastal survey. Terrones González (1990) provides a map of Group P (which shows an adjacent cenote), as well as a short description of El Kisim and a brief mention of caves in the area. The relationship between the main temple structure of El Kisim and an extensive cavern system below (which was also explored by Terrones González), is discussed by Martos López (1995:421–422; 1997). Beneath the subfloor construction fill of the temple structure, they uncovered a vent, which was capped by a painted slab. He suggests that the main building platform and the underlying subterranean chamber functioned together as a symbolic conduit between realms. (For more on the influence of caves on site architecture see Brady 1997a:610–613). Martos López also identified evidence of speleothem breakage in the Caverna del Kisim and considers the cave to be a likely source for stucco plastered stalactites found at the site.

In their landmark book on the archaeology of coastal Quintana Roo, Andrews and Andrews (1975) describe four caves named after the architectural groups of Xcaret in which they were found. All four caves, which are located some distance from the coast, contain pools of fresh water as well as associated shrines—some with stucco plastered idols. The structure in Group R Cave is a beautifully preserved miniature temple, which was built on a platform adjacent to the water's edge (Andrews and Andrews 1975:45–46, figs. 66, 67). Similar shrines were found in the caves of Groups Y and S. The miniature temple in Group S cave is bounded by water on three sides (Andrews and Andrews 1975:46, figs. 68, 69), while the tiny shrine structure in Group Y cave faces a boulder, on which was carved a figure with an enlarged phallus (Andrews and Andrews 1975:49–50, 70, fig. 78). The shrine in Group Q Cave consists of a plastered platform with an inset step, on top of which rests a small throne (Andrews and Andrews 1975:44–45, figs. 63, 64). Though these structures differ stylistically from the architectural features found in caves of the Yalahau region, they nevertheless both represent the reverential appropriation of watery underground spaces. The association of cultural features with cave pools will be explored more thoroughly in the following chapters.

As a final note regarding Xcaret, the site's underwater cave system, referred to as Cueva de Xcaret, merits inclusion in this archaeological discussion. However, it is not because of what the cave contains, but rather its spatial relationship with site architecture. Exley (1980) provides a map of the underwater (and partially exposed) cave network at Xcaret, on which he superimposed the site map by Andrews and Andrews (1975:fig. 4). The result clearly indicates the passing of the cave beneath Group A—a relationship one could argue was intentional given our increased knowledge of the role of caves in site planning (again,

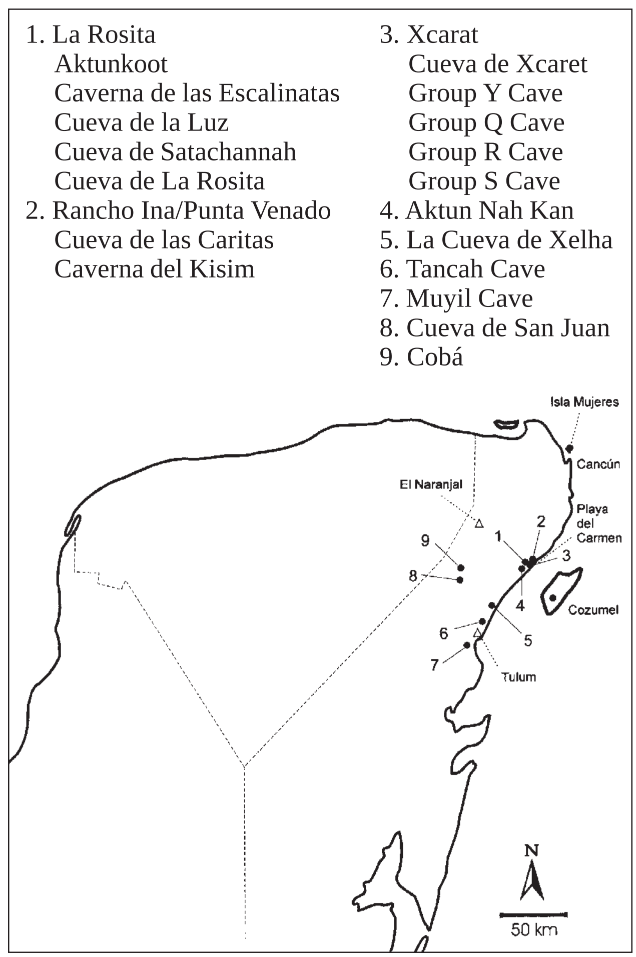


Figure 3.3. Cave sites of northern Quintana Roo.

see Brady 1997a). An additional example of the relationship between site architecture and caves is found at Muyil, south of Tulum. Here, Witschey (1993:91) mapped a cave containing evidence of ancient modification, which passes beneath Temple 8 at the site.

The island of Cozumel, with its inseparable economic and religious ties to the mainland, should be included in this review as well. Though little in the way of cave archaeology has been conducted on the island, Sierra Sosa (1994:80) provides a brief but detailed description of three caves at the site of San Gervasio. Equally intriguing are references to caves shrines by Friedel and Sabloff (1984:71, 173, 176). Several of the cave/cenotes on Cozumel are closely associated with surface architecture, including one described in an obscure reference by Mason (1927:278). The same structure and its associated cenote are also reported by Sanders (1955:191–192). Andrews and Andrews (1975:60) briefly mention a cave shrine at San Francisco. Andrews and Corletta (1995:105) describe a cenote on Cozumel, from which several artifacts were recovered (see also Luna Erreguerena 1989:150). For a map showing the locations of cenotes on Cozumel, see Sabloff and Rathje (1975:fig. 6). Additional brief references to at least three cenotes on the island are found in Muller (1959:29, 49). Incidentally, Muller (1959:28, 67) lists two cave/cenote sites on Isla Mujeres as well. Despite its role as an extraordinarily important pilgrimage center, the island of Cozumel has received little attention in the way of cave research. This is made all the more surprising by the fact the caves were no doubt key loci of ritual activity along this sacred circuit.

Inland and just south of Xcaret, is Aktun Na Kan. This cave, which was reported by Leira Guillermo and Terrones González (1986), contains a miniature temple constructed in the Postclassic East Coast style. Though this cave does not contain a pool, it is quite similar to those described by Andrews and Andrews above. The structure, which uses the ceiling of the cave as its roof, is beautifully preserved. A serpent molding adorns the façade and areas of blue painted stucco are visible on the walls. Facing the shrine, is a reptile-like stucco sculpture.

The grotto at Xelha lagoon is also described by Andrews and Andrews (1975:93; see also Andrews and Corletta 1995:106). A team of divers first explored the cave in 1960 (Bush Romero 1961; 1964). The interior of the grotto is reached via the inlet or through a shaft in the ceiling. Inside, the divers found a plastered altar or platform, which rests on a rocky outcrop surrounded by sea water. A number of artifacts were recovered from the grotto, including two jade celts (Bush Romero 1961; 1964). Navarrete (1974) later revisited the cave and conducted an analysis of the ceramics.

The cenote at Tancah, just north of Tulum, is perhaps the best known cave and rock art site in Quintana Roo. First reported by Lothrop in 1924, the cave is noted for the glyph-like elements inscribed into the risers of a carved stairway. This stairway descends a natural ledge and faces the water within this cave-like cenote. Lothrop provides two photographs of the images (1924:fig. 131, A and B), which are not very clear. He also describes a “crude stone idol,” resting atop a leveled and partly built-up ledge, as well as a small plastered pyramidal altar (1924:132). Drawings of the rock art were first produced by Robina (1956), who later visited the cave.

Miller (1982:87–89) offers his interpretation of the images at Tancah Cave, and their setting. Though I would argue that the intelligibility of the inscriptions is highly speculative, Miller describes the co-occurance of the celestial and calendrical Lamat glyph and 1 Ahau. He suggests that they signify Venus rising out of the darkness, which is symbolically represented by the dark water of the cenote. He goes on to propose that this particular cave was selected because of its east-west orientation, among other natural characteristics. Houston (1998:360) suggests that carved steps, such as those found in Tancah Cave, played a role in the ritualized channeling of water. Miller also describes a censer fragment recovered from the cave (1982:73, fig. 111) and a whole water jar found during underwater excavations (1982:78, fig. 114).

A number of other coastal region sources, not necessarily specific to Maya cave archaeology, bear mentioning here. In Reddell’s book on the cave biota of the Yucatán Peninsula (1977), he describes five additional caves located along the coast—including the tiny cenote at Tulum. Though archaeological evidence may very well exist in these caves, it was not reported. The same cenote and its associated building at the site of Tulum was first reported by Lothrop (1924:109–111) and later described by Santillán et al. (1992). The presence of caves in the pueblo of Tulum is included in Bonor Villarejo’s book (1989a) as a personal communication from Ricardo Velázquez Valadez. During a settlement survey south of the civic-ceremonial precinct of Tulum, Velázquez Valadez (1985) plotted three caves on the site map and briefly mentions their presence in Group A (p28). In a settlement survey at Playa del Carmen, by Silva Rhoads and Hernández (1991), the frequency of caves in the area is alluded to in the report (p. 33). Their survey maps (1991:87–269) reveal the locations of literally dozens of caves and cenotes, though the archaeology of these features is not discussed. Such oversights are disappointing since even the briefest investigation of a small cave takes only a little more time than mapping a platform or a series of *albarradas* (and is equally as important).

The exploration of underwater caves in Quintana Roo—by professional, avocational, and research-oriented cave divers—has exposed a new dimension to Maya cave scholars. Much to their credit, recreational cave divers have adopted a do-not-disturb policy regarding the archaeological deposits they so often encounter. Additionally, they have been judicious about sharing news of their discoveries so as not to lure unscrupulous and inexperienced divers to the caves. Nevertheless, references to artifacts that were found in underwater caves along the coast are numerous, and range from popular magazines (e.g. Agar 1998) to recreational diving and tourism literature (e.g. Madariaga 1999). Even the companion volume to the recent IMAX film (Taylor 2001) contains references to artifact bearing caves in northern Quintana Roo, which have not yet been reported by archaeologists.

Cenote diving in Quintana Roo has the potential to reveal purportedly Archaic material that was deposited when cave passages were above current sea level (Coke et al. 1991; see Andrews and Corletta 1995, for synopsis of the Carwash Cenote discovery), as well as recover objects tossed into cenotes by the ancient Maya. Gerrard (2000) has created an impressive and authoritative diver's guide that will ultimately be of use to both underwater cave archaeology and settlement studies. Formal archaeological investigations are currently in their formative stages and will no doubt make a substantive contribution to cave research in the region.

Prior to the present survey, few cave sites have been reported in the northern inland portion of the state. Reddell (1977:251) lists two small caves at the major regional center of Cobá: Aka Chen and Actun Ha (the latter of which is located within the site core). Bonor Villarejo (1989a:128) mentions a cave at Cobá (named after the site), that was originally reported by Navarrete et al. (1979:44) and likely corresponds to the Actun Ha locale visited by Reddell. Navarrete et al. (1979) describe a carved, yet highly eroded boulder or stela in this small, water-bearing cave. No specific caves are mentioned by Folan et al. (1983) in their book on Cobá; however, the elaborate *sascaberas* at the site, which were mapped and photographed (pp. 24–30), may have functioned as symbolic caves.

The absence of more developed caves and cavern systems at Cobá can be attributed to the site's proximity to the water table. It is conceivable that residents of ancient Cobá made pilgrimages to larger caves—possibly to the slightly more elevated northeast. The broad territorial extent of Cobá places the southern-most portion of the Yalahau region relatively close to the site's periphery. For this reason, possible contact between Cobá and the caves of this survey will be considered later in the dissertation.

In the community of San Juan, south of Cobá, is a large cavernous cenote that was mentioned in an article in the popular magazine *México Desconocido* (Jufresa1997). Apparently, local residents use the cenote in the Ch'achaak ceremony and one could assume that evidence of use by ancient residents of Cobá is present in the cave as well. An article about a well at Punta Laguna, just northeast of Cobá, appeared in the same magazine (Lagarde 1996). Inside, diver's encountered artifacts and human remains. There is also a fairly large grotto at the site of Punta Laguna, reached by an ancient stairway, but to my knowledge, it has not been reported in the literature. Incidentally, the recently confirmed political boundary places the community of Punta Laguna in the state of Yucatán (see figure 3.2). However, the location of the well (mentioned above) relative to the community, is not mentioned in the article.

It is important to note that documentation of additional cave sites in northern Quintana Roo, particularly along the coast, is currently in preparation by a number of Mexican archaeologists. Nevertheless, this review of the cave literature (and a quick glance at the map in figure 3.2) makes it clear that the northern inland portion of the state has long remained unstudied.

Closing Remarks

This review of Yucatecan cave archaeology, with respect to established notions of function and frequency, provides the interpretive framework of the dissertation. Though it is certain that the deep and remote cave pools of the Puuc possessed sacred qualities, they were nevertheless depended upon as regular sources of water when other means were unavailable. The open and accessible cenotes in other parts of Yucatán were often the only source of water for surrounding settlements. In the water-rich Yalahau region, as will be demonstrated, the cave pools were neither used as "last resorts" nor as primary sources of much needed water. Rather, the reverential appropriation of caves in the Yalahau led to their controlled and limited access, and ritual use. The frequency of caves with respect to settlement in the Yalahau suggests that the high number of caves at sites such as Mayapan is likely a common and widely distributed phenomenon that has simply eluded detection by archaeologists.

Though notable cave sites in northern Quintana Roo do exist, they have so far not had an impact on Maya cave studies comparable to that of Yucatán. When the scattered studies of and random references to cave sites in the region are evaluated together, patterns begin to emerge. This inclusive review may be valuable to the reader in that it serves as an authoritative (albeit abbreviated) compendium of reported cave sites for northern Quintana Roo. However, it is important to the present study in that it demonstrates the need for regional, problem-oriented studies in order to document and interpret these patterns.

CHAPTER 4

CAVES OF THE YALAHAU ARCHAEOLOGICAL CAVE SURVEY

Introduction

This chapter of the dissertation is divided into twenty sections—one for each cave in the survey. As mentioned in Chapter 1, not all caves received the same degree of archaeological attention during the course of the study. Consequently, certain sections are quite detailed while others offer only cursory descriptions. Those ten caves included in the sub-sample (see Chapter 1) were given the most attention both in the field and in this chapter. The cursory nature of a few of the cave descriptions is not necessarily reflective of their relative archaeological importance within the region. Nevertheless, the obvious importance of caves such as Actun Toh, Actun Tacbi Ha, and Pak Ch'en was a factor in my decision to devote more time and effort to their investigation.

Although the order in which the caves appear in this chapter is essentially arbitrary, those caves with pools are presented first, followed by dry caves and rockshelters. The more detailed sections are divided into sub-sections. Depending on the cave, the presentation of the data might include a general description of the cave, lot and/or operation descriptions, as well as descriptions of rock art and other features. Tabulations of the ceramics recovered from certain caves appear in this chapter; however, their illustrations and typological descriptions are found in Chapter 5. A more interpretive treatment of the archaeology described in Chapter 4 is offered in the final synthesis and discussion of the dissertation.

4.1: ACTUN TOH

Actun Toh ("cave of the mot mot bird") is located 1 km north of the community of San Juan de Dios. As the largest and most elaborately modified cave in the survey, it has received a great deal of attention during the course of this study. A detailed cave map was made and extensive surface collecting was carried out, resulting in an abundant and diverse ceramic assemblage. In addition, test excavations were conducted, which provide both functional and chronological information on the cave and its features.

Description

The vertical entrance shaft of Actun Toh is typical of many of the region's caves. Once past the 3 m of cap rock, the shaft opens into a voluminous chamber,

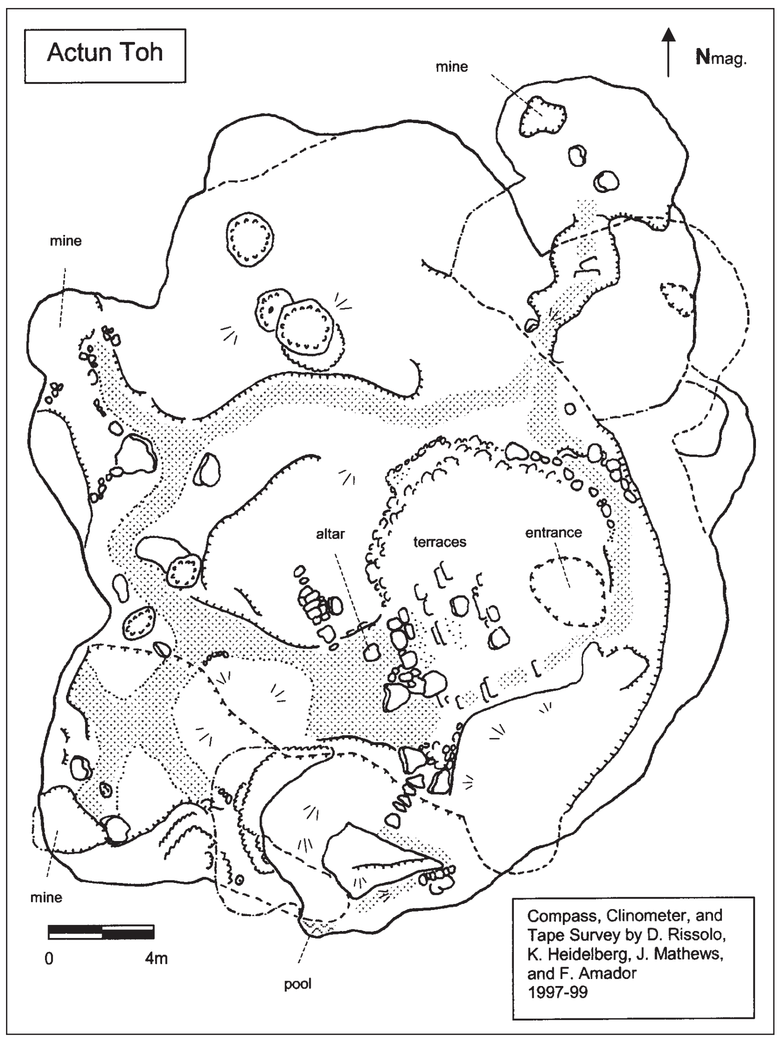


Figure 4.1.1. Actun Toh plan map.

which measures 31 m at its widest point and up to 10 m from floor to ceiling (see figures 4.1.1 and 4.1.4). Located 9.7 m below the entrance is a large mound. The bulk of this mound was no doubt created by the formation of the cave entrance above; however, it has been intensively modified. At the base of the mound's western slope is an artificial floor. By looking back at the mound from this vantage point, the details of the terraced slope are revealed (see figures 4.1.5 and 4.1.6).

It is clear that by terracing the mound, the ancient Maya intended to transform this natural feature into a pyramidal structure, the significance of which is explored in the final chapter of the dissertation. From the floor, the terraced portion of the structure measures 3.6 m in height. Although it is in an advanced state of disrepair, the nature of its masonry style as well as the structure's overall morphology are discernible. The basal terrace riser consists of two courses of well-dressed blocks, which appear to reflect the Megalithic architectural style characteristic of the Yalahau region. This portion of the structure is well preserved, except for the collapsed southern end. The following riser is essentially a low step that reaches a flat, narrow landing. Two additional centrally located steps reach a second broad landing, which is covered with debris. Here, an intact section of terrace riser is visible. It consists of at least three courses of megaliths and appears to support the summit of the pyramidal structure. The terraced slope appears to have been originally flanked by two stairways. The southern stairway is moderately well preserved, while only three steps of the northern stairway remain intact.

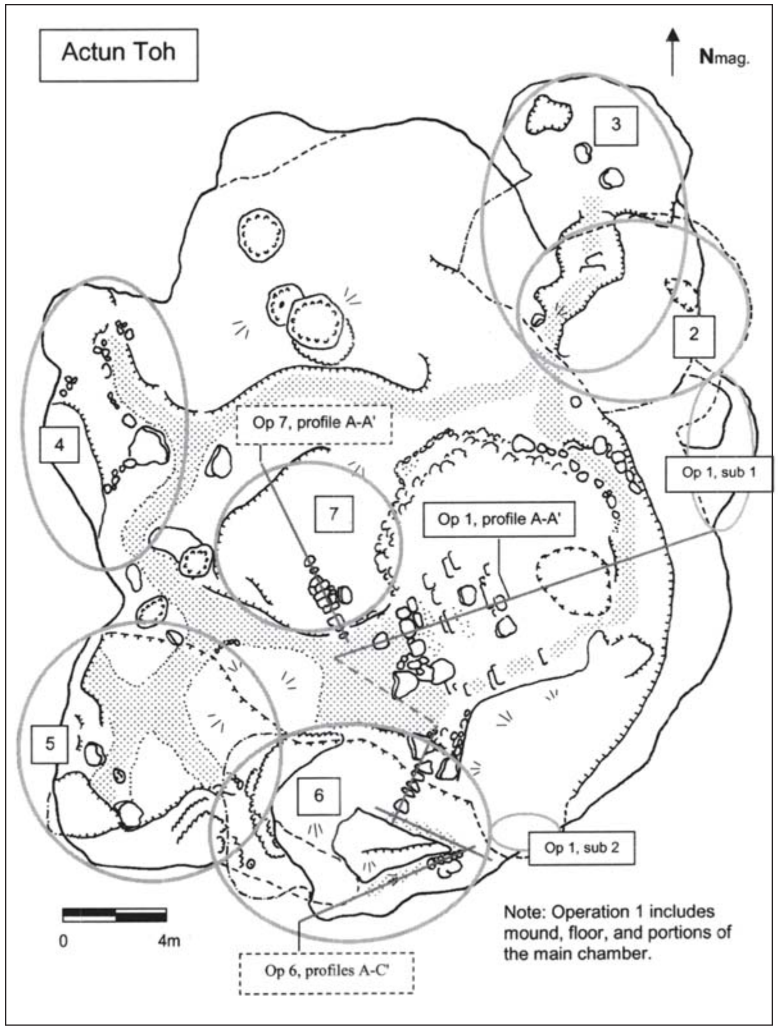


Figure 4.1.2. Actun Toh plan map with profile transects and operations indicated. For profiles of operations 6 and 7, see figure 4.1.3. Idealized cave profile in figure 4.1.4 includes operation 1, A-A'and operation 6, A-C'.

Due to the structure's location beneath the entrance, it has taken the brunt of erosive forces. If mortar was used in the construction of terraces and stairways, it has long since deteriorated. Certainly rain and the occasional falling rock or tree limb have contributed to both the structure's collapse and its current fragile state. Dressed blocks, which were originally part of the structure, can be found along the lower portions of the northern and northwestern slopes. Forest litter obscures much of the structure's summit and soils (which have washed in over time) can be traced along the eastern and southern periphery of the mound.

The floor at the base of the structure's western slope is roughly 4 m square, and in some ways resembles an elevated causeway leading away from the structure and toward other portions of the cave interior. Its smooth surface consists of a layer of tamped earth and the floor's underlying ballast is visible along its eroding northern edge (see figure 4.1.5; see also figure 4.1.17). Further details regarding the floor's construction are discussed in the following section. Resting atop the floor, just in front of the structure's basal terrace riser, is a small altar (figure 4.1.7). This feature consists of a single stone, with a smooth (possibly artificial) depression, supported by two smaller stones.

The cave has been divided into seven operations (figure 4.1.2), the boundaries of which where established along what appear to be culturally defined spatial units. These include natural rooms and portions of the

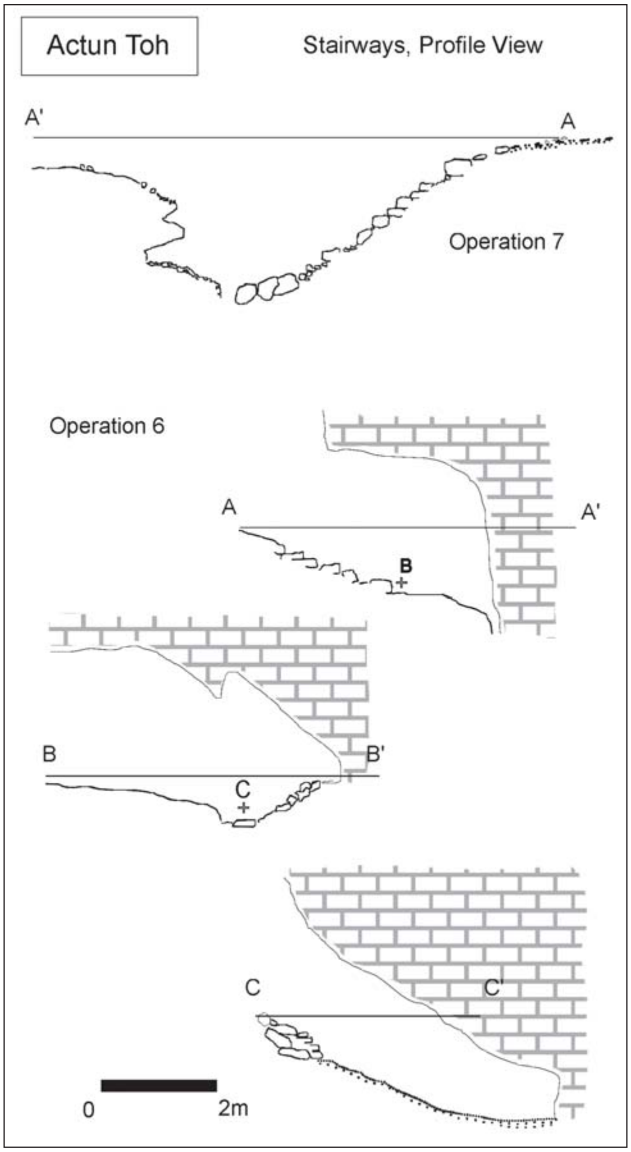


Figure 4.1.3. Actun Toh profiles for operations 6 and 7.

main chamber that have been enclosed or otherwise delineated by pathways, stairways, or low stone braces. The structure, floor, and much of the main chamber occupies operation 1.

Along the southern edge of the floor, a stairway leads down into operation 6 (see figures 4.1.2, 4.1.3, and 4.1.8), which is an enclosed sloping room. The first set of stairs leads to a landing while passing beneath a panel of five carved faces. The panel consists of four circular frontal faces (three of which are visible in figure 4.1.9) and an additional skull-like image (figure 4.1.10). A second set of stairs arrives at a small level patch of soft soil that marks the lowest point within the cave. Also at the bottom of the stairway is a niche in the cave wall, which has been modified by the stacking of stones so as to create a level offertory shelf. Having identified the co-occurrence of mounds, stairways, and rock art in other cave in the region, I anticipated a pool to be the final destination of this path through the cave (as is typically the case).

Several lines of evidence led to the conclusion that a pool at one time occupied this now dry portion of the cave. Immediately noticeable was a layer of evaporates over the top of the soil, which indicate periodic water accumulation. By observing this portion of the cave during heavy rains, it was clear that water follows a course from the entrance to the bottom of operation 6—carrying with it soil and debris. It was obvious that a small pool could become filled with such debris if left unattended. Along the southern wall of operation 6 (adjacent to the pool) was a sizable mound or pile of soil and stones that appeared to have been the result of ancient pool maintenance activities. Imbedded in this matrix are numerous sherds, which attest to feature's cultural origin. The depth of the water table, which was measured via wells in the vicinity of Actun Toh, was consistent with the depth of the lowest portion of the cave (20.69 m). An excavation into the flat, soil-covered portion of operation 6 (excavation unit A) confirmed the cave's one-time connection to the water table (at –21.21 m). The excavation unit did not reach the bottom or floor of the pool itself. Nevertheless, the dimensions of the small chamber in which it was located suggest that the pool was no greater that 1.5 m at its widest point and likely sumped beneath the southwestern wall of the chamber.

Operation 5 is reached by a path leading away from the floor at the base of the pyramidal structure (see figure 4.1.8). To the south of the chamber's entrance

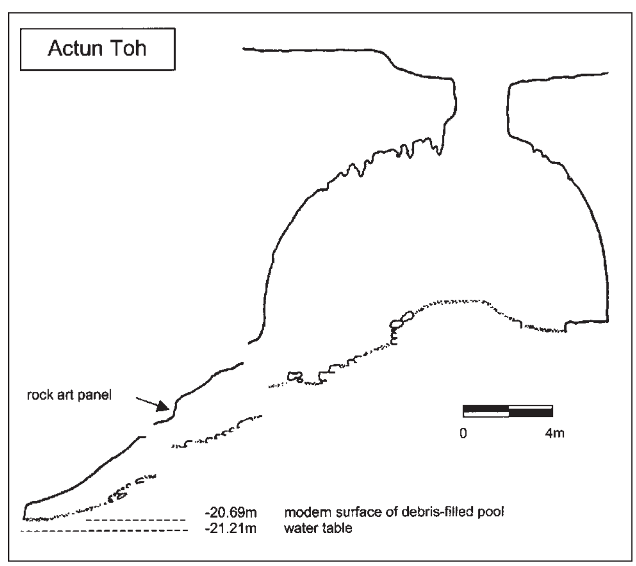
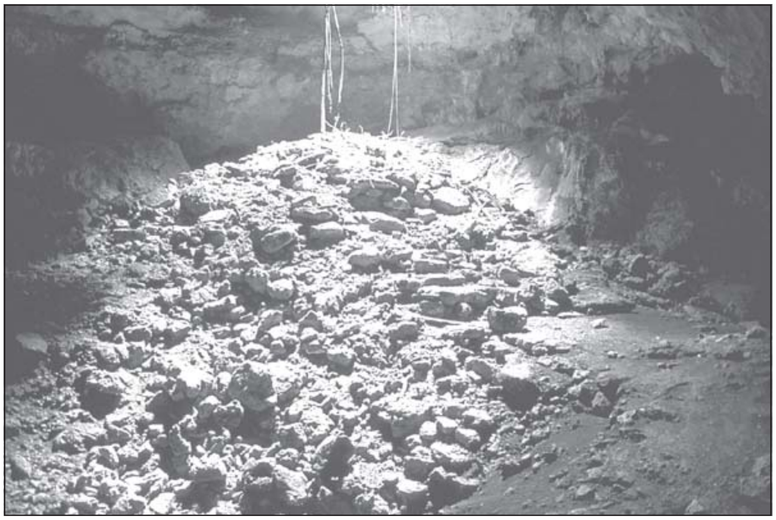
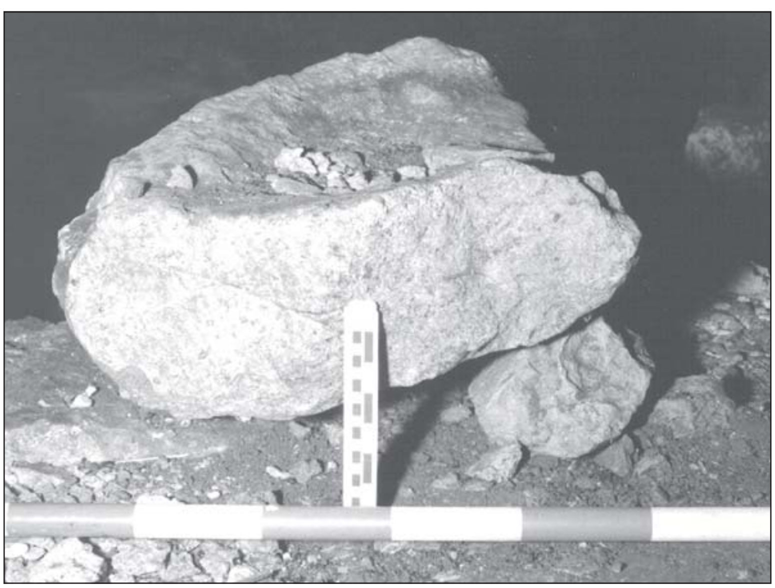


Figure 4.1.4. Idealized profile of Actun Toh.





is a low, artificial debris mound. Its origin and purpose are unclear, although it might represent the accumulation of mine tailings from operation 5 or debris from the possible ancient clearing or excavation of the area designated as operation 7. It is interesting to note that sherds from the base of this mound can be seen eroding into a low crawl space in operation 6 that passes beneath it. Once inside the chamber of operation 5, the path diverges in three directions.

The short path to the northeast arrives at a series of natural shelves along the cave wall, atop of which were placed small votive offerings. A total of four discrete clusters of sherds and artifacts were plotted and recovered (see lot descriptions in the following section). One such cluster included sherds that ranged from Late Preclassic to Late Classic in age. Also among these clusters were lithic fragments and a calcite crystal. These offerings are likely the result of either sherds that were deposited in the same location during successive trips to the cave or random sherds that were gathered from the cave floor and subsequently deposited as small offertory clusters. A human temporal bone was recovered along the northwestern boundary of the short path. It represents the only human bone observed during the course of the survey; however, few inferences can be made due to its apparent lack of association with other remains.

The southeastern path leads into a small room, which is flanked by flowstone formations and a small column. A number of sherds were collected from this low room; however, no apparent offerings were observed. At the terminus of the chamber's main path, is a mine pit. This mine, one of three in Actun Toh, is 2.5 m wide and

Top: Figure 4.1.5. Terraced structure in Actun Toh. Note floor and eroding sub-floor construction fill (lower left-hand corner.) Also note stairway leading down into operation 7 (foreground).

Middle: Figure 4.1.6. Terraced structure in Actun Toh, frontal view. Note altar.

Bottom: Figure 4.1.7. Altar in Actun Toh.

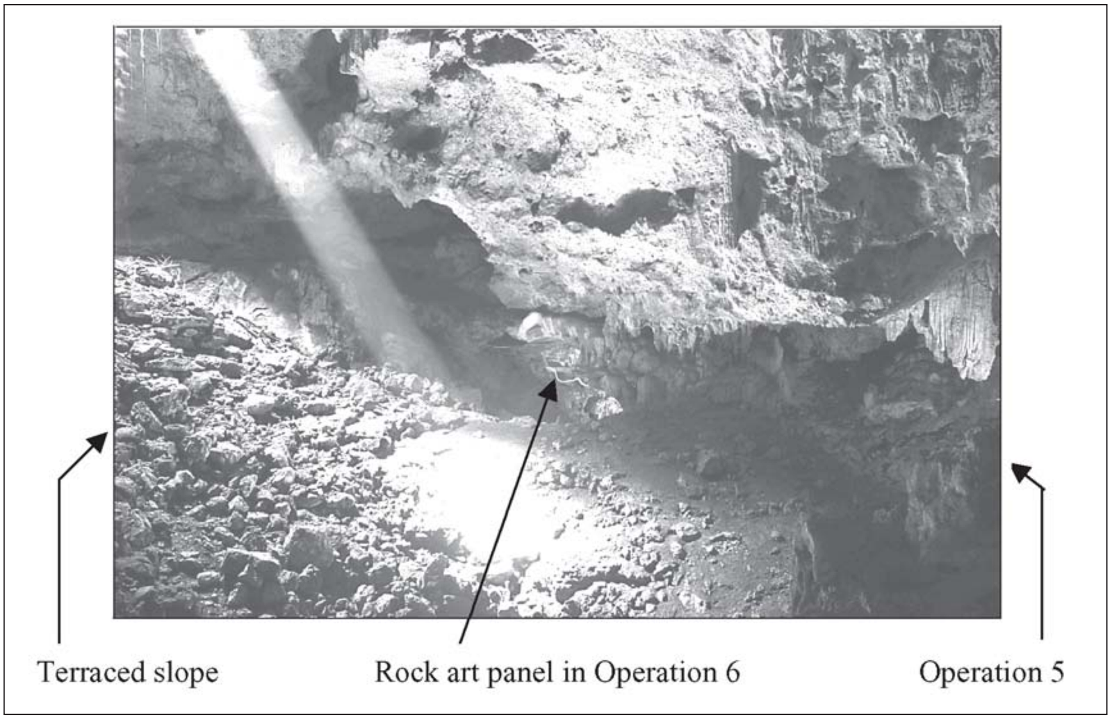


Figure 4.1.8. Actun Toh. View (facing SE) of floor and pathways to operations 5 and 6.

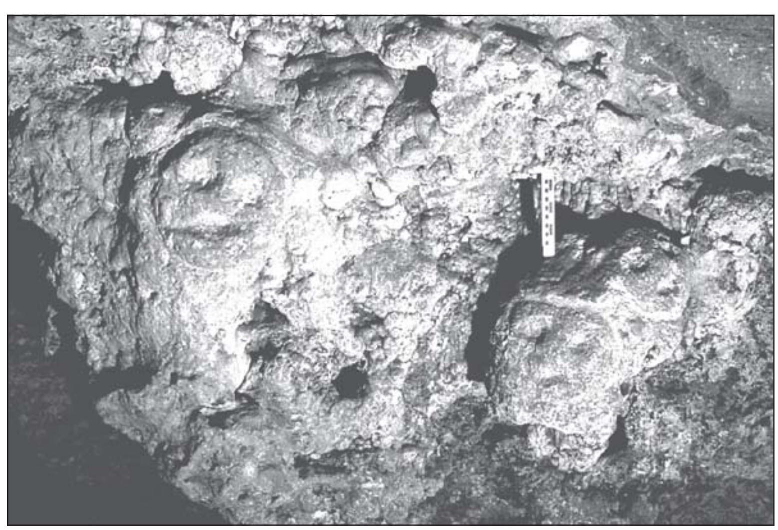
roughly 1 m deep. Along the southern wall of operation 5 (adjacent to the mine pit) is a large debris pile that consists of limestone tailings. The material extracted from these mines is described in the discussion of operation 3.

Returning to the main chamber of the Actun Toh, the circuit continues to the north. The pathway passes between two prominent stalagmites. At the base of the western stalagmite (and barely within the chamber of operation 5) was a scattering of sherds that included a small jadeite bead. The path winds its way into a portion of the cave designated as operation 4. The destination of the path is a large mine pit. Areas to the sides of the pit are covered with limestone tailings as in operation 5. Along the cave wall, west of the path, is sloping bedrock shelf. An additional votive offering was found atop this shelf or ramp. The cluster consisted of sherds, small stones, and a conch shell fragment. The interior of the shell was inspected for paint residue but none was present.

At the entrance to operation 4, the path forks and crosses the main chamber of the cave. As it approaches the pyramidal structure, the path passes to the north of a small porch-like platform connected to the northern slope of the mound. The path eventually meets another path that descends from the back of the pyramidal structure. Here, it leads down into operation 3, which is characterized by two adjoining chambers. This route passes between bedrock ledges and down two steps before reaching the most prominent mine within the cave.

The mine chamber measures 7 m at its widest point and 2.2 m high. Visible along the walls are interbedded strata of friable *sascab*-like material and more resistant limestone layers (figure 4.1.11). Samples of this powdery material were analyzed by Kathy L. Rose

Figure 4.1.9. Group of simple carved faces in Actun Toh.

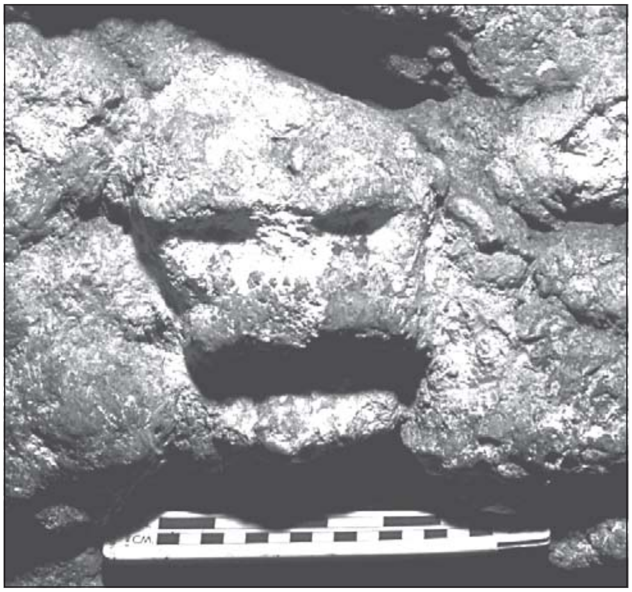


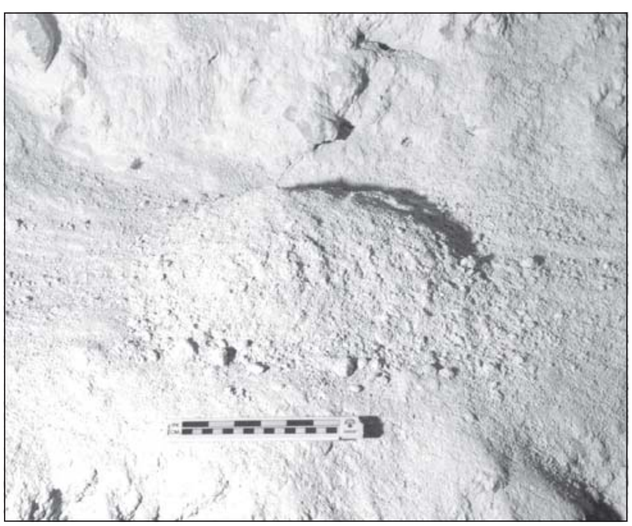
of the Department of Environmental Sciences at the University of California, Riverside. The results of X-ray diffraction analysis indicate that the material consists of dolomite with trace amounts of calcite. The soft dolomite appears to have been easily excavated from the walls of the chamber while the resulting limestone shelves (or protrusions) were broken-off and stacked in the antechamber. No tools were found associated with the mine; however, the soft dolomite could have been easily excavated with perishable (albeit hard) wooden implements.

It is important to note that the mine room is sheltered from erosive forces as well as drip water and is coated with an unsullied deposit of dry dolomite powder. In the northwestern portion of the room, is a 50 cm-deep pit that was excavated into the floor. On the edge of this pit is a small pile of dolomite powder with the tracing of the fingers that produced it still intact (figure 4.1.12). I should mention that it is difficult to determine the antiquity of mining activities in Actun Toh. Interestingly, the scars of a modern steel pick are clearly visible in the cave wall. An assessment of possible contemporary mining activities in Actun Toh, as well as an interpretation of the material's function, is presented in the final chapter of the dissertation.

Located above the mine room is a chamber designated as operation 2. These two portions of the cave are connected by a vertical shaft; however the chamber is accessed from the main chamber of the cave via a series of steps carved into the bedrock. The broad flat floor of the chamber is characterized by bedrock and is mostly free of debris. Only a few sherds were found scattered across the floor. A chert core was recovered from a ledge inside the shaft leading down to the mine. A path from operations 2 and 3 leads up to the eastern side of the pyramidal structure and completes the circuit around the cave.

The final delineated area within Actun Toh is operation 7, which is essentially a pit that forms the northern boundary of the floor. The reason why this pit merited a well-constructed stairway is unclear (see figures 4.1.2 and 4.1.3). The bottom of the pit is choked with rubble and dressed blocks that have tumbled down the northwestern slope of the pyramidal structure. Opposite the stairway is a jagged bedrock ledge that may be the result of mining or quarrying activities. Although dolomite strata are not visible here,





Top: Figure 4.1.10. Frontal skull-like image from Actun Toh.

Middle: Figure 4.1.11. Actun Toh, operation 3, stratum of soft dolomitic material. Hole in stratum is a small rodent burrow.

Bottom: Figure 4.1.12. Actun Toh, operation 3, pile of dolomitic material. Note finger tracings.

it is possible that building materials used in the cave were extracted from this area. As Kurt Heidelberg has noted, it is also conceivable that the ancient Maya intentionally created a bilaterally symmetrical arrangement by extending a stairway into the pit as well as the pool chamber.

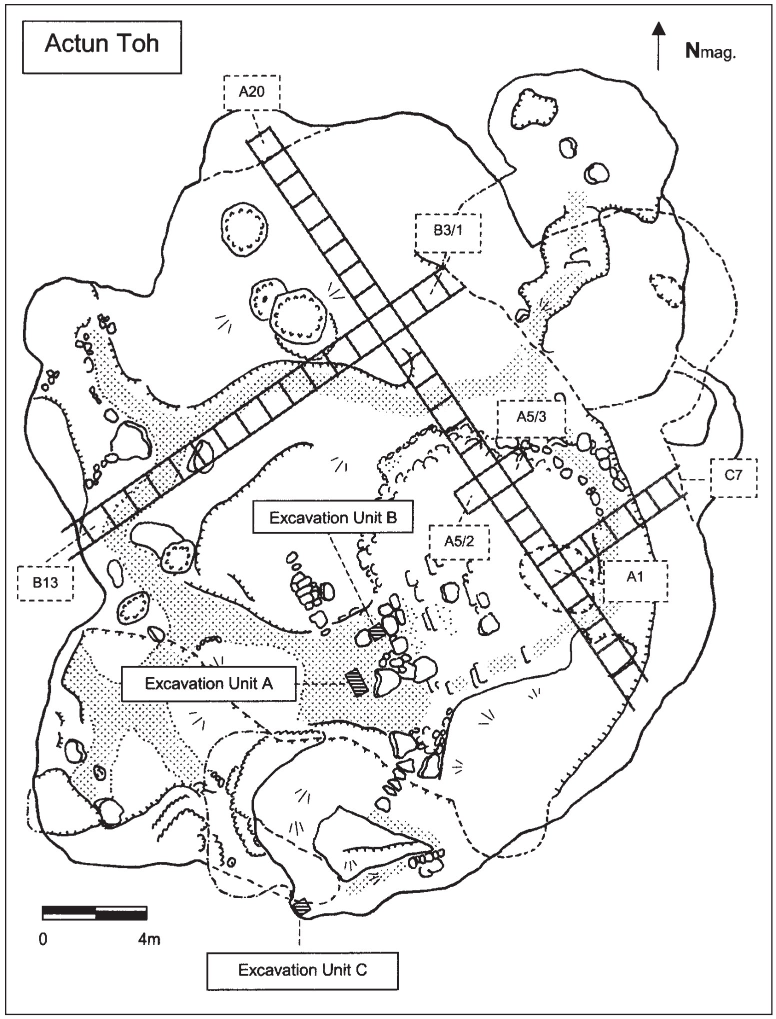


Figure 4.1.13. Actun Toh map of excavation units and surface collection transects.

Lot Descriptions

Opening Comments

The pottery and artifact recovery strategy involved three excavation units and three surface collection transects (figure 4.1.13) as well as a number of dispersed surface lots (which were organized by operation). Excavation units A and B were intended to recover chronologically sensitive deposits and reveal information on the construction of the floor. Excavation unit 3 was intended to locate the water table but also produced a number of sherds. The opportunistic recovery of sherds from the eroding sidewall of the floor is included in the discussion of the excavation units. The series of transects (which were divided into 1 m-square surface collection units) provide judgmentally-placed cross sections of the distribution of pottery on the surface of the mound and portions of the main chamber. Surface ceramics within the operations were assigned lots based on observable culturally and/or naturally defined spatial units. All sherd clusters were point-plotted and assigned separate lot numbers. The ceramic collection for Actun Toh is incredibly diverse and includes 68 separate types and varieties (table 4.1.1). Thirty-four ceramic groups are represented (ranging in age from Middle Preclassic to Late Postclassic) and their respective sherd frequencies are displayed in figure 4.1.14.

Excavation Units

Unit A (1 m by .5 m) was placed in the floor in order to determine both the age and construction style of what appears to be the fundamental architectural feature within the cave. Its exact location towards the middle of the floor (see figure 4.1.13) was selected so as to minimize further destabilization of the floor's fragile edges. The unit was excavated in arbitrary (10 cm) intervals. The first 10 cm consisted of soft, well-sorted soils. A possible *sascab* floor was encountered at 15 cm (see figure 4.1.15) and the underlying ceramics were collected separately. The sub-floor construction fill between 15 cm and 50 cm was characterized by large, relatively densely packed limestone clasts. The section of fill between 50 cm and 70 cm consisted mostly of soil matrix and small clasts. The pottery-bearing construction fill appeared to continue below 70 cm; however, excavation efforts were hampered by the width of the unit. Judging by the level of bedrock on either side of the floor, I suspect that the sub-floor fill may continue for an additional 50 cm.

In addition to pottery, three charcoal samples were collected from unit A and later analyzed at the Center for Accelerator Mass Spectrometry at the Lawrence Livermore National Laboratory, University of California (table 4.1.2). The calibrated age for the sample collected at 20–30 cm is AD 605–769. This range falls within the middle part of the Classic period and may

GROUP	TYPE: VARIETY	FREQUENCY	%
Achiote	Achiote Unslipped: Sabán	4	0.14
Chunhinta	Chunhinta Black: Ucú	2	0.07
	Nacolal Incised: Nocolal	2	0.07
	Dzocobel Red-on-black: Dzocobel	1	0.04
Joventud	Joventud Red: Nolo	1	0.04
Dzudzuquil	Dzudzuquil Cream-to-buff: Dzudzuquil	41	1.44
	Kuche Incised: Kuche	4	0.14
	Maján Red-and-cream-to-buff: Maján	12	0.42
	Tumben Incised: Tumben	6	0.21
	Petjal Red-on-black-and-cream-to-buff: Unspecified	1	0.04
	Dzudzuquil Group Unspecified	1	0.04
Kin	Kin Orange-red: Kin	36	1.26
	Kin Orange-red: Striated	2	0.07
Pital	Pital Cream: Blotchy	1	0.04
Tancah	Tancah Burdo: Tancah	12	0.42
	Chancenote Striated: Chiquilá	85	2.98
Sierra	Sierra Red: Clear Slip	141	4.95
	Sierra Red: Unspecified	558	19.59
	Laguna Verde Incised: Clear Slip	368	12.92
	Alta Mira Fluted: Horizontally-fluted	2	0.07
	Alta Mira Fluted: Clear Slip	1	0.04
	Lagartos Punctated: Lagartos	4	0.14
	Habana Club Punctated: Habana Club	9	0.32
	Celerain Notched: Unspecified	1	0.04
	Sierra Red: Black-and-red	29	1.02
	Sierra Red: Unslipped-exterior	41	1.44
	Sierra Red: Striated-interior (Sierra)	21	0.74
	Sierra Red: Orange-slip	3	0.11
	Sierra Group Undesignated	1	0.04
Tamanche	Tamanche Variegated-buff: Tamanche	3	0.11
Tipikal	Tipikal Preslip-striated: Tipikal	2	0.07
Nolo	Nolo Red: Nolo	15	0.53
	Nolo Group Special	1	0.04
Caribal	Caribal Red: Unspecified	1	0.04
Xanabá	Xanabá Red: Unspecified	55	1.93
	Caucel Trickle-on-red: Caucel	31	1.09
Polvero	Polvero Black: Polvero	1	0.04
	Lechugal Incised: Lechugal	1	0.04
Ucú	Ucú Black: Unspecified	11	0.39
Aguacate	Aguacate Orange: Unspecified	3	0.11
Maxcanú	Tacopate Trickle-on-brown: Tacopate	2	0.07
Unspecified	Tolok Black-on-orange: Tolok	3	0.11
Unspecified	Kantenah Black-on-orange Special	1	0.04
Unspecified	Shangurro Red-on-orange: Unspecified	2	0.07
Dzilam	Dzilam Verde Incised: Dzilam	103	3.62
Huachinango	Huachinango Bichrome Incised: Huachinango	37	1.30
Carolina	Carolina Bichrome Incised: Carolina	446	15.66
Sabán	Sabán Burdo: Sabán	100	3.51
	Sabán Burdo: Becoob	238	8.36
Aguila	Aguila Orange: Unspecified	5	0.18
Balanza	Balanza Black: Unspecified	1	0.04
	Lucha Incised:Unspecified	1	0.04
Cetelac	Cetelac Fiber-tempered: Cetelac	190	6.67
	Cetelac Fiber-tempered: Xcán	147	5.16
Dos Arroyos	Caldero Buff Polychrome: Unspecified	1	0.04
	San Blas Red-on-orange: Unspecified	1	0.04
Timucuy	Tituc Orange Polychrome: Tituc	10	0.35
	Tituc Orange Polychrome: Banded	2	0.07
	Tituc Orange Polychrome: Camichín	2	0.07
Batres	Batres Red: Batres	1	0.04
Saxché	Saxché Orange Polychrome: Saxché	16	0.56
	Sibal Buff Polychrome: Unspecified	2	0.07
Chumul	Janan Orange Polychrome: Janan	1	0.04
	Janan Orange Polychrome Special	1	0.04
Vista Alegre	Vista Alegre Striated: Vista Alegre	7	0.25
	Vista Alegre Striated: Chen Río	9	0.32
Mama	Mama Red: Cancún	2	0.07
	Mama Special	3	0.11
	Total Identified	2848	100
	Unidentified	18	
	Unidentifiable (due to erosion and/or small size)	1278	
	Total Count	4144	

Table 4.1.1. Tabulation of combined lots by type and variety for Actun Toh.

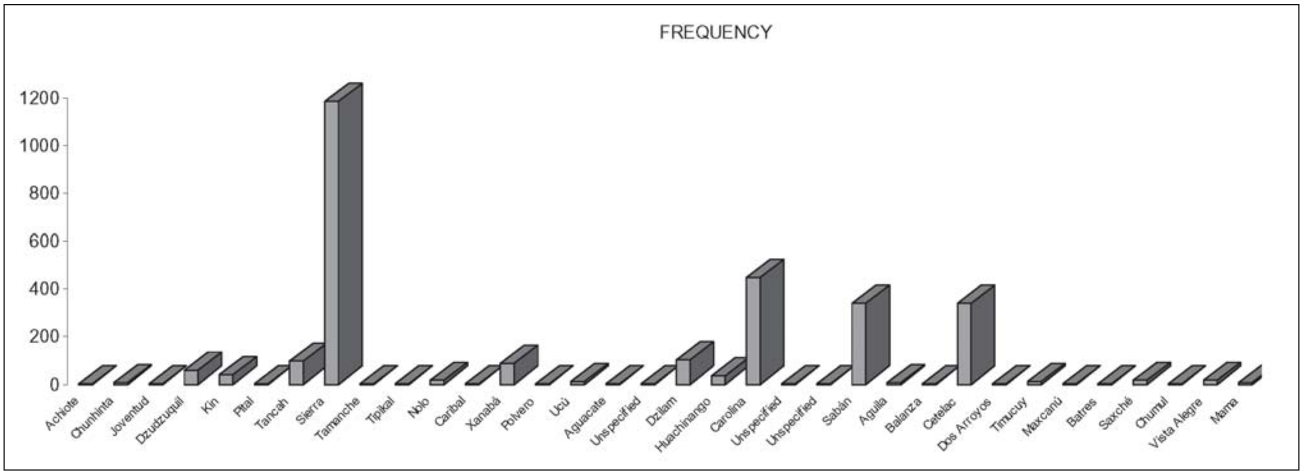


Figure 4.1.14. Display of sherd frequency by ceramic group for Actun Toh.

in fact correspond to the age of the floor. The sample from 30–40 cm produced a calibrated age of 1487–1224 BC. Although this sample was recovered from a cultural stratum, it obviously can have no bearing on the chronological assessment of the floor. Perhaps charcoal, resulting from a natural brush fire at the surface during this period, washed into the cave. Here, it could have remained for centuries before being incorporated into the sub-floor fill as the ancient Maya collected the necessary building materials from within the cave. The final sample was recovered from 40–50 cm and produced a calibrated age of 814–523 BC. Although Middle Preclassic ceramics were present in lower levels of the unit, I would consider this sample's chronological relationship to its respective level to be suspect at best. The nature of the floor's construction history can be better understood by examining the distribution of ceramic types throughout the unit (see table 4.1.3).

As represented in the "battleship curve" in figure 4.1.16, Late Preclassic and Early Classic material are present at all levels of the unit. It is immediately apparent that the construction fill beneath the *sascab* layer is essentially homogenous. Even though the majority of the Middle Preclassic material was recovered from the lowest level, this same level also contained Early Classic material. Moreover, the presence of Tituc Orange Polychrome and Cetelac Fiber-tempered sherds restrict a *terminus post quem* construction date to the middle part of the Early Classic (ca. A.D. 450–550, see Ball [1982:108]). The occurrence of Late Preclassic sherds within the upper levels of the unit can be attributed to the inclusion of sherd-bearing cave debris into a later construction episode.

Most interesting is the presence of Terminal Classic Vista Alegre Striated sherds in the three upper levels of unit A. Since the current surface of the floor consists of tamped earth rather than plaster, the first few centimeters of the excavation can not be considered a sealed context. Nevertheless, the current surface of

UCR#	CAMS#	Material	Excavation Level	$\delta^{13}C$	^{14}C Age (years BP)	Calibrated Age
3936	73018	Charcoal	20-30cm	-26.4	1360 ± 40	AD 605-769
3937	73019	Charcoal	30-40cm	-25.0	3100 ± 40	1487-1224 BC
3931	73013	Charcoal	40-50cm	-24.7	2560 ± 40	814-523 BC

Table 4.1.2. AMS Radiometric ages for Actun Toh, excavation unit A. Measurements conducted at the Center for Accelerator Mass Spectrometry, Lawrence Livermore National Laboratory, University of California. (Calibration is made for 2 sigma using Calib 4.3.)

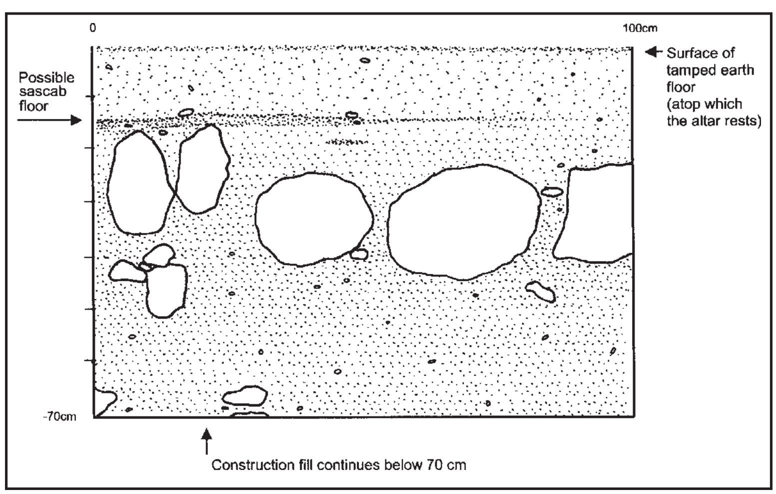


Figure 4.1.15. Actun Toh. Unit A profile, NE sidewall (D. Rissolo).

the floor is consistent with the basal riser of the pyramidal structure as well as the altar that rests upon it. In other words, the deposition of soil in this portion of the cave (since these features were constructed) has been negligible. Even if the first 10 cm are disregarded, a few Terminal Classic sherds still appear to be associated with the possible *sascab* floor. It would not be prudent to assign a Terminal Classic date to the upper floor, altar, and pyramidal structure based on 5 sherds. However, when the calibrated age from the 20–30 cm charcoal sample is factored in, it appears as if the major architectural modification of the cave might in fact be later than the pyramidal structure's architectural style suggests.

Unit B was placed between the altar and the basal riser of the pyramidal structure. Its primary purpose was to determine whether or not the structure continued below the current level of the floor. The northeastern sidewall of the .5 m by .5 m test unit revealed that no additional courses of well-dressed blocks lie beneath the basal course (which roughly occupies the same level as the current floor). However, it could not be determined whether or not the basal riser rests atop the floor or the floor simply abuts the basal riser. The distribution of ceramic types throughout the 50 cm-deep unit (table 4.1.4) bears a resemblance to unit A. The possible *sascab* floor visible at 15 cm in unit A, appears at 30 cm in unit B. Middle Preclassic material was recovered at or below this level, along with a number of Late Preclassic sherds and two Early Classic

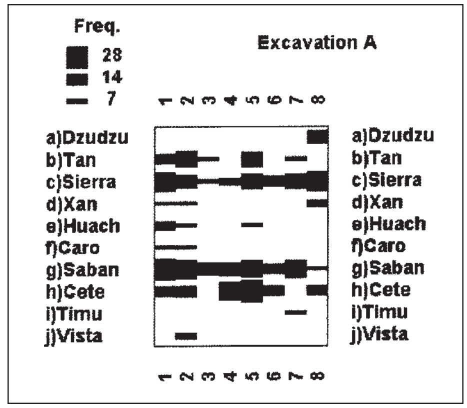


Figure 4.1.16. Actun Toh, excavation unit A. Display of sherd frequency by ceramic group for each level.

sherds. Early Classic to Late Classic sherds were recovered above the level of the possible *sascab* floor.

The floor's eroding northwestern edge provides an additional view into the sub-floor construction fill (figure 4.1.17). Fourteen sherds were extracted from this exposure and their respective levels noted (table 4.1.5). The large clasts visible in the exposure are located at roughly the same depth as in unit A. Similarly, the Middle Preclassic material was located at or below the level of the clasts. The *sascab* layer is not visible in this exposure since much of the upper section has eroded away.

Without excavation of the structure itself, its age will remain uncertain. However, the data presented above suggest that the cave's major construction episode

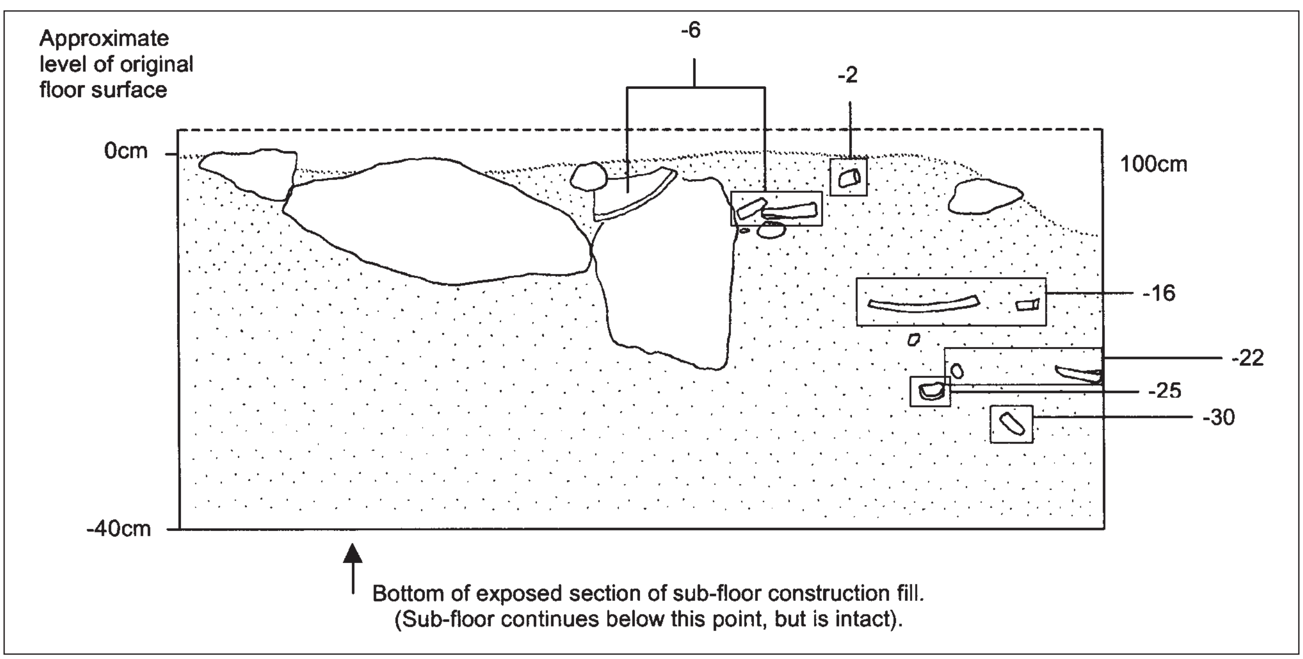


Figure 4.1.17. Actun Toh. Profile of a selected portion of eroding sub-floor construction fill (D. Rissolo). The levels of sherds extracted from the exposed fill are indicated (see table 4.1.5).

likely occurred no earlier than the middle part of the Early Classic. It should be noted that the altar could have been constructed independently of the terraced slope and may in fact post-date the Terminal Classic.

Excavation unit C was located in operation 6 and is entirely unrelated to excavations A and B. As mentioned earlier, the purpose of unit C was to identify the presence of the water table beneath the deep soils at the lowest portion of the cave. The test unit (.5 m by .5 m) was excavated to a depth of 55 cm, at which point it began to fill with water. Thin laminae of evaporates were visible in the sidewalls and are the result of water pooling and subsequently evaporating from the surfaces of successive infilling episodes. The sherds recovered from unit C (table 4.1.6) are not interesting because of their particular type or variety, but rather because of their post-depositional condition. Sherds appear to have washed down into this portion of the cave along with soil and pebbles. All sherds were suspended in a fine, soft, loamy matrix. Overall, the sherds recovered from the unit are small (rarely exceeding 2.5 cm in width) and exhibit evidence of smoothing, which is consistent with being in the path of moving water. The larger clasts and sherds of the debris pile in operation 6 are likely the result of initial pool maintenance episodes while only finer sediments appear to have accumulated since.

Surface Transects

Three surface collection transects (with 1 m-square units) were placed across the main chamber of the cave (see figure 4.1.13). Transect A was primarily intended to provide a comparison between artifact density across the mound slope and an arbitrary section of the main chamber. No surface ceramics were observed within the four units located partly or entirely beneath the entrance shaft, since this portion of the mound is obscured by a layer of forest litter. The highest density of material was located across the lower reaches of the mound slope (between A3 and A6) and consisted largely of Late Preclassic sherds from the Sierra group (table 4.1.7). A diverse scatter of sherds was observed adjacent to A5. Therefore, the transect was expanded laterally in order to recover the material, which included Middle Preclassic to Early Classic sherds. Unit A6, at the base of the mound, contained a cluster of well preserved Early Classic to Late Classic polychromes. A number of sherds were also recovered adjacent to the path. Based on transect A, the distribution of sherds between the path and the northern wall of the main chamber was sparse. The unit at the northwestern terminus of the transect A (A20) was located within a small alcove and contained a relatively high density of sherds.

Transect B was placed at ninety degrees to transect A and spanned the distance between operations 3 and 4 (while partly including the latter). The two units to the northeast of the intersection with transect A (B2 and B3/1) crossed a possible path to the alcove and contained a low density of sherds (table 4.1.8). Most of the sherds recovered from transect B were associated with the surface of the path that crosses the main chamber (for example B4). The three units that include a segment of the path into operation 3 (B10, B11, and B12) were empty. This was due to the fact that the surface of the entire path had been previously collected as two separate lots (SJ2O4-2 and SJ2O4-3) when the dispersed lots in operation 4 were assigned (see table 4.1.13).

Transect C overlaps unit A1 and extends to the mouth of a tiny alcove (sub-operation 1). The majority of the sherds were recovered from the surface of the path along the eastern periphery of the mound. Nearly all of the sherds from unit C4 (table 4.1.9) were found at the base of a bedrock shelf and along the edge of the path.

Dispersed Surface Lots

As mentioned above, the ceramic material that was not recovered by the excavation units or transects was collected by a series of dispersed surface lots (which were organized by operation). All the material, by operation, is presented in tables 4.1.10 through 4.1.16. The following discussion includes only selected lots.

The terraced slope of the mound was divided (by architectural feature) into thirteen areas (only seven of which contained surface ceramics). In other words, much of the terraced surface was free of sherds. A number of sherds appeared to be eroding from beneath the northern stairway and were collected in lot SJ2O1-1 (see table 4.1.10). Interestingly, Middle Preclassic to Late Classic types were represented. The floor extending from the base of the pyramidal structure was collected as two lots (SJ2O1-9 and SJ2O1-10). The majority of the sherds were found along the basal terrace riser and on the north side of the altar (where the sub-floor ballast is partially exposed). Most of the floor's surface was free of sherds and debris.

The highest density of surface ceramics in operation 1 was located northeast of the entrance (SJ2O1-11). This lot included the surface and borders of the path that begins along the eastern periphery of the mound, passes between two stone alignments, and meets two steps (before continuing on to operation 3). This

TYPE: VARIETY LOT	SJ2AI	SJ2AII	SJ2AIII	SJ2AIV	SJ2AV	SJ2AVI	SJ2AVII	SJ2AVIII	Total
Dzudzuquil Cream-to-buff: Dzudzuquil				1				7	8
Majan Red-on-cream-to-buff: Majan								1	1
Tancah Burdo: Tancah				1	1		1	1	4
Chancenote Striated: Chiquilá	5	12	2		9	1	1		30
Sierra Red: Clear Slip	11	2		1			6	16	36
Sierra Red: Unspecified	7	6		1	7	2	2	2	27
Laguna Verde Incised: Clear Slip	2		2	1	4	3	2	1	15
Nolo Red: Nolo	1								1
Xanabá Red: Unspecified	2	1				1	1	3	8
Caucel Black-trickle-on-red: Caucel		1							1
Ucú Black: Unspecified					1				1
Dzilam Verde Incised: Dzilam								1	1
Huachinango Bichrome Incised: Huachinango	4	2		1	2				9
Carolina Bichrome Incised: Carolina	2	2						1	5
Sabán Burdo: Sabán						1	2	2	5
Sabán Burdo: Becoob	26	21	7	8	13	4	14		93
Lucha Incised: Unspecified					1				1
Cetelac Fiber-tempered: Cetelac	5	6	1	8	12			2	34
Cetelac Fiber-tempered: Xcán				9	16	5	1	3	34
Tituc Orange Polychrome: Tituc	1	1				1	2		5
Vista Alegre Striated: Vista Alegre	1	3	1						5
Unidentified	4	2					1		7
Unidentifiable	43	48	8	49	18	12	25	20	223
Total	114	107	21	80	84	30	58	60	**554**

Table 4.1.3. Actun Toh excavation unit A.

TYPE:VARIETY LOT	SJ2BI	SJ2BII	SJ2BIII	SJ2BIV	SJ2BV	Total
Dzudzuquil Cream-to-buff: Dzudzuquil			1	3	4	8
Majan Red-on-cream-to-buff: Majan			1	1		2
Tancah Burdo: Tancah					1	1
Chancenote Striated: Chiquilá		1				1
Sierra Red: Clear Slip	3	5	9	3	3	23
Sierra Red: Unspecified		2	40	5	3	50
Laguna Verde Incised: Clear Slip	4	14	31	2	1	52
Habana Club Punctated: Habana Club			5			5
Nolo Red: Nolo				2		2
Nolo Group Special				1		1
Caribal Red: Unspecified					1	1
Xanabá Red: Unspecified	5	1			4	10
Lechugal Incised: Lechugal					1	1
Ucú Black: Unspecified	1	1	3	1		6
Aguacate Orange: Unspecified				3		3
Tolok Black-on-orange: Tolok					3	3
Carolina Bichrome Incised: Carolina	1	4				5
Sabán Burdo: Sabán	3	1	1			5
Sabán Burdo: Becoob					1	1
Cetelac Fiber-tempered: Cetelac	3					3
Cetelac Fiber-tempered: Xcán	4	2				6
Tituc Orange Polychrome: Tituc	1					1
Batres Red: Batres	1					1
Unidentified	1		6	2		9
Unidentifiable	51	16	175	13	25	280
Total	78	47	272	36	47	**480**

Table 4.1.4. Actun Toh excavation unit B.

TYPE: VARIETY LOT	SJ2O1-I(-2)	SJ2O1-I(-6)	SJ2O1-I(-16)	SJ2O1-I(-22)	SJ2O1-I(-25)	SJ2O1-I(-30)	Total
Dzudzuquil Cream-to-buff: Dzudzuquil			1	1		1	3
Sierra Red: Unspecified	1					1	2
Laguna Verde Incised: Clear Slip		1					1
Sabán Burdo: Becoob		1					1
Unidentified					1		1
Unidentifiable			4	2			6
Total	1	2	5	3	1	2	**14**

Table 4.1.5. Actun Toh, exposed sub-floor construction fill.

TYPE: VARIETY LOT	SJ2CI	SJ2CII	SJ2CIII	SJ2CIV	Total
Chancenote Striated: Chiquilá	1				1
Sierra Red: Clear Slip	1	1			2
Sierra Red: Unspecified				1	1
Laguna Verde Incised: Clear Slip	2	4	2		8
Nolo Red: Nolo	1				1
Carolina Bichrome Incised: Carolina		1			1
Cetelac Fiber-tempered: Xcán			2		2
Unidentifiable	1				1
Total	6	6	4	1	**17**

Table 4.1.6. Actun Toh excavation unit C.

TYPE: VARIETY LOT	SJ2 A3	SJ2 A4	SJ2A 5/1	SJ2A 5/2	SJ2A 5/3	SJ2 A6	SJ2 A7	SJ2 A8	SJ2 A9	SJ2 A10	SJ2 A11	SJ2 A12	SJ2 A15	SJ2 A16	SJ2 A17	SJ2 A19	SJ2 A20	Total
Achiote Unslipped: Sabán		1																1
Dzocobel Red-on-black: Dzocobel									1									1
Dzudzuquil Cream-to-buff: Dzudzuquil	1																	1
Kin Orange-red: Kin				1		2												3
Kin Orange-red: Striated						2												2
Tancah Burdo: Tancah							2										1	3
Chancenote Striated: Chiquilá		1			4	1						1			2	2		11
Sierra Red: Clear Slip	2	6																8
Sierra Red: Unspecified	12	40	15	24	5	9	1		2	2	5		2	2	1		9	129
Laguna Verde Incised: Clear Slip	18	33	3	17	1	5	1			3		1					3	85
Lagartos Punctated: Lagartos				2														2
Habana Club Punctated: Habana Club						1							1					2
Celerain Notched: Unspecified				1														1
Sierra Red: Black-and-red		8	1	2	1					1							1	14
Sierra Red: Striated-interior (Sierra)	2	7	1														1	11
Sierra Red: Punctated-and-incised (Lagartos)	1			2														3
Nolo Red: Nolo		1		1														2
Xanabá Red: Unspecified			1											1				2
Caucel Trickle-on-red: Caucel		1																1
Dzilam Verde Incised: Dzilam			3	1	1	2				1							4	12
Huachinango Bichrome Incised: Huachinango					2												1	3
Carolina Bichrome Incised: Carolina		4		4	5	2	1	4	4	8	2					1	9	44
Kantenah Special Black-on-orange												1						1
Shangurro Red-on-orange: Shangurro						2												2
Sabán Burdo: Sabán					1	7											4	12
Sabán Burdo: Becoob								3			2							5
Aguila Orange: Unspecified																	2	2
Cetelac Fiber-tempered: Cetelac		1		1		10	2	2		2	3						2	23
Cetelac Fiber-tempered: Xcán							1			1		1		1		3	1	8
Tituc Orange Polychrome: Tituc						1												1
Tituc Orange Polychrome: Banded						1												1
Tituc Orange Polychrome: Camichín						2												2
Saxché Orange Polychrome: Saxché						6												6
Vista Alegre Striated: Chen Río				1		1				1							1	4
Unidentifiable	11		1	31	6	8	10	4	5	19	7	4	2	1			5	114
Total	47	103	25	88	26	62	18	13	12	38	19	8	5	5	3	6	44	**522**

Table 4.1.7. Actun Toh transect A.

TYPE: VARIETY LOT	SJ2B2	SJ2B3/1	SJ2B3/2	SJ2B4	SJ2B5	SJ2B6	SJ2B7	SJ2B8	SJ2B9	Total
Dzudzuquil Cream-to-buff: Dzudzuquil		1		1						2
Kuche Incised: Kuche			1							1
Sierra Red: Clear Slip	1								1	2
Sierra Red: Unspecified	3	2		1	1		1	2	3	13
Laguna Verde Incised: Clear Slip	5		3	2		3			2	15
Alta Mira Fluted: Clear Slip								1		1
Habana Club Punctated: Habana Club	1									1
Sierra Red: Striated-interior (Sierra)				1						1
Xanabá Red: Unspecified		1		1	2		1			5
Caucel Trickle-on-red: Caucel				3						3
Dzilam Verde Incised: Dzilam	1			1						2
Carolina Bichrome Incised: Carolina			1	3	1		1		1	7
Sabán Burdo: Sabán	1				1					2
Aguila Orange: Unspecified				1	1					2
Cetelac Fiber-tempered: Cetelac				2						2
Cetelac Fiber-tempered: Xcán							1			1
Vista Alegre Striated: Chen Río							1			1
Unidentifiable	5		2			1	2	6	11	27
Total	17	4	7	16	6	4	7	9	18	**88**

TYPE: VARIETY LOT	SJ2C3	SJ2C4	SJ2C6	SJ2C7	Total
Chunhinta Black: Ucú			1		1
Chancenote Striated: Chiquilá	1	1			2
Sierra Red: Clear Slip	1	2			3
Sierra Red: Unspecified	2				2
Laguna Verde Incised: Clear Slip	4	9			13
Xanabá Red: Unspecified				1	1
Carolina Bichrome Incised: Carolina		4		2	6
Sabán Burdo: Sabán	1			3	4
Sabán Burdo: Becoob		8			8
Cetelac Fiber-tempered: Cetelac		1			1
Cetelac Fiber-tempered: Xcán		1			1
Unidentifiable	6	9		1	16
Total	15	35	1	7	**58**

Above: Table 4.1.8. Actun Toh transect B.

Left: Table 4.1.9. Actun Toh transect C.

Below: Table 4.1.10. Actun Toh operation 1.

TYPE: VARIETY LOT	SJ2 O1-1	SJ2 O1-2	SJ2 O1-3	SJ2 O1-4	SJ2 O1-5	SJ2 O1-6	SJ2 O1-7	SJ2 O1-8	SJ2 O1-9	SJ2 O1-10	SJ2 O1-11	SJ2 O1-12	SJ2 O1-13	SJ2 O1-14	SJ2 O1/1-1	SJ2 O1/2-1	Total
Achiote Unslipped: Saban										1							1
Nacolal Incised: Nacolal	1															1	2
Dzudzuquil cream-to-buff: Dzudzuquil			1						1		1				2		5
Maján Red-on-cream-to-buff: Maján										1					1		2
Tumben Incised: Tumben										1							1
Kin Orange-red: Kin										1	15	2			1	1	20
Tancah Burdo: Tancah							1						1	1	1		4
Chancenote Striated: Chiquilá	1		1			2			2		5	1				2	14
Sierra Red: Clear Slip	1				1	3	2		3	5	8	3		1			27
Sierra Red: Unspecified	26	6		7		4	1	2	21	11	5	11			3	5	102
Laguna Verde Incised: Clear Slip	3			1		1	1		2	1	27	17	2	1	1	3	60
Alta Mira Fluted: Horizontally -fluted												1					1
Lagartos Punctated: Lagartos												4					4
Sierra Red: Black-and-red											5	1					6
Sierra Red: Unslipped-exterior											39					2	41
Sierra Red: Striated-interior (Sierra)											2						2
Nolo Red: Nolo		1	1	1								1					4
Xanabá Red: Unspecified						2				5	3	1			3		14
Caucel Trickle-on-red: Caucel										4	9						13
Ucú Black: Unspecified																1	1
Dzilam Verde Incised: Dzilam										2	3	3			2	1	11
Huachinango Bichrome Incised: Huachinango									2								2
Carolina Bichrome Incised: Carolina	1			1				1		17	20	14	1	3	8	12	78
Sabán Burdo: Sabán				2	2			1	5			4			7	7	28
Sabán Burdo: Becoob				1	1	4	9			15	4	2			1	11	48
Balanza Black: Unspecified									1								1
Cetelac Fiber-tempered: Cetelac	1		1			2			2	11		3	1		2	4	27
Cetelac Fiber-tempered: Xcán					1					3	4	3			8	13	32
Tacopate Trickle-on-brown: Unspecified																2	2
Saxché Orange Polychrome: Saxché	1										2				2	1	6
Sibal Buff Polychrome: Unspecified											1						1
Vista Alegre Striated: Chen Río											3						3
Unidentified	1																1
Unidentifiable	8	3	1	5	1	7	4		55	64	24	20	1		6	33	232
Total	44	10	5	18	6	25	18	4	94	142	180	91	6	6	48	99	**796**

TYPE: VARIETY LOT	SJ2O2-1	SJ2O2-2	Total
Sierra Red: Unspecified	3		3
Laguna Verde Incised: Clear Slip	1		1
Sierra Red: Striated-interior (Sierra)	2		2
Huachinango Bichrome Incised: Huachinango	1	1	2
Carolina Bichrome Incised: Carolina	1	4	5
Cetelac Fiber-tempered: Cetelac		2	2
Vista Alegre Striated: Vista Alegre		1	1
Unidentifiable	1		1
Total	9	8	17

Table 4.1.11. Actun Toh operation 2.

TYPE: VARIETY LOT	SJ203-1	SJ2O3-2	Total
Chancenote Striated: Chiquilá	2		2
Sierra Red: Unspecified	37		37
Laguna Verde Incised: Clear Slip	18	2	20
Sierra Red: Black-and-red	5		5
Nolo Red: Nolo	1		1
Xanabá Red: Unspecified	7		7
Caucel Trickle-on-red: Caucel	5		5
Dzilam Verde Incised: Dzilam	18		18
Carolina Bichrome Incised: Carolina	33		33
Sabán Burdo: Sabán	14		14
Cetelac Fiber-tempered: Cetelac	8		8
Unidentifiable	38	3	41
Total	186	5	**191**

Table 4.1.12. Actun Toh operation 3.

TYPE: VARIETY LOT	SJ2O4-1	SJ2O4-2	SJ2O4-3	SJ2O4-4	SJ2O4-5	SJ2O4-6	Total
Chancenote Striated: Chiquilá		1	2				3
Sierra Red: Unspecified	6	30	5		1		42
Laguna Verde Incised: Clear Slip		9	3				12
Sierra Red: Black-and-red	1	1	1				3
Sierra Red: Striated-interior (Sierra)		1	1				2
Dzilam Verde Incised: Dzilam	2	13				1	16
Huachinango Bichrome Incised: Huachinango	1	2	1				4
Carolina Bichrome Incised: Carolina	7	44	9		1	2	63
Sabán Burdo: Becoob		18	3			1	22
Cetelac Fiber-tempered: Cetelac	2	5	2				9
Cetelac Fiber-tempered: Xcán		3					3
Saxché Orange Polychrome: Saxché				1			1
Vista Alegre Striated: Vista Alegre		1					1
Vista Alegre Striated: Chen Río		1					1
Unidentifiable		19	4				23
Total	19	148	31	1	2	4	**205**

Table 4.1.13. Actun Toh operation 4.

TYPE: VARIETY LOT	SJ2 O5-1	SJ2 O5-2	SJ2 O5-3	SJ2 O5-4	SJ2 O5-5	SJ2 O5-6	SJ2 O5-7	SJ2 O5-8	SJ2 O5-9	SJ2 O5-10	SJ2 O5-11	SJ2 O5-12	Total
Achiote Unslipped: Sabán												2	2
Dzudzuquil cream-to-buff: Dzudzuquil											1	1	2
Kuche Incised: Kuche									1				1
Maján Red-on-cream-to-buff: Maján										1	1	1	3
Tumben Incised: Tumben									3				3
Kin Orange-red: Kin		1								2	1	1	5
Chancenote Striated: Chiquilá	3		2					1		1	2	3	12
Sierra Red: Clear Slip		3	1					1			1	7	13
Sierra Red: Unspecified	13	8	1	1	2			2	2	3	15	15	62
Laguna Verde Incised: Clear Slip	1	7	2					1	5	2	6	8	32
Habana Club Punctated: Habana Club											1		1
Sierra Red: Striated-interior (Sierra)			1								1		2
Sierra Red: Orange-slip								2					2
Sierra Group Undesignated									1				1
Tipikal Preslip-striated: Tipikal			1							1			2
Xanabá Red: Unspecified	1		1						1	1	1	3	8
Caucel Trickle-on-red: Caucel		4								1	3		8
Petjal: Unspecified										1			1
Ucú Black: Unspecified											1		1
Aguacate Orange: Unspecified											1		1
Dzilam Verde Incised: Dzilam	6	5	3				1	2			4	1	22
Huachinango Bichrome Incised: Huachinango		1								1	1	5	8
Carolina Bichrome Incised: Carolina	7	10	7	3	3		1	19	3	5	11	46	115
Sabán Burdo: Sabán	2	2	3		1			2	2	1	4	7	24
Sabán Burdo: Becoob		4	1			1			2	2	4	11	25
Aguila Orange: Unspecified	1												1
Cetelac Fiber-tempered: Cetelac		10	5	3			1	2	2	10	13	4	50
Cetelac Fiber-tempered: Xcán	1	2	13				1	4	4		8	13	46
Caldero Buff Polychrome: Unspecified			1										1
Tituc Orange Polychrome: Tituc		1									1	1	3
Saxché Orange Polychrome: Saxché		1								2			3
Sibal Buff Polychrome: Unspecified											1		1
Janan Orange Polychrome: Janan	1												1
Janan Orange Polychrome special		1											1
Unidentifiable	3	10	5	8			1	4	1	1	21	70	124
Total	39	70	47	15	6	1	5	40	27	35	103	199	**587**

Table 4.1.14. Actun Toh operation 5.

TYPE: VARIETY LOT	SJ2O6-1	SJ2O6-2	SJ2O6-3	SJ2O6-4	SJ2O6-5	SJ2O6-6	SJ2O6-7	SJ2O6-8	SJ2O6-9	SJ2O6-9/1	Total
Chunhinta Black: Ucú									1		1
Joventud Red: Nolo			1								1
Dzudzuquil cream-to-buff: Dzudzuquil									1		1
Tumben Incised: Tumben									1		1
Kin Orange-red: Kin			1		1						2
Chancenote Striated: Chiquilá				1			6				7
Sierra Red: Clear Slip		1		1	16		1	2			21
Sierra Red: Unspecified		1		7	1	2	17	2	14	2	46
Laguna Verde Incised: Clear Slip	1	1		2	2		1	5	4		16
Alta Mira Fluted: Alta Mira									1		1
Tamanche Variegated-buff: Tamanche				1	2						3
Nolo Red: Nolo								1	3		4
Polvero Black: Polvero		1									1
Ucú Black: Unspecified				1							1
Dzilam Verde Incised: Dzilam				1	9		1		2		13
Huachinango Bichrome Incised: Huachinango			1				1	1	6		9
Carolina Bichrome Incised: Carolina	5	1	1	3	18	2	19	8	22	1	80
Sabán Burdo: Sabán							1	2			3
Sabán Burdo: Becoob	5	1		4	1	1	6	2	7		27
Cetelac Fiber-tempered: Cetelac			2		1		8	12	5		28
Cetelac Fiber-tempered: Xcán		1			3		3		7		14
Mama Red: Cancún		1		1							2
Mama Special			3								3
Unidentifiable	8	3	1	19	25	4	47	26	17	1	151
Total	19	11	10	41	79	9	111	61	91	4	**436**

Table 4.1.15. Actun Toh operation 6.

segment of the path was essentially covered with a pavement of sherds and small stones. A diverse assortment of 180 sherds was recovered and ranged in age from Middle Preclassic to Terminal Classic. Although sherds from the Sierra group accounted for a large portion of the lot, significant quantities of Kin Orange-red and Carolina Bichrome Incised sherds were present. Thirty-nine Sierra Red sherds with unslipped exteriors were recovered in this lot and (though no fitters were present) may represent a broken vessel of this unusual variety. On the opposite side of the eastern rock alignment was a similarly dense accumulation of sherds (SJ2O1-12).

Sub-operations 1 and 2 involve two small alcoves, which are located east and west of the entrance (respectively). Sub-operation 1 is a low, dry crawl space with a relatively dense scatter of well-preserved sherds across the floor (SJ2O1/1-1). Sub-operation 2 is an alcove that overlooks the main chamber. A significant number sherds found atop its flat bedrock surface were from Early Classic groups (SJ2O1/2-1).

As mentioned earlier, only a few sherds were scattered across the surface of operation 2 (lot SJ2O2-1; see table 4.1.11). An additional lot (SJ2O2-2) was assigned to those sherds recovered from the ledges of the shaft leading down into operation 3. The two chambers of operation 3 were collected as separate lots (table 4.1.12). The surface of the path through the antechamber was covered with Late Preclassic to Early Classic sherds (SJ2O3-1). Only five sherds were found in the mine room itself (SJ2O3-2).

The votive offering in operation 4, which contained the conch shell fragment, was point-plotted and collected (SJ2O4-1; table 4.1.13). The surface of the path leading to the mine pit was collected as two separate, judgmentally established lots that could probably be combined (SJ2O4-2 and SJ2O4-3). Together, 179 sherds were found across the surface of the path. Data from both transects and dispersed lots suggest that the distribution of sherds across the surface of the cave tend to cluster along paths.

The surfaces of the intersecting paths in operation 5 were collected as three separate lots (SJ2O5-9, SJ2O5-10, and SJ2O5-11; table 4.1.14). The 165 sherds scattered across the paths range in age from Middle Preclassic to Late Classic. The point-plotted votive offerings, which were located atop the shelves in operation 5, were collected as lots SJ2O5-1, SJ2O5-3, SJ2O5-4, and SJ2O5-5. The densest concentration of sherds observed in Actun Toh was located atop the debris mound between operation 5 and the floor in operation 1. I suspect that the sherds became aggregated into the mound as various materials (i.e. rocks, soil, etc.) were collected, transported, and piled in this location.

The condition of the sherds located along the western half of operation 6 lends support to the idea that the pool at the bottom of the room has been obscured by the periodic deposition of waterborne sediments. This sloping portion of the cave contained a number of tiny, polished sherds (SJ2O6-7 and SJ2O6-8; table 4.1.15). Many were recovered from small, dry plunge pools (within which sherds and small stones were tumbled by silty, fast-moving rainwater). Sherds collected from the surface of the debris pile (SJ2O6-5) adjacent to the pool are likely associated with ancient pool maintenance episodes. It should be noted that sherds from this mound ranged in age from Middle Preclassic to Early Classic. However, it is not certain whether or not such activities ceased at the close of the Early Classic. An interesting deposit of sherds (SJ2O6-9) was recovered from a low crawl space above and to the west of the slope in operation 6. These well preserved sherds, which range in age from Middle Preclassic to Early Classic, are likely associated with the debris mound in operation 5. The crawl space appears to have at one time emerged into operation 5, but was sealed-off (from above) by the creation of the debris mound. While in the crawl space, I extracted three sherds from the basal matrix of the overlying mound. These were collected as a separate lot (SJ2O6-9/1) and include Sierra Red and Carolina Bichrome Incised types. This suggests that the initial activities that resulted in the creation of the debris mound occurred no earlier than the Late Preclassic (and quite probably sometime during the Early Classic).

The pit in operation 7 was divided into

TYPE: VARIETY LOT	SJ2O7-1	SJ2O7-2	SJ2O7-2/1	Total
Dzudzuquil cream-to-buff: Dzudzuquil		6	5	11
Maján Red-on-cream-to-buff: Maján		4		4
Tumben Incised: Tumben		1		1
Kin Orange-red: Kin		6		6
Tancah Burdo: Tancah		1		1
Chancenote Striated: Chiquilá	1	1		2
Sierra Red: Clear Slip	1	4	1	6
Sierra Red: Unspecified	4	36	2	42
Laguna Verde Incised: Clear Slip	24	12	2	38
Sierra Red: Black-and-red		1		1
Sierra Red: Striated-interior (Sierra)		1		1
Ucú Black: Unspecified		1		1
Dzilam Verde Incised: Dzilam		8		8
Carolina Bichrome Incised: Carolina		4		4
Sabán Burdo: Sabán	3			3
Sabán Burdo: Becoob		8		8
Cetelac Fiber-tempered: Cetelac		3		3
Unidentifiable	9	30		39
Total	42	127	10	179

Table 4.1.16. Actun Toh operation 7.

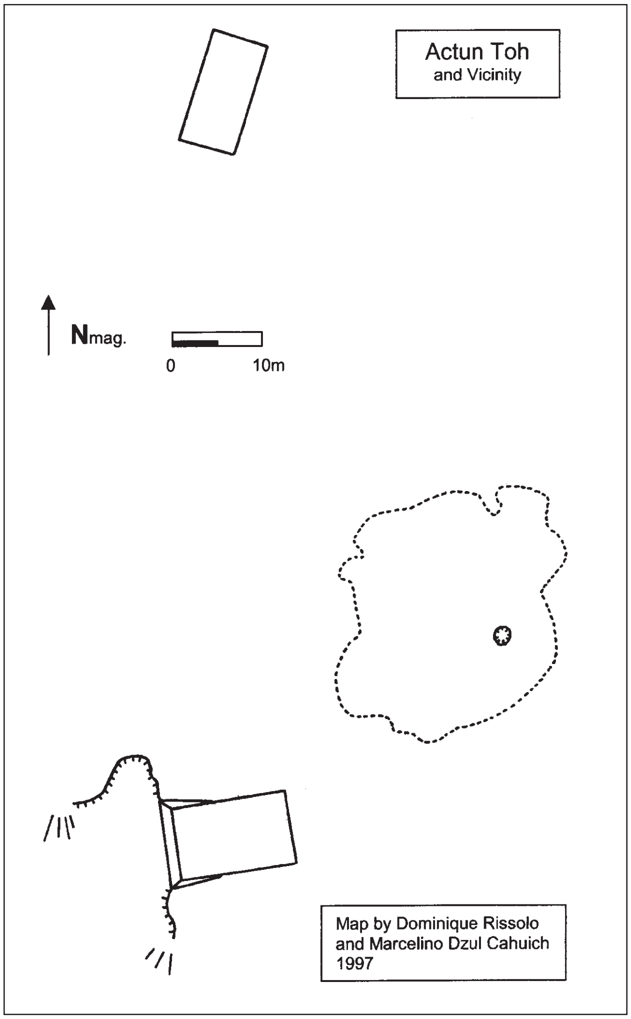


Figure 4.1.18. Map of Actun Toh and associated surface structures.

three lots (table 4.1.16). A total of 127 sherds were collected from the treads of the stairway (SJ2O7-2). I strongly suspect that this material tumbled into operation 7 from the collapsing northern edge of the floor. In other words, these sherds were likely at one time deposited as sub-floor construction fill. This was most definitely the case with SJ2O7-1, which is characterized by a steep flow of sherd-bearing fill that has spilled out of the exposed sub-floor ballast. It is also located beneath the section of the sub-floor that was profiled and collected (see figure 4.1.17 and table 4.1.5). The ceramics in SJ2O7-2/1 were extracted from beneath one of the steps and include sherds from the Dzudzuquil and Sierra groups. Although Middle Preclassic material is consistently associated with the sub-floor construction fill, it can be stated with some certainty that the consolidation of the sub-floor fill as well as the construction of the stairway into operation 7, took place during a later period.

Closing Remarks

Although the complexity of Actun Toh stands out among other caves in the survey, it shares with them certain distinct similarities. Notable modifications of the cave's interior demonstrate the importance placed on the small (and seemingly insignificant) pool that once provided access to the water table. An established circuit within the cave directed attention towards naturally or artificially enclosed or delineated spaces. In the case of Actun Toh, the extraction of a *sascab*-like material was particularly valued. Points along this circuit were marked by offerings, while the paths themselves were further designated as specialized routes by sherds scattered along them. The spatial organization of Actun Toh is developed in more detail in the final chapter of the dissertation.

The ceramic collection from Actun Toh attests to its long use history. A quantitative assessment of represented ceramic groups suggests a strong Late Preclassic to Early Classic component. The fact that no whole vessels were found within the cave can likely be attributed to looting activities. It is unclear whether or not each sherd in the cave's diverse assemblage at one time belonged to a vessel that was introduced into the cave whole. Nevertheless, I am led to believe that a signification percentage of the cave's pottery was brought in and deposited as sherds. A number of sherds were recovered from contexts that were highly stable and essentially sheltered from erosive forces. Consequently, many of these sherds were in pristine condition. However, other sherds among them were visibly weathered. This suggests that they were either exposed at the surface for some time and later introduced into the cave or they were transported from less stable areas of the cave. The Saxché Orange Polychrome sherds pose a similar problem. None of the sixteen sherds recovered appear to be from the same vessel. It should be noted that one hundred percent of the cave's surface was surveyed and no additional Saxché Orange Polychrome sherds were found. Either the remaining portions of these broken vessels were subsequently removed from the cave or the sherds were brought in and deposited as vessel fragments. Many of the Middle Preclassic sherds were in good condition, which suggests that they were deposited during this early period rather than collected from a surface site (either as sherds or whole vessels) and brought into the cave at a later time.

Two platform structures are located at the surface near the entrance of Actun Toh (figure 4.1.18). It is possible that the cave itself was part of a culturally defined precinct, where controls were placed on its already naturally restrictive access. Based on intriguing ceramic data from Actun Toh, future excavation of these structures may reveal evidence of the earliest Maya occupation in the region.

4.2. ACTUN TACBI HA

The first archaeological investigation of Actun Tacbi Ha involved a brief visit by Scott Fedick and Karl Taube in 1990. INAH archaeologist Luis Leira Guillermo officially reported the cave that same year. During the 1993 field season of the Yalahau project, I made a trip to the cave with Kevin Hovey and José Estrada Faisal. We produced a provisional map as well as a cursory collection of surface ceramics. Shortly thereafter, the cave was given the name Tacbi Ha ("hidden water") by Karl Taube. The results of the 1993 investigation were later published (Rissolo 1995) and are incorporated into this chapter.

Description

The cave, located 1 km east of the community of Naranjal, is essentially a large, single-chambered collapse dome (see figures 4.2.1 and 4.2.2). Its circumference is roughly ovoid and measures approximately 40 m at its widest point. A prominent mound is located 14 m beneath the narrow entrance shaft. This mound appears to consist entirely of collapse debris, which accumulated during the formation of the entrance above. Its borders are clearly delineated (perhaps artificially) and the mound measures a maximum of 10.5 m in diameter and 2.5 m in height. Though the mound has not been terraced (like in Actun Toh), it has nevertheless been significantly modified.

A carefully constructed and well-preserved stairway leads from the top of the mound to a pool below (figures 4.2.3 and 4.2.4). This stairway consists of eleven steps. The risers of eight of these steps were created by horizontally placed speleothems (mostly stalactites), which were apparently broken-off from the cave floor and lower portions of the ceiling. The pool (which marks the water table) is 5 m wide and approximately 1 m deep. The only other masonry feature in the cave is a crude step or low wall, which spans a narrow slot to the east of the pool.

Actun Tacbi Ha contains five additional pools. Four of these are essentially pits or solution features that reach the water table. A rather large pool is located along the eastern edge of the cave. Like the main pool at the base of the stairway, this pool was the focus of considerable attention and was marked by pottery.

Evidence of mining is also present in Actun Tacbi Ha. This practice was confined to a travertine mound located in the eastern portion of the cave. The relatively thin "crust" of flowstone was removed to reveal a *sascab*-like powder (figure 4.2.5). This material has not been analyzed, and may or may not resemble (chemically) the dolomitic material extracted from Actun Toh. Nevertheless, it is reasonable to assume that the materials mined from these two caves were functionally related. As in Actun Toh, it is difficult to determine the antiquity of this practice. The exposed (and obviously excavated) material in Actun Tacbi Ha

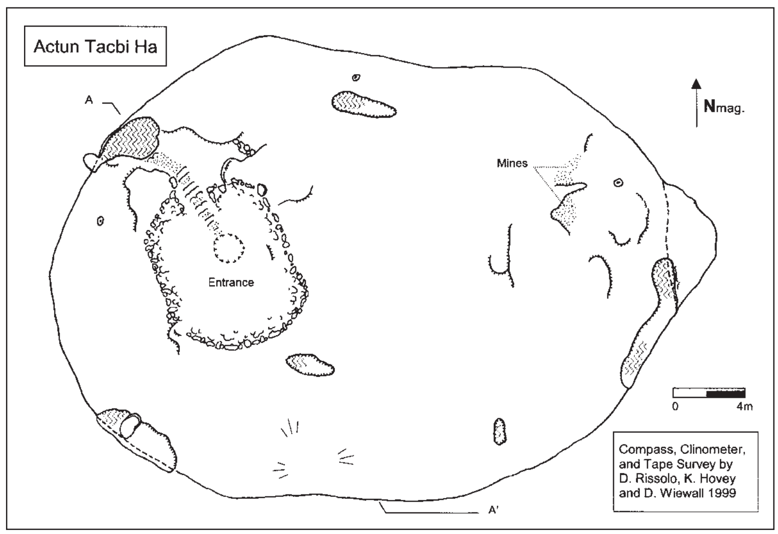


Figure 4.2.1. Map of Actun Tacbi Ha.

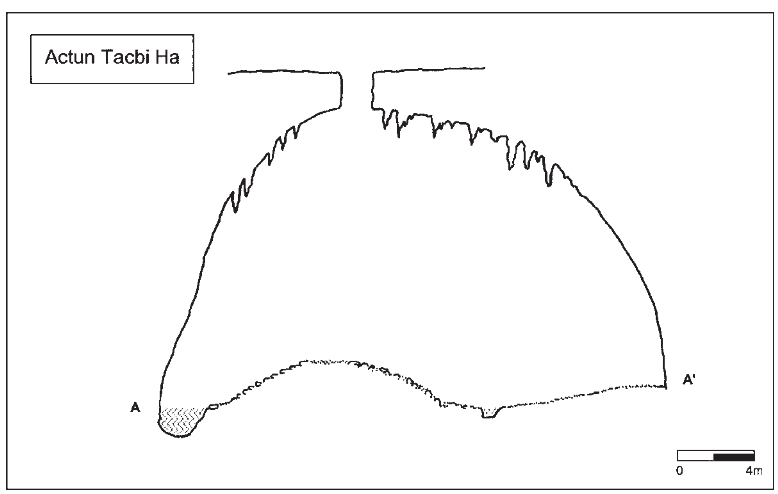


Figure 4.2.2. Profile of Actun Tacbi Ha.

Figure 4.2.3. Speleothem stairway in Actun Tacbi Ha.

is unsullied and appears fresh, which suggests recent activity. However, the mines are located in a relatively stable portion of the cave that is not subject to soil deposition or erosive forces. It appears that only a small quantity of material has been removed over time. This is significant because the utilitarian exploitation of this resource would have no doubt resulted in the large-scale removal of material. Rather, the remote location of the mine and the conservative nature of its use, are suggestive of a more ceremonial type of activity.

Evidence of speleothem breakage and removal is visible in Actun Tacbi Ha, but not to the extent present in other caves in the survey. The cave contains an array of rather large (live) stalagmites and, surprisingly, a number of broken speleothems were observed lying on the cave floor. The majority of the cave floor does not appear to have been modified in a manner that is readily observable. Bedrock shelves and flowstone characterize much of the uneven surface. Deposits of deep soils are present; however, excavations were not attempted.

TYPE: VARIETY LOT	N0-1	N0-2	N0-3	N0-4	N0-5	N0-6	N0-7
Cetelac Fiber-tempered: Cetelac	●	●		●	●	●	
Xoclan Trickle-on-red: Xoclan		●					
Petkanche Orange Polychrome: Unspecified							●
Vista Alegre Striated: Unspecified			●				
Muna Slate: Muna	●	●			●	●	
Sacalum Black-on-slate: Sacalum		●			●	●	

Table 4.2.1. Actun Tacbi Ha 1993 ceramic collection.

Lot Descriptions

The recovery of pottery from Actun Tacbi Ha differs from other caves in the survey in that a collection was made prior to the dissertation-related project. In 1993, the material from this collection was typed by Sylviane Boucher (at the Ceramoteca of Centro INAH Yucatán) and returned to the community of Naranjal. The lots were described in the subsequent published report (Rissolo 1995:166–118) and have been integrated into the present study (table 4.2.1). Due to logistical problems, accurate sherd counts (by type and variety) for each lot were not obtainable upon the collection's return. Therefore, their presence (rather than quantity) is indicated in table 4.2.1. In order to include this collection in the tabulation of combined lots (by type and variety) for all caves (table 5.2), each type and variety indicated in table 4.2.1 was assigned a numerical quantity of one. The broken but nearly whole vessel in lot seven was also counted as one "sherd." It should be noted that one lot collected in 1993 was not included in the 1995 report; however, it has been integrated into table 4.2.1.

Three surface collection strategies were used in the recovery of ceramic material from Actun Tacbi Ha (see lot map in figure 4.2.6 and tables 4.2.1 and 4.2.2). First, sherds representing either complete or partial single vessels, as well as discrete clusters of mixed sherds, were point-plotted and collected. Second, a 2 m-wide transect, which was divided into 1 m-square collection units, was positioned across the cave. A datum was established at the top of the mound. From here, the transect extended east for 29 m and terminated in a small alcove. The western segment of the transect terminated at the cave wall, 10 m from the mound. Third, the portions of the mound that were not included in the transect, were divided into four arbitrary sections. The surface of the stairway (which bisected one of the sections) was collected as a separate lot. Consequently, all the material located on the surface of the mound was collected.

A total of four lots were point-plotted on the surface of the mound. Lots 1 and 2 were essentially clusters of mixed sherds and likely represented simple votive offerings. Lot 8, which was recovered from the southwest section of the mound, is the lip-to-shoulder portion of a Tacopate Trickle-on-brown olla. No other corresponding sherds were found, which suggests that it was deposited as a partial vessel. Lot 8, located nearby, represents approximately 45–50% of a Cetelac Fiber-tempered vessel. An additional 15% of the same vessel was recovered from lot 12, which suggests that the vessel tumbled down the mound at some point in the past.

The remaining point-plotted lots were located in the eastern portion of the cave and were all recovered during the 1993 investigation. Lots 3 and 4 each consisted of broken portions of separate individual vessels. Though lots 5 and 6 were collected separately, they each appear to include portions of at least three different vessels that were broken and scattered across a bedrock shelf. Lots 3, 5, and 6 (as well as four transect lots described below) were all associated with the pool in this portion of the cave. Lot 7 is a broken but nearly whole Petkanche Orange Polychrome vase. This vessel was recovered by Karl Taube and Scott Fedick in 1990, and later typed by Joseph Ball. Its approximate original location is indicated on the map in figure 4.2.6.

The contents of each sherd-bearing surface collection unit along the transect are represented in table 4.2.2. In general, the material was clustered atop the mound and across the eastern portion of the cave (particularly near the pool). A few units in particular warrant brief descriptions. Lot E16S consisted of sherds from at least one Cetelac Fiber-tempered vessel. Also present were sherds from an unidentified semi-lustrous black-ware and a sherd from a Chemax Black-on-preslate handled olla. Lots E19N and E22S each consisted of sherds from partial Cetelac vessels. The material in Unit E27S was divided into three sublots and appears to consist of sherds from possibly three different Vista Alegre Striated vessels. Similarly, lot E28N appears to represent a single Vista Alegre vessel. It should be noted that the sherds from these lots originally belonged to vessels that were placed in the alcove and adjacent to the pool. As is common in Actun Tacbi Ha, the remaining portions of these vessels were not observed (and their absence may be attributed to looting).

The five arbitrary lots, which comprised the mound and the stairway, were not particularly noteworthy. The material was mostly scattered and no real clustering of material was observed. Compared to the structure in Actun Toh, the deposition

Figure 4.2.4. Pool in Actun Tacbi Ha.

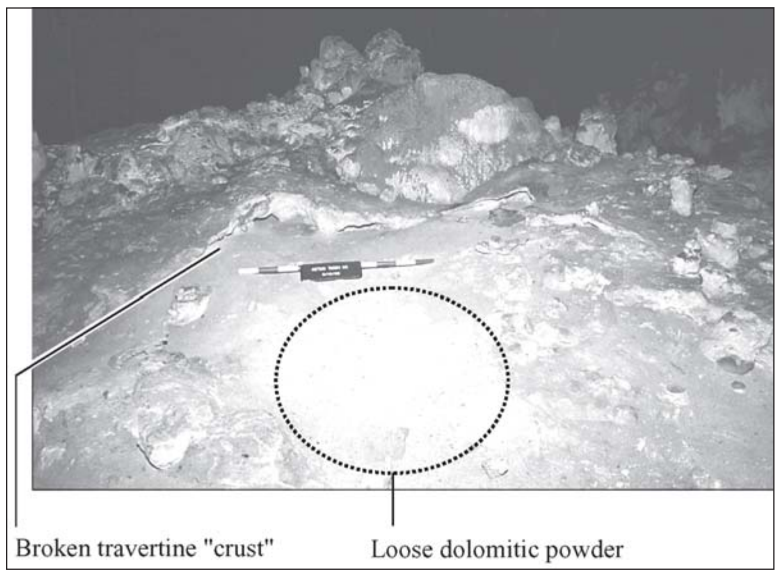


Figure 4.2.5. Mining area in Actun Tacbi Ha.

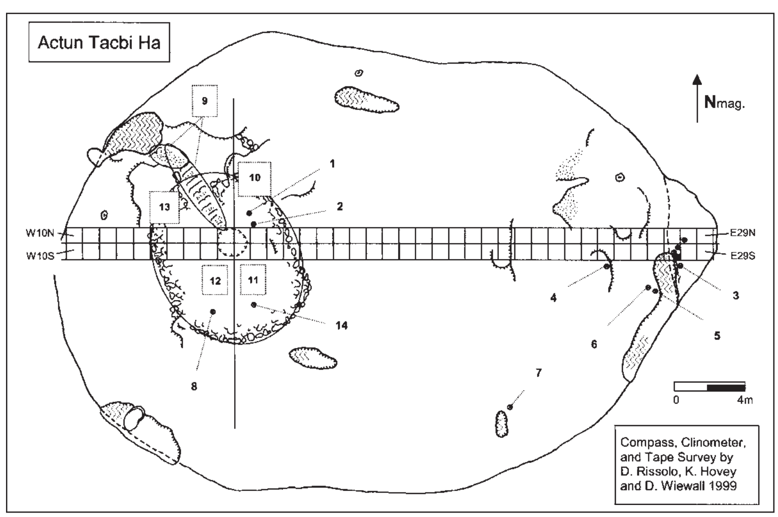


Figure 4.2.6. Map of Actun Tacbi Ha. Lot locations indicated.

TYPE: VARIETY LOT	N0 8	N0 9	N0 10	N0 11	N0 12	N0 13	N0 14	N0 E1N	N0 E2N	N0 E2S	N0 E3N	N0 E13S	N0 E16S	N0 E19N	N0 E22S	N0 E27S	N0 E27S/1	N0 E27S/2	N0 E27S/3	N0 E28N	N0 W1S	N0 W1N	N0 W2S	N0 W2N	N0 W3N	Total
Saban Burdo: Becoob		2	1	1	4					2																10
Aguila Orange: Aguila						1																				1
Cetelac Fiber-tempered: Cetelac					2		22						6		10								1		1	42
Tituc Orange Polychrome: Unspecified					6	1																1		5		13
Tacopate Trickle-on-brown: Unspecified	3																									3
Chemax Black-on-preslate: Chemax													1													1
Vista Alegre Striated: Vista Alegre			3										1			3	6	8	17	20						58
Arena Red: Arena									1																	1
Special Semi-lustrous Black		3	6		1	2		1			2	1	9								3			2		30
Unidentified														5												5
Unidentifiable				1			27						5		38	1	30	22	28	20			2		1	175
Total	3	5	10	2	13	4	49	1	1	2	2	1	22	5	48	4	36	30	45	40	3	1	3	7	2	339

Table 4.2.2. Actun Tacbi Ha 1999 ceramic collection.

of material (excluding the point-plotted lots) was light.

It should be mentioned that two whole vessels currently residing in the *casa ejidal* of Naranjal are said to be from Actun Tacbi Ha. One of these is an Arena Red basal-flange dish with solid button tripod supports. The other is a miniature, gadrooned, two-handled, Dzitya Black olla, which is similar (in form) to a miniature vessel found in Balankanche (Andrews 1970:fig. 54k).

Closing Remarks

Like Actun Toh, the cave's difficulty of access and its architectural modification demonstrate that the water present in Actun Tacbi Ha received special attention. Similarly, the apparent value placed on the *sascab*-like material is suggested by its remote context and controlled exploitation. Votive offerings of sherds and the placement of whole vessels, especially the Petkanche Orange Polychrome vase, further mark portions of the cave as sacred space. Interestingly, with the exception of the Tacopate olla, no Preclassic material was recovered from the cave. Based on the ceramic collections, Actun Tacbi Ha appears to have been a site of some importance between the Early Classic and Terminal Classic Periods.

4.3: ACTUN TAM HA

Actun Tam Ha ("cave of the deep water") lies within the *ejido* of San Francisco but is located 2.5 km northeast of El Naranjal. The cave was selected for detailed investigation due to its location relative to dense settlement and alternative water sources, as well as its proximity to the site of El Naranjal. (This will be discussed in more detail below). I first visited Actun Tam Ha in 1996 and returned the following season in order to produce a map of the cave. During the 1997 season, a partial ceramic collection was recovered.

Description

The cave is a single-chambered, 40 m-wide collapse dome, which is similar in morphology to Actun Tacbi Ha. The upper floor of the cave is 7 m below the entrance shaft in the ceiling. In the center of the cave is a prominent bedrock mound and flowstone formation. Two stairways lead down from the upper floor to a large pool below, which lies approximately 12 m below the ground surface (see figure 4.3.1 and 4.3.2.).

The pool encircles approximately 70% of the chamber's circumference and is over 4 m deep. This is the largest pool of any cave in the survey and the presence of submerged passageways suggests that it is part of a more extensive underwater cavern system. One of the two stairways approaches the pool due east of the entrance. The path follows a curving series of steps set between a bedrock outcrop and the prominent central flowstone formation. After reaching a landing, the path descends four low steps to the edge of the pool.

The second stairway descends from the upper floor, just northeast of the entrance. Here, a path consisting of four broad steps leads to a low wall and finally reaches the northern terminus of the pool. Between the two stairways is a natural balcony with a commanding view of the pool below. In the center of the balcony is a shallow solution feature containing a dense concentration of sherds. The southern portion of the cave is characterized by breakdown and collapse debris. Little to no alteration was observed in this portion of the cave.

In 1997, the floor of the cave pool was surveyed by Julie Bell and me (using mask and snorkel) and

TYPE: VARIETY LOT	SF2-1	SF2-2	SF2-3	SF2-4	Total
Achiote Unslipped: Sabán	1		1		2
Sierra Red: Clear Slip		3	2	1	6
Sierra Red: Unspecified	1				1
Huachinango Bichrome Incised: Huachinango	1				1
Total	3	3	3	1	10

Table 4.3.1. Actun Tam Ha ceramic collection.

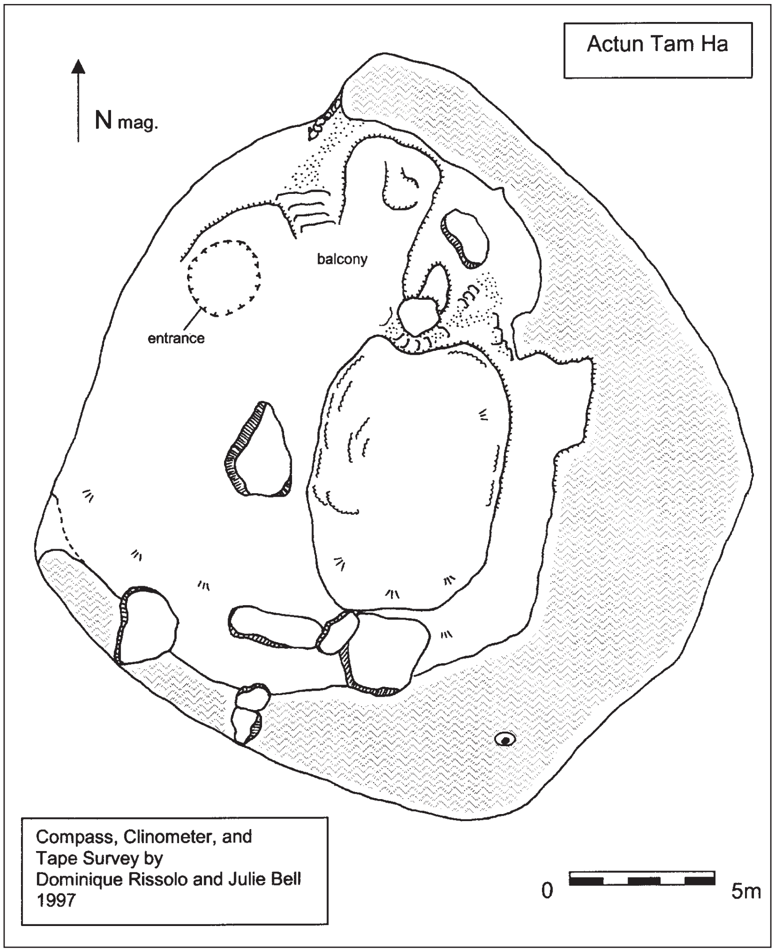


Figure 4.3.1. Map of Actun Tam Ha.

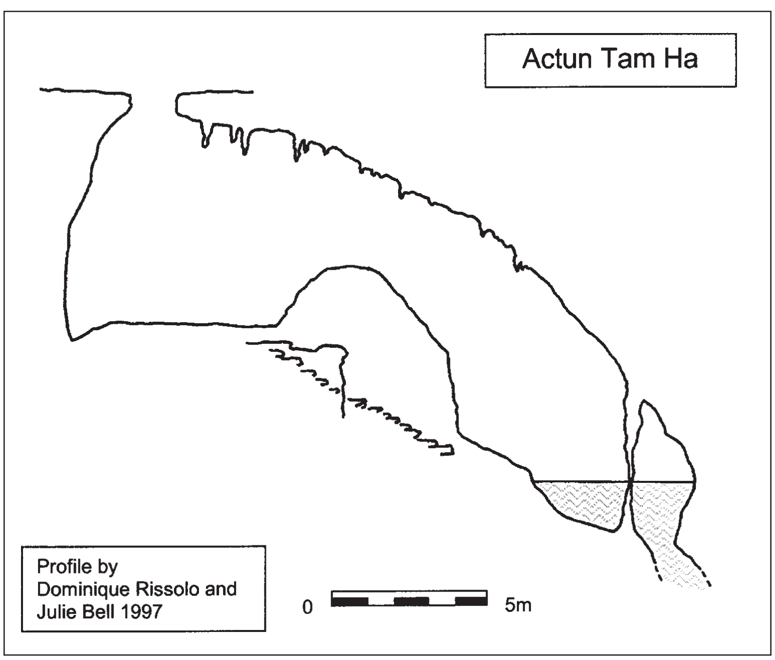


Figure 4.3.2. Idealized profile of Actun Tam Ha.

Jane Prendergast (using scuba). The pool was arbitrarily divided into four segments. Probably due to the thick layer of sediment across the bottom of the pool, only ten sherds were recovered (table 4.3.1). A rather large Huachinango Bichrome Incised cajete fragment, along with two other sherds, was recovered beneath the balcony. The remaining sherds were recovered along the portion of the pool accessed by the eastern stairway.

Discussion and Closing Remarks

The cave itself is located within a continuous band of settlement that follows a low ridge along the eastern side of the Naranjal *sabana*. The cave is approximately 500 m from the edge of the *sabana* and within 600 m of two ancient wells (both of which are located near the *sabana* itself). Although Actun Tam Ha does not appear to be directly associated with specific structures along the *sabana*, its location is of particular interest. The basal platforms identified in this area are characteristic of more elite residential architecture and occupy what was probably considered to be a favorable natural setting within the vicinity of the site core of El Naranjal (see Fedick and Hovey 1995).

A preliminary survey of the eastern portion of the Naranjal *sabana* suggests that the greatest concentration of settlement is located relatively close to the wetland and no further than 500 m from the *sabana* edge. This pattern places the cave on the periphery of this settlement zone. Consequently, the *sabana* would have been a closer source of water than Actun Tam Ha for residents of the immediate area. The *sabana* would have been far more accessible as well, considering the cave's vertical entrance. Owing to the cave's location and the nature of its constricted and challenging access, it is more likely that Actun Tam Ha was reserved for activities of a ceremonial nature. It is also important to note that the scattering of sherds in the cave is quite light. Even if whole vessels were removed by *chicleros* or other more recent visitors to the cave, one would expect to find an abundance of olla fragments indicative of routine ancient water collection. The ceramic collection, small as it is, consists entirely of Middle Preclassic to Late Preclassic (or Protoclassic) material. The Middle Preclassic Achiote sherd is interesting and if more were found within the cave, it might suggest an early phase which has not yet been identified this close to El Naranjal. Unfortunately, a number of logistical constraints prevented further surface collection of the cave.

Actun Tam Ha does not appear to have hosted a broad range of activities like that of Actun Toh. It is conceivable that offerings once deposited in the cave have since been looted but identifiable altars or shrines are conspicuously lacking. Though a disproportionately high number of small stalactites are present (suggesting cultural breakage), the cave does not appear to have been a preferred location for speleothem removal. This is likely due to the chamber's steep walls and high ceiling. Actun Tam Ha is indeed a grand cave and was no doubt valued for its majestic pool and for its expansive and inaccessible nature.

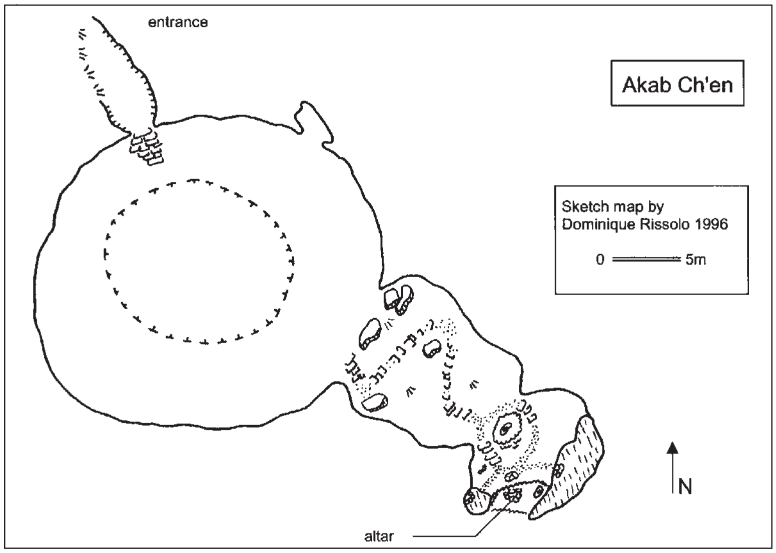


Figure 4.4.1. Map of Akab Ch'en.

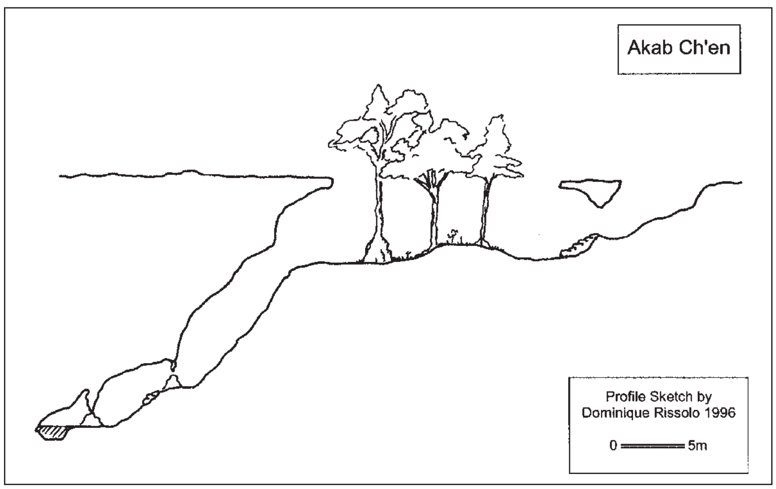


Figure 4.4.2. Profile of Akab Ch'en.

4.4: AKAB CH'EN

Akab Ch'en ("dark well") lies within the *ejido* of San Francisco, but is located approximately 2 km southwest of the community of San Cosme. In antiquity, the cave was likely associated with the site of San Cosme itself. The following description is the result of a single trip to the cave in the spring of 1996. The cave was not selected for detailed investigation; however, it was plotted, sketch mapped, and photographed.

Description

Akab Ch'en can be divided into three distinct zones or areas. The entrance zone is a circular sinkhole, approximately 25 m in diameter, with 5 m-high vertical to incurving walls. The floor of the sinkhole is reached via an artificially carved portal along its northern wall. This portal connects the interior of the sinkhole with an adjacent topographic depression or gully (see figures 4.4.1, 4.4.2, and 4.4.3). A stairway consisting of six intact risers spans the short vertical drop between the threshold of the portal and the floor of the sinkhole. This stairway is composed of large well-dressed blocks. The floor of the sinkhole is relatively level except for a low mound of breakdown at its center. The entrance zone is well lit and due to its tall trees and lush foliage, has an atrium-like quality. An alcove is located high within the wall of the sinkhole (just east of the portal) and inside sherds were observed.

Along the southeastern periphery of the sinkhole floor, is the entrance to a steeply sloping chamber. A well-preserved stairway descends into this twilight area and ultimately arrives at the twin entrances to the room below. The stairway consists of roughly- to well-dressed blocks, and reaches the bottom of the sloping chamber via three switchbacks. The entrances at the basal landing of the stairway are essentially two ovoid portals, which are divided by a dripstone column atop a flowstone mound (see figure 4.4.4). The southern portal, which appears to have been the preferred entrance, is smoothly arched and may have been artificially modified. At the landing, the stairway/path bifurcates into two separate stairways—one passing through each of the two portals.

The lower room of Akab Ch'en is characterized by two small pools divided by a crude altar. The two path/stairways leading from the twin entrances join together in front of the altar. This feature consists of 1×2 m circular mound of stones placed atop a flowstone slope. A dripstone column and a drapery formation flank the altar and the flowstone slope. Two short paths diverge in front of the altar, each one leading to separate pools. At the edge of the larger of the two pools (which measures approximately 5×7 m, and .5 m deep) is a submerged step or landing which may have facilitated water collection when levels were periodically lower. The smaller pool to the southwest is located in a tiny alcove and contains a semi-circular stone feature on its floor. Both pools are permanent and mark the current water table (which in this area is roughly 20m below the ground surface).

Though sherds are scattered across the lower room (including the floors of the two pools), no discrete offerings or whole vessels were observed. Access to the cave is easy and the lower room appears to be heavily trafficked. My guide informed me that local hunters often use the cave as a source of drinking water while out in the bush, and modern bottles were founded stashed near the pools. If any whole vessels or artifacts were deposited in the cave, they have no doubt been removed. Like most of the caves in the survey, evidence of speleothem breakage and removal is present. No intact large speleothems were observed and soda straws grow from many of the stumps on the ceiling.

A number of structures were observed in the immediate vicinity of Akab Ch'en, and likely corresponded to the site of San Cosme. A square platform (25 m on a side) with well-preserved Megalithic masonry is located 15 m east of the edge of the sinkhole. At least six substantial residential platforms were identified within 75–100 m of Akab Ch'en. No wells were found in the area. However, two small *aguadas* (which appear to have been carved into the bedrock) were found near the mounds.

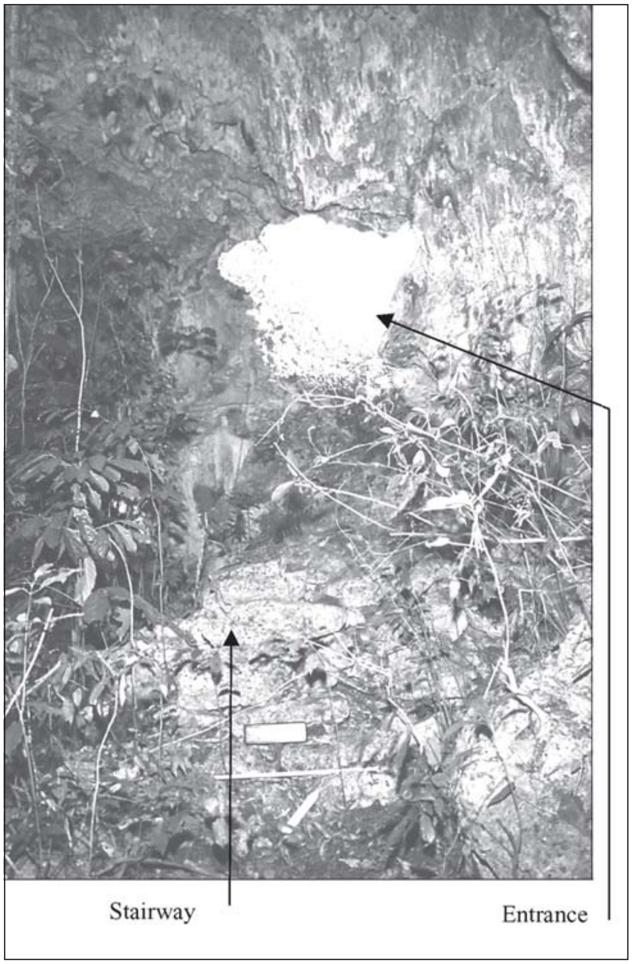


Figure 4.4.3. Modified entrance portal to Akab Ch'en.

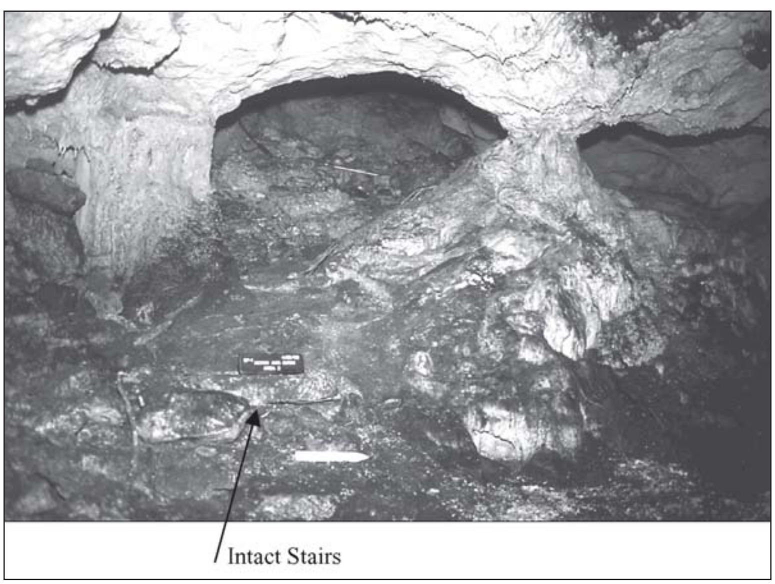


Figure 4.4.4. Entrance to lower room of Akab Ch'en. Photograph was taken inside the room, looking northwest. The portal on the left appears to have been the preferred entrance and may have been modified. The stairway in the foreground leads to the altar.

Closing Remarks

In the absence of readily available water sources in the area surrounding Akab Ch'en, it is certainly conceivable that the cave functioned as an important water-gathering site. Unlike Actun Toh, Actun Tacbi Ha, and Actun Tam Ha, the pools within Akab Ch'en were relatively accessible. Nevertheless, the altar associated with the pools attests to the cave's sacred nature. Why the ancient Maya chose to carve an entrance through the wall of the sinkhole rather than use a ladder to reach its floor is unclear. The bedrock that at one time separated the gully from the sinkhole was apparently not particularly thick. Perhaps the ancient Maya expanded an incipient opening between the two spaces and were easily able to create the portal that provides access today. The portal has the added effect of making the expansive openness of the sinkhole zone accessible only through a single, purposefully configured entryway.

4.5: PAK CH'EN

Pak Ch'en is located approximately 4 km southwest of the ancient Maya site and modern town of Kantunilkin (see figure 1.2). This relatively small, single-room cave contains the most extensive and elaborate corpus of rock art yet reported in the region. The numerous engraved or pecked images (petroglyphs) range from simple motifs to more sophisticated and diagnostic figures. This section provides descriptions and illustrations of the petroglyphs as well as a comparative analysis and interpretation of the imagery. Pak Ch'en is one of only four reported caves with rock art in the Yalahau region. Due to the overall limited number of reported rock art sites in northern Quintana Roo, the images cannot be evaluated within the context of a local style or tradition. Therefore, a consideration of the region's prehistory will be paired with a broader contextual and stylistic analysis of Maya cave art.

I first visited the cave in the spring of 1997 at the suggestion of Jennifer Mathews and Julie Bell, who visited the cave while on a regional cenote reconnaissance. Motivated by the presence of vandalism, I returned to Pak Ch'en in summer 1998 to produce a map and record the images. The pottery was collected the following year.

Description

The cave is essentially a single-chamber collapse dome with an average diameter of 15 m (see figure 4.5.1) and may be classified as a twilight cave—as no part of the cave is in total darkness during the daytime. The interior of the cave is accessed via a bedrock slope beneath an ovoid opening along the cave's northeastern edge (see figures 4.5.1 and 4.5.2). The entrance is steep, and shallow steps, which were carved into the bedrock, facilitate the initial passage into the cave. At the base of these steps is a narrow landing, from which the pathway through the caves begins.

The well-marked path through the cave contains steps of roughly dressed limestone blocks and makes use of natural flowstone and rimstone dams (which are now dry). After two switchbacks, the path meets the first of the rock art panels that adorn the western wall of the cave (figure 4.5.3). These panels will be discussed in greater detail below. A final series of steps leads past panels A through D to the west, and the boulder, which holds panel G to the east.

The final destination of the pathway is a low room which contains a small pool (figures 4.5.1 and 4.5.3). Directly above the entrance of the room are panels E (superior)

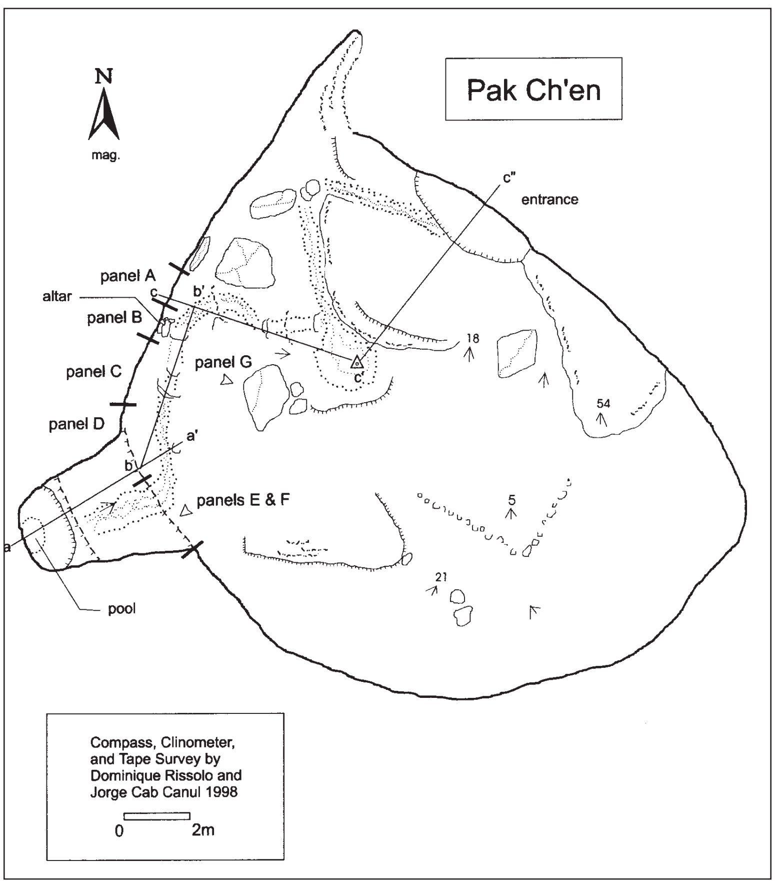


Figure 4.5.1. Map of Pak Ch'en.

and F (inferior). When observed, the pool measured roughly 1m in diameter, 40 cm deep, and 10.4 m below the surface (or forest floor). The water level appears to periodically rise an additional 60 cm, as suggested by the sharp break in slope near the water's edge and the presence of evaporates surrounding the area above the observed water line. Although quite shallow, the pool appears to be permanent and to provide access to the water table. This was confirmed by the presence of fish that regularly emerge from the point where the pool sumps (figure 4.5.3).

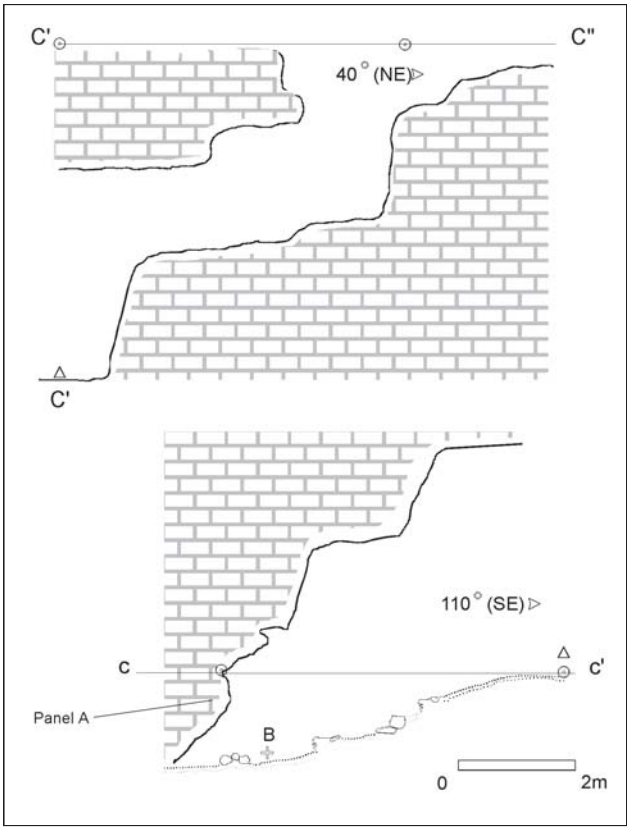


Figure 4.5.2. Profiles C-C' and C'-C" of Pak Ch'en.

Along both sides of the pathway within the pool's small room, are sloping piles of debris. These debris slopes are composed of small rocks in a dense matrix of damp soil. Like in Actun Toh, it appears that the pool periodically fills with debris when water from heavy rains rushes into the cave. In order to gain access to the small pool, the debris was removed and piled to the sides. The pool in Pak Ch'en is currently used by local *milperos* as a source of water for their horses and is regularly maintained. More than likely, ancient visitors to the cave were involved in this practice as well.

The southeastern-half of Pak Ch'en appears to have received little attention by the ancient Maya when compared to the pathway-petroglyph-pool configuration of the northwestern portion of the cave. The only identified feature in this area is a crude and mildly sloping platform created by two, low terrace risers (see figure 4.5.1). There is no evidence of an artificial floor; however, the structure may be in an advanced state of collapse. Additionally, a possible pathway passes between one of the terraces and a natural bedrock shelf.

Rock Art Recording Methodology

The corpus of rock art in Pak Ch'en is arbitrarily divided into seven more or less distinct panels. This level of division allows for a reasonably manageable evaluation and discussion of the petrogylphs. The subdivision of petroglyphs *within* these panels was avoided so as not to obscure possible emic groupings of images or the associations between images. With the exception of panel G, illustrations of whole panels are provided. A concerted attempt was made to locate all the engraved images, but the nature of changing light conditions and the effects of weathering often conceal more subtle alterations of the cave walls. Thus, it is conceivable that not every element present was recorded.

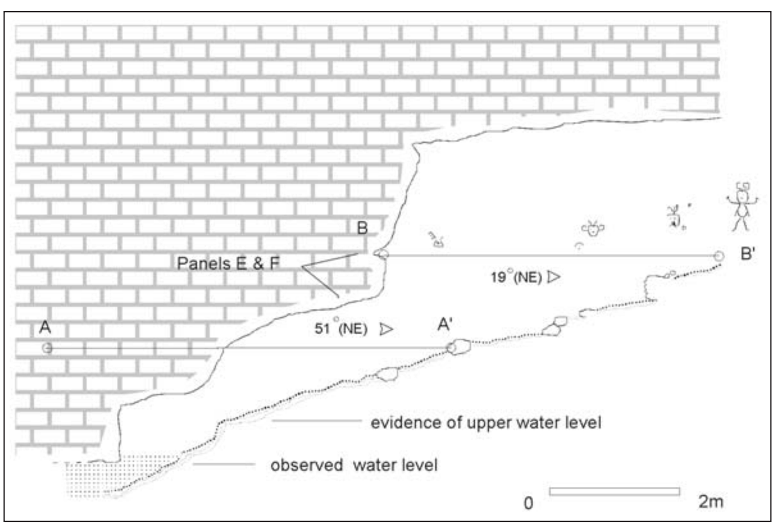


Figure 4.5.3. Profiles A-A' and B-B'of Pak Ch'en.

The dampness of the rock and the presence of a thin coating of algae on the cave walls made conventional rubbings nearly impossible. The relative flatness of the panels made photography a viable alternative. Each panel was photographed on 35mm black-and-white film using a 50 mm 1:3.5 macro lens. This technique effectively minimized spatial distortion and maintained aspect ratios. Ambient light was manipulated and enhanced using a powerful but diffused flash set at an oblique angle. The photographs were later traced using the stipple technique.

The Rock Art

Panel A (figure 4.5.4)

The first image encountered along the pathway to the pool has been designated as panel A. This anthropomorphic figure is 60 cm in height and 37 cm wide (from hand to hand). The entire body of the figure is depicted, including a scroll-like element that appears to be a headdress. The arms, with three-fingered hands, are raised and the legs spread apart. Two lines appear to run roughly parallel to the legs and might represent an article of clothing or an attempt to give width to the legs. On the inside of the bodice of the figure is a smaller face.

Panel B (figure 4.5.5)

This panel consists of several petroglyphs. The most prominent is a carefully engraved face in the center of the panel. This figure appears to exhibit both Chaak- and Tlaloc-like features, which Taube describes as a common Late Postclassic development in rain god imagery (1992:133–136). Examples of similar figures with fanged maws and non-goggled eyes were found at Santa Rita and Mayflower, Belize (Taube 1992; see figure 4.5.6). Atop the head of this figure is a group of elements that might represent a headdress, within which appears to be a tiny face. Directly below the rain-god face, is a crude stone altar. The altar consists of a broad, flat stone resting atop a stack of smaller stones, and is located between the path and the cave wall (see map in figure 4.5.1).

Surrounding the possible rain-god figure, are at least nine distinct vulva motifs. The depiction of the female pubic area in this fashion is quite common in Mesoamerica —particularly in cave contexts. Several of these upside-down triangles with vertical slits have been recorded in caves throughout the Maya area (see Stone 1995:75–86; see also Velázquez Morlet et al. 1988:82). Strecker (1987) elaborates on such sexual imagery and includes examples from Chiapas as well as Yucatán. Vulva motifs were also found at Chacatzingo, Morelos (Apostolides 1987:175–177). Anthropomorphic figures with upside-down “U” vulva motifs between their legs, are present in Loltún cave (see Velázquez Morlet et al. 1988:82) and Dzibichen (Velázquez Morlet et al. 1988:82, 92; Stone 1995:78). Actun Kaua, also in Yucatán, contains one such figure as well (Sayther et al. 1998: fig. 14). Of particular interest is the association between these sexual motifs and rain god imagery, which I will discuss below.

The general morphology or layout of Dzibichen is quite similar to Pak Ch’en— including the presence of a stairway, and small pool, and a series of drawings (Stone 1995:74–86). The rock art panel in Dzibichen (see figure 4.5.8) contains, among other images, vulva motifs and a codex-style depiction of the Yucatecan rain god Chaak (Stone 1995:77). One such depiction of Chaak was also identified in La Cueva de Tixcuytún (Barrera Rubio and Peraza Lope 1999: photograph 15). In Dzibichen, Stone (1995) points out the figure’s close association with lightning serpents, also drawn on the cave wall. Rather than serpents, vulva motifs surround the rain god figure in panel B of Pak Ch’en, yet an equally powerful statement of water and fertility appears to have been made by the cave artists. The chronological implications of this scene will be discussed below, but as a final note, Stone (personal communication 1999) brought another interesting similarity to my attention. A few faces in Dzibichen (figure 4.5.7), one of which Stone notes as bearing a resemblance to “lord of the *k’atun*” (1995:81), possess a brow and nose created by a continuous line. This characteristic, which she describes as Colonial in age, is also present on the rain god image in Pak Ch’en.

Panel C (figure 4.5.9)

This panel consists of four distinct faces and at least three vulva motifs. Other geometric and curvilinear elements, in various states of preservation, are present as well. The face on the right-hand side of the panel is the most prominent. The elements projecting from its head might represent a headdress. The scoll-like elements at the sides of the face could be part of this headdress or might represent ear flares. A somewhat similar face (figure 4.5.10) was recorded by E. H. Thompson in Loltun Cave (1897: fig. 8). As an aside, it is interesting to note the similarity between the snake-like figure below the face in Loltun (Thompson 1897), and the image in the upper left-hand corner of a rock art panel in Cueva Xcosmil (Strecker 1985: fig. 10), which is shown in figure 4.5.14.

A second trapezoidal face is located down and to the left. Towards the far right of the panel are two smaller faces. The two deeply pecked dots and a horizontal line above the first face might be the orbits and mouth of a crude face, or perhaps the bar and dot numerical equivalent of seven. A similar, asymmetrical face may be present to the lower left.

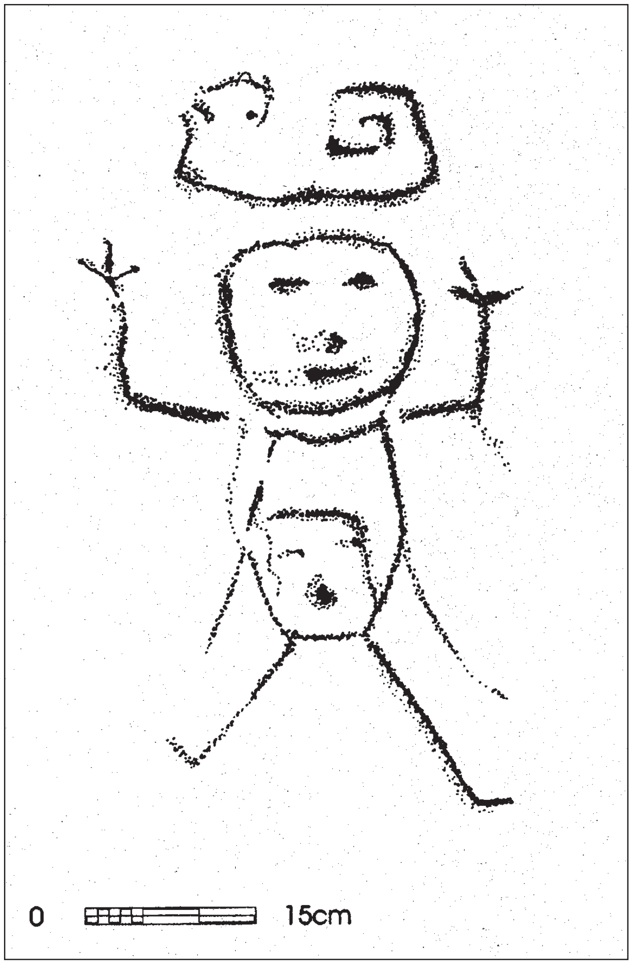


Figure 4.5.4. Pak Ch'en Panel A (drawing by D. Rissolo).

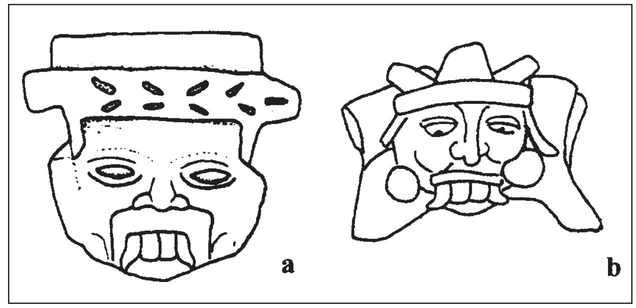


Figure 4.5.6. a. Santa Rita (after Taube 1992:fig. 73a, redrawn from D. Chase 1985:fig. 5). b. Mayflower (after Taube 1992:fig 73f, redrawn from E. A. Graham 1985:fig. 7).

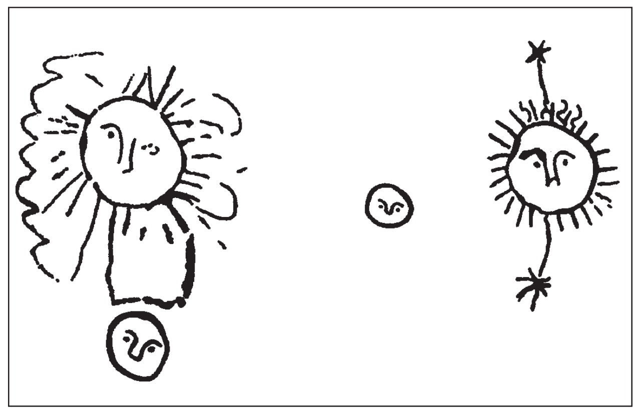


Figure 4.5.7. Dzibichen (after Stone 1995:fig.4-73).

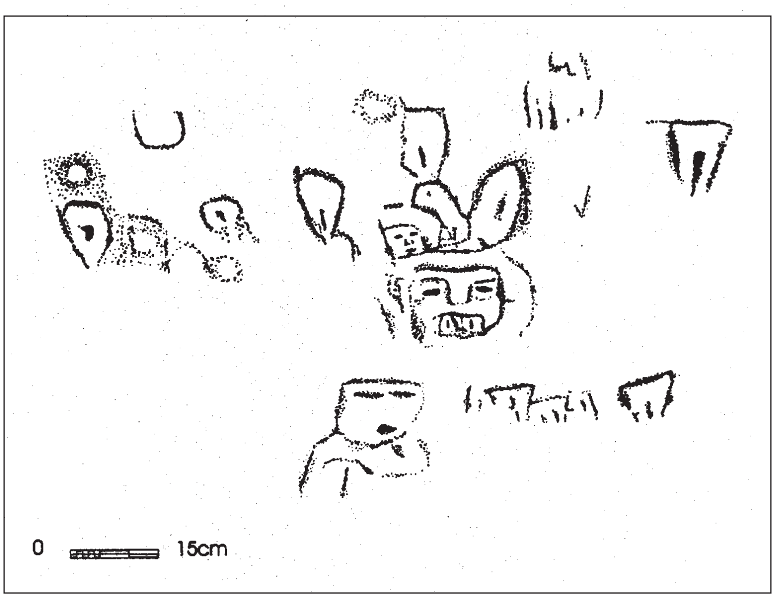


Figure 4.5.5. Pak Ch'en Panel B (drawing by D. Rissolo).

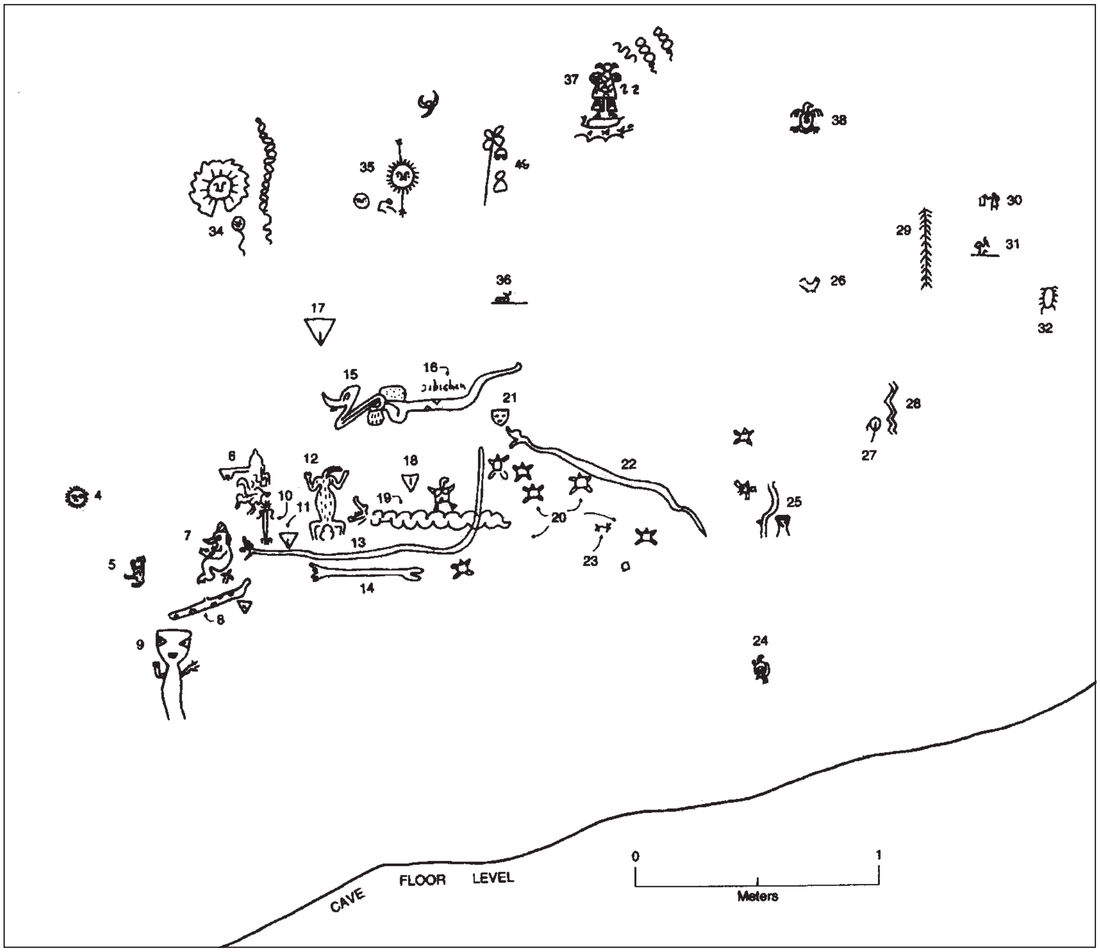


Figure 4.5.8. The rock art of Dzibichen (after Stone 1995:fig 4-68). Note Chaak (Drawing 7) and serpents (Drawings 8, 13, 14, 15, 19, 22). Also note vulva motifs (Drawings 11, 17, 18, and possibly others). All images identified by Stone.

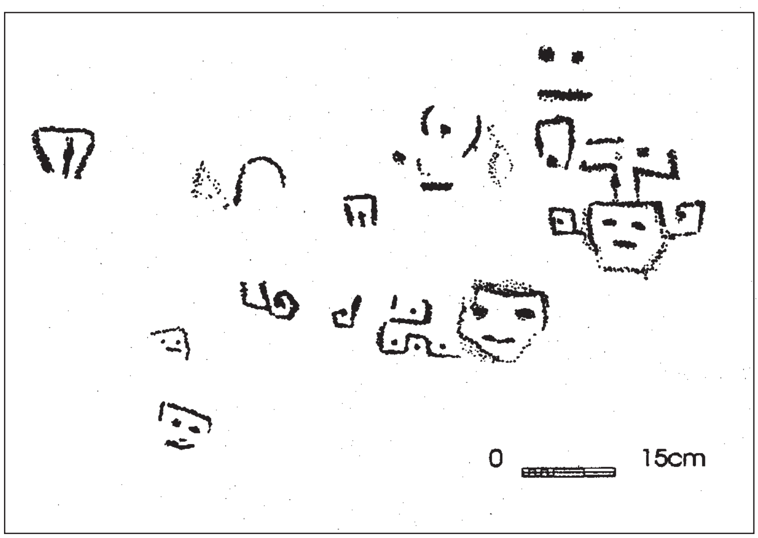


Figure 4.5.9. Pak Ch'en Panel C (drawing by D. Rissolo.)

Figure 4.5.10. Loltún (after Thompson 1897:fig. 8).

Panel D (figure 4.5.11)

To the right of the entrance of the small pool chamber, is a panel with at least four distinct images. It should be mentioned here that certain portions of the panel are either highly weathered or some engravings are extremely shallow. Alternative recording methods might reveal additional petroglyphs in the future. In the upper right-hand corner is a double triangle with wing-like elements. This image might represent the body and wings of a Colonial period Hapsburg eagle (see figure 4.5.12b) like those recorded by Stone at Dzibichen (Stone 1995:74–86). It also bears a striking resemblance to a petroglyph (figure 4.5.12c) from Actun Uayazba Kab, Belize (Helmke and Awe 1998:149–154). This latter image, in turn, is similar to part of a scene from Miramar, which was recorded by Veronique Breuil and published by Stone (1995: fig. 4-83). To Stone, Breuil described this component of the scene to be the head of a creature, whose tail emerges on the right (Stone 1995:86).

Below and to the left is a small circular face, which is connected to an up-turned double "U" element. In the bottom left-hand portion of the panel is an image that might represent the sun, an eye, or perhaps the head and crest of a bird. This image appears to continue to the left but was difficult to accurately record.

Panel E (figure 4.5.13)

Panels E and F are located above the entrance to the pool chamber. Panel E, which is the upper of the two, consists of graceful volutes and curvilinear elements.

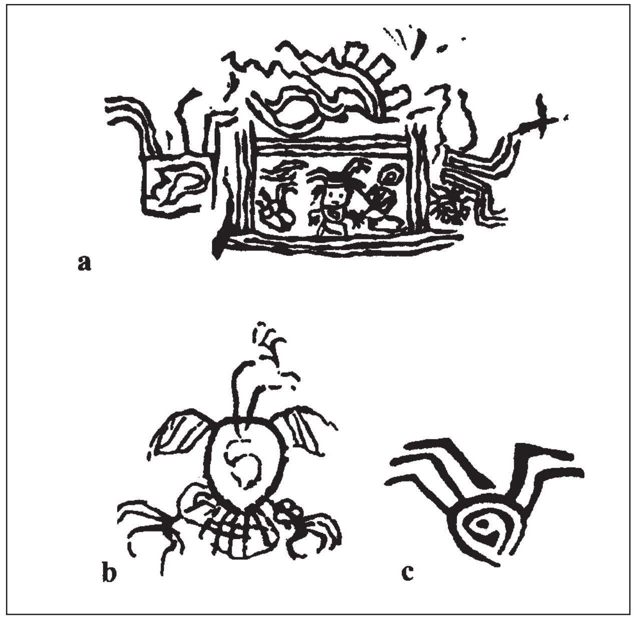


Figure 4.5.12. a. Miramar (after Stone 1995:fig. 4-83, adapted from drawing by V. Breuil). b. Dzibichen (after Stone 1995:fig. 4-73). c. Actun Uayazba Kab (after Helmke and Awe 1998:fig. 6).

At the far right is a cruder petroglyph that might represent a serpent. Located atop a nearby volute is a simple face. To the left are a series of deeply engraved volutes and a set of deeply pecked bars and dots. This latter grouping closely resembles a series of bars and dots from Cueva Xcosmil (Strecker 1985: fig. 10), which are shown in the upper left-hand corner of figure 4.5.14. It is unclear whether or not these elements (including the vertically oriented example from Lotun in figure 4.5.10) represent simple faces or bar and dot numeration. At the top of the panel are two possible vulva motifs. Directly below is a scrolled petroglyph that might be a lazy-S motif or an unfinished or badly eroded face. In the bottom left-hand corner is a face which was executed in relatively high relief. This face, which is almost heart shaped, has a circle on its left side and a tri-lobed element below its chin.

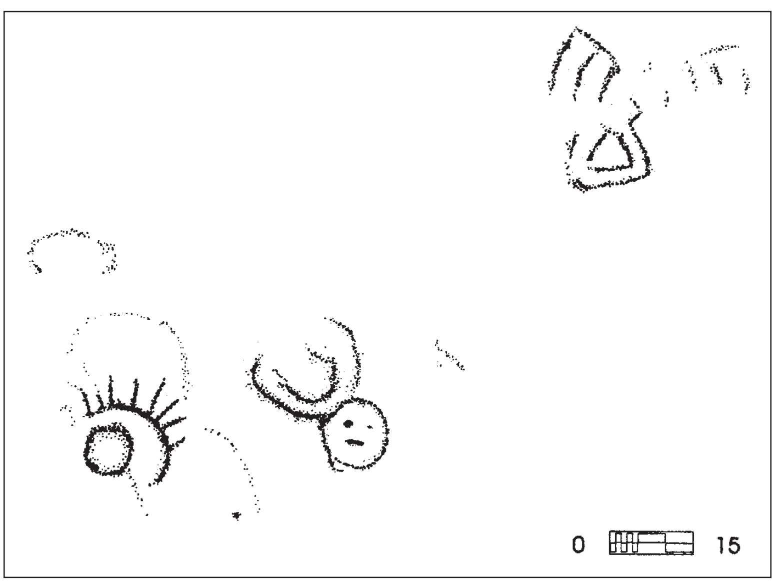


Figure 4.5.11. Pak Ch'en Panel D (drawing by D. Rissolo).

Simple frontal faces, like those found throughout Pak Ch'en and in Cueva Xcosmil, are common and widespread in Mesoamerican cave art. They are often crudely executed and range from circular to almost simian or skull-like in shape. In the Maya area, such faces have been recorded elsewhere in Yucatán (Bonor Villarejo and Sánchez y Pinto 1991; see also Stone 1997:34–38), Belize (Helmke and Awe 1998:154–159; see also McNatt

1996:89), the Petén of Guatemala (Brady 1999b), and elsewhere in Quintana Roo (Martos López 1994a: 76–77; see also chapters 4.1 and 4.13 of present study). These simple faces may not all share the same significance and are difficult to both interpret and date.

A deep solution feature (figure 4.5.15) serves as a natural boundary to the portion of panel E illustrated in figure 4.5.13. As visible in the photograph, at least two images are present to the left of this feature (but were not drawn). They were faint and difficult to discern; however, the upper figure appears to be a face with a partial body and arms, while lower might be a simple face. The arc of the solution pocket also appears to have been altered or embellished. A local *ejidatario* told me that this hole once held a cross, but it was stolen many years ago. Surely, this fortuitously located natural niche did not go unnoticed or unused in antiquity.

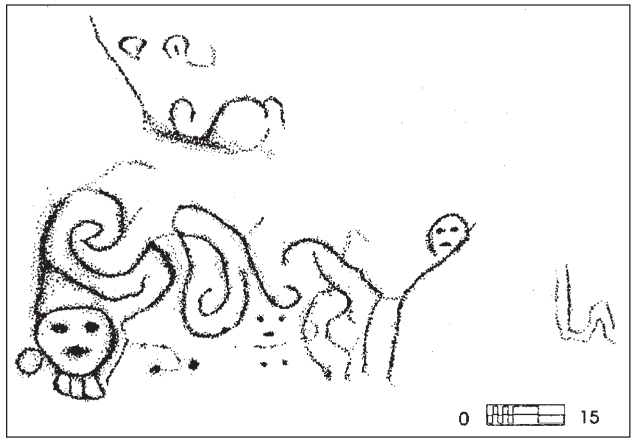


Figure 4.5.13. Pak Ch'en Panel E (drawing by D. Rissolo).

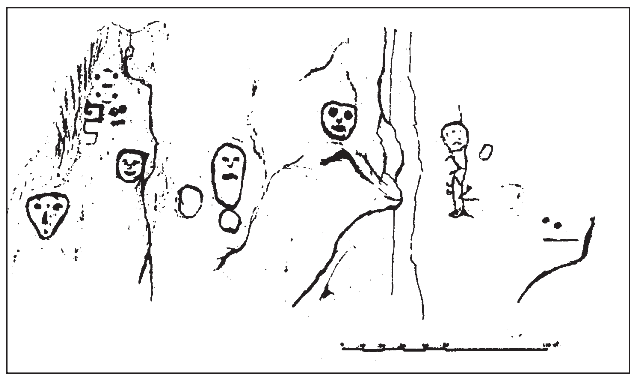


Figure 4.5.14. Cueva Xcosmil (after Strecker 1985:fig. 10).

Panel F (figure 4.5.16)

This panel is located directly below panel E and above the entrance to the pool. The most striking image is what appears to be a very realistic rendering of a vagina. Perhaps it was intended to clearly mark the pool as a watery and womb-like place and the sacred epicenter of the cave. It is unclear whether or not the zig-zag line to the left is a completed petroglyph or if it represents an unfinished series of vulva-like images. Lower on the panel are short horizontal lines, which appear to compose a number of crude faces. A circular and more identifiable face is located to the far left. This face is the last image on the curving gallery of rock art that begins with panel A.

Panel G-1 (figure 4.5.17)

Panel G is located on the western side of a large boulder, which sits across from panel C (see map, figure 4.5.1). The top of this boulder is at roughly the same level as the broad natural terrace on which the datum was established. There are two distinct carved images on the boulder and they have been cataloged as G-1 and G-2. The profile of the figure on panel G-1 has been identified by Karl Taube as that of God C (personal communication). Particularly diagnostic characteristics include the large-lipped mouth, pug nose, and blunt forehead. The element attached to the back of his head might be a hanging ear ornament not

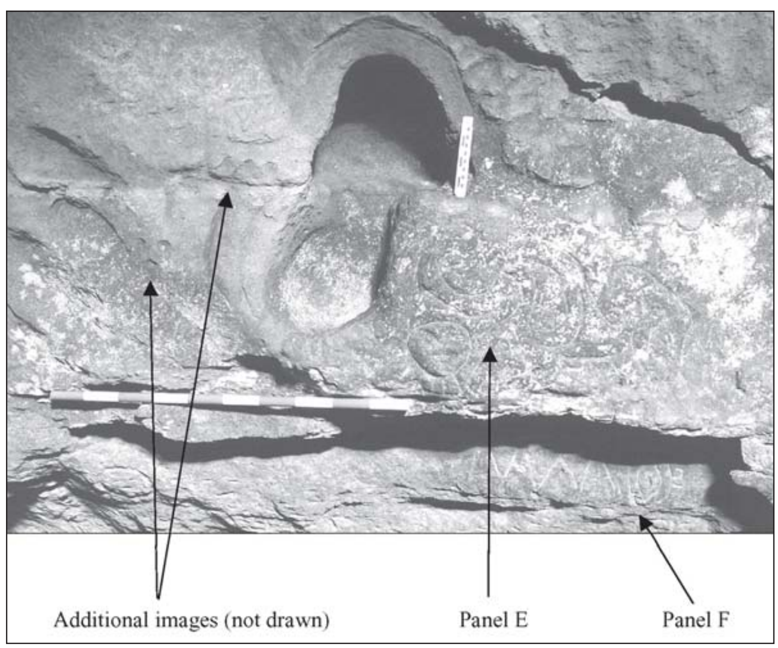
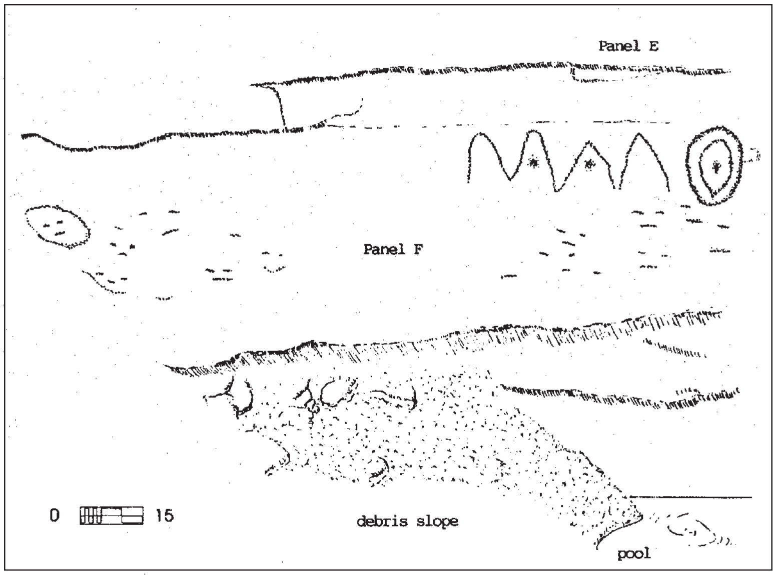
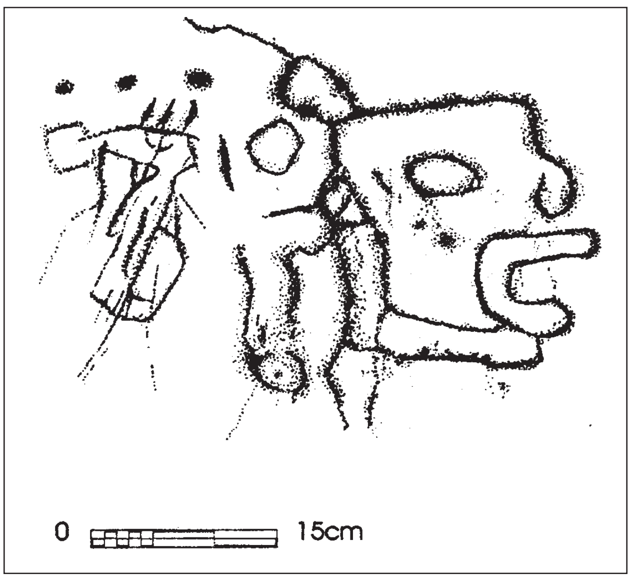
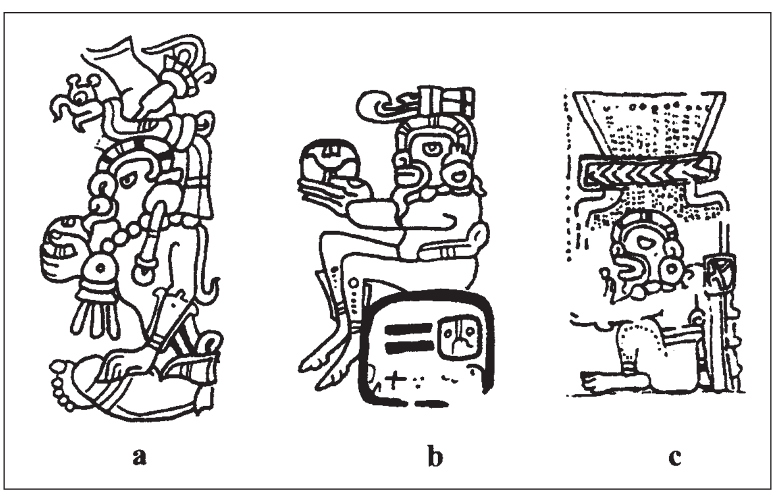


Figure 4.5.15. Pak Ch'en solution feature.







Top: Figure 4.5.16. Pak Ch'en Panel F (drawing by D. Rissolo).

Middle: Figure 4.5.17.Pak Ch'en Panel G-1 (drawing by D. Rissolo).

Bottom: Figure 4.5.18. a. Codex Dresden p. 13b (after Taube 1992:fig. 10d). b. Codex Madrid p. 50c (after Taube 1992:fig. 10c). c. Codex Madrid p 63b (after Villacorta and Villacorta 1976:350).

unlike the one worn by God C on page 13b of the Dresden Codex (see figure 4.5.18a; refer to b and c for additional codical examples of God C). Taube's description of God C (1992:30) suggests that the presence of his image in the Pak Ch'en may have been intended to designate the cave as a scared place. This codex-style personification of God C also supports a Late Postclassic time frame for at least a portion of the rock art in the cave.

The image adjacent to God C on panel G-1 is difficult to interpret but might represent a small crested bird, which faces to the left. Above this image are two deeply pecked dots. Below the left-most dot is a small square.

Panel G-2 (figure 4.5.19)

Located in the lower left-hand portion of the boulder is G-2. This panel consists of a frontal figure with an anvil-like head, high nose, deeply pecked orbits, and a peculiar lower jaw or chin. It is possible that this figure is a frontal depiction of God C. A similar face (figure 4.5.20) was found in Aktunkoot, Quintana Roo (Martos López 1994b). The image from Aktunkoot possesses an ear ornament, which resembles that of God C from panel G-1 and from page 13b of the Dresden Codex (see figures 4.5.17 and 4.5.18a, respectively).

It is unclear what, exactly, is extending from the figure's mouth in G-2. However, somewhat similar figures with flaring or splayed lower jaws have been recorded in Yucatán (Strecker 1985: fig. 20), Belize (Helmke and Awe 1998: fig. 12), and Honduras (Brady et al. 2000: figs. 5 and 9). This feature might also be related to the tri-lobe element on the face in the lower left-hand corner of panel D.

Above the figure on G-2, are a series of seemingly random shallow scratches. At first, these lines were assumed to be recent graffiti but it is difficult to be certain. Within the scratched area is a more deeply engraved image. This petroglyph consists of a circle surrounded by a vulva-like wedge, two radiating lines, and four dots.

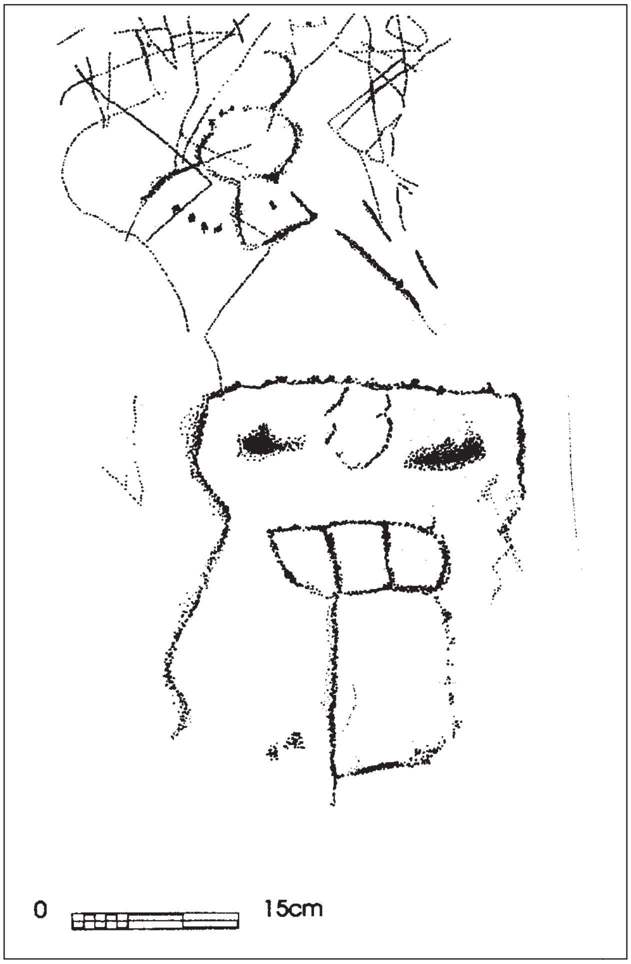


Figure 4.5.19. Pak Ch'en Panel G-2 (drawing by D. Rissolo).

Figure 4.5.20. Aktunkoot (after Martos López 1994b).

Ceramics and Chronology

Approximately twenty percent of the cave's surface was surveyed and collected. The judgmental sampling strategy involved the division of lots based on the location of pathways as well as areas beneath rock art panels and surrounding the pool. As one would expect from a cave that is both accessible and currently in frequent use, no ancient whole vessels were recovered. It is conceivable that recent visitors to the cave have removed even large and intrinsically attractive sherds, as only small sherds were observed during the survey. In total, 105 sherds were collected, of which 35 were unidentifiable due to their small size and/or eroded condition (see table 4.5.1). When analyzed, there did not appear to be any meaningful differences between lots in terms of sherd frequency, form and type. However, the greatest concentration was not associated with the rock art portion of the cave, but rather found at the base of steep flowstone slope just southeast of the entrance. Pottery was also recovered from the debris mounds that flank the pool—confirming the mounds' cultural origin. However, it is impossible to determine whether or not the inclusion of the sherds in these mounds is coeval with the period of the pottery's manufacture or use, since sherds continue to wash into the pool today (and the pool continues to be maintained).

The ceramic material ranges from the Middle Preclassic to the Late Classic periods. The earliest types include Achiote Unslipped, Tancah Burdo, and Sierra group ceramics. Incised bichromes, such as Dzilam Verde and Carolina, were also present. Early Classic material included Saban Burdo and Cetelac Fiber-tempered. The only Late Classic type represented is Sibal Buff Polychrome. Vessel form was difficult to discern due to the small size of the sherds and their lack of diagnostic attributes. However, ollas appear to have been the most common form, and most of these were plain-ware water jars. Sierra Red cajetes were also well represented, but only three tecomate sherds were identified.

Though Pak Ch'en is surrounded by low residential platforms, the only recorded settlement in the area is the little known site of Kantunilkin. In Sanders' survey of the region (1955) he describes the general characteristics of the site and later reports on the results of his cursory ceramic analysis (1960:199–200). The material he recovered included examples of Late Preclassic to Early Classic pottery such as Tancah Burdo, Chancenote Striated, and Sierra Red. Taube also observed sherds from an Early Classic basal flange polychrome vessel at the site (1995:52). Additionally,

TYPE: VARIETY LOT	KK1-2	KK1-3	KK1-4	KK1-5	KK1-6	KK1-7	KK1-8	KK1-9	KK1-10	KK1-11	KK1-12	KK1-13	Total
Achiote Unslipped: Sabán										2		1	3
Tancah Burdo: Tancah		1	1	1	1								4
Sierra Red: Clear Slip	1	1						3			1	4	10
Sierra Red: Unspecified	2				2	3	1	1				8	17
Laguna Verde Incised: Clear-slip								1				3	4
Sierra Red: Black-and-red												2	2
Dzilam Verde Incised: Dzilam			1										1
Carolina Bichrome Incised: Carolina							1	3	1	1		2	8
Kantenah Red-on-orange Special												1	1
Sabán Burdo: Sabán	1							1	1	7		3	13
Sabán Burdo: Becoob					1								1
Cetelac Fiber-tempered: Cetelac			2										2
Cetelac Fiber-tempered: Xcán		1								1			2
Sibal Buff Polychrome: Unspecified												2	2
Unidentifiable	14		4		1		3	2	1	8		2	35
Total	18	3	8	1	5	3	5	11	3	19	1	28	**105**

Table 4.5.1. Pak Ch'en ceramic collection.

the use of the Megalithic style of architecture at Kantunilkin, which is associated with the Late Preclassic to Early Classic periods, is considered by Mathews (1998).

As is often the case with rock art, many of the images in Pak Ch'en are difficult to date and could have been engraved into the cave walls at nearly any time in the past. However, the presence of the rain god figure in panel B and the depiction of God C in panel G-1, suggests that at least a portion of the rock art was not executed before the Late Postclassic, or possibly Colonial, period. Perhaps even the vulva motifs in panel B are coeval with the image they appear to frame. The late nature of the rock art is interesting since no Postclassic material was recovered. Rather, the pottery attests to a strong early component in the cave's use history. Perhaps the cave functioned as an important and sacred water collection site during the Preclassic to Early Classic periods (hence the corresponding vessels). The codex-style imagery in the cave could mark a Late Postclassic reoccupation in the region, or be the result of occasional pilgrimage activities.

Closing Remarks

The impressive corpus of rock art in Pak Ch'en provides insights into the nature of cave use in the Yalahau region as well as the idiosyncratic, multivariant, yet highly patterned nature of Maya cave art in general. It is important to note that many of the associations drawn between images in Pak Ch'en, and their comparisons with images from other caves might be more imagined than real. This is especially likely with the simple faces and geometric elements whose similarities might be more or less coincidental and not indicative of a specific set of ideas. Nevertheless, their positioning designates the path to the pool as a ritually prescribed route.

The majority of rock art in the Maya area (and the northern lowlands in particular) can be described as vernacular in nature (see Stone 1997). Of course, evidence of elite activity has been reported in a number of caves with rock art (Stone 1997; see also Stone 1989b, 1995). Though not highly sophisticated, a portion of the imagery in Pak Ch'en exhibits qualities that suggest the work of artists who were at least somewhat literate in the iconography of the elite. The associations between the images, the constructed pathway, and the pool suggest that the cave was a spatially ordered and sacred watery place. The sexual nature of caves was a pervasive theme in the Maya area (see Brady 1988) and the presence and arrangement of natural and cultural elements in Pak Ch'en allude to these concepts of fertility. This topic will be explored further in the final chapter of the dissertation.

4.6: CAVE SJ-1 (UNNAMED)

Cave SJ-1 is located approximately 3 km north of the community of San Juan de Dios and approximately 4 km southwest of the community/site of San Cosme. The cave was initially visited by Karl Taube in 1984, and at his suggestion I inquired about the cave during my later work in San Juan de Dios. During my regional reconnaissance 1995, I made a brief trip to the cave along with two local guides. I had only time to explore the cave and make a few cursory notes. I attempted to return in 1996, but was unable to secure a guide who was familiar with the cave's exact location.

The cave is roughly 15 m in diameter and is accessed through an extremely small hole in the ceiling. Beneath the entrance is a natural promontory or bedrock mound, which is encircled by a cleared pathway leading down to a shallow pool. Ceramic sherds are scattered throughout the cave, but the heaviest concentration lies near the entrance. In this area, Taube observed a conch fragment and a Late Classic polychrome rim sherd (personal communication 2001). Also present is a low wall located at the top of the mound. The pool, which measures approximately 5 m by 2 m, is found along the periphery of the single-chambered cave. It appears to be above the water table and only fills periodically. The flaky white evaporates associated with cave pools throughout the region, are present atop the floor of the pool where the water has receded. The pool itself is essentially a sediment-filled depression that may have at one time provided a reliable link to the water table (as seen in Actun Toh). Evidence of speleothem breakage and removal is present as well.

The cave itself lies in the midst of a small site or group of structures. Minimal clearing of the area revealed the apparent positioning of platform structures around the cave so that the cave's entrance hole marks the center of a small plaza. One such structure, a low basal platform, is located within 10 m of the cave entrance. Ideally, the area would need to be cleared and mapped in order confirm the spatial relationship between the cave and surrounding architecture. Due to a number of logistical factors, Cave SJ-1 was not selected for detailed investigation during the 1997-99 field seasons. However, the cave has excellent future research potential.

4.7: ACTUN PECH

Actun Pech ("cave of the ticks") is located 4.1 km southeast of El Naranjal. Kevin Hovey and I initially investigated the cave in 1995. The apparent use of a small and remote pool within the cave, combined with the cave's location relative to nearby ancient wells and settlement, made it an ideal candidate for more thorough investigation. A survey of the cave was completed in 1997, with the assistance of caver Jane Prendergast, and a complete surface collection was conducted with Kurt R. Heidelberg in 1998. The map of Actun Pech (figure 4.7.1) has been arbitrarily divided into five operations (figures 4.7.3–4.7.7) to allow a more detailed planimetric view of the cave.

Description

The cave entrance is essentially a vertical shaft, which measures 2 m in diameter and is 6.7 m deep (see figures 4.7.1 and 4.7.2). At the bottom of this pit is a 6.5 m-long, downward-sloping antechamber. Four steps lead past a flowstone mound and beneath a dripstone formation. A high relief, donut-like element (measuring 22 cm in diameter) was carved into this formation. This is the only evidence of rock art identified in Actun Pech. At the bottom (or end) of the antechamber, is a naturally constrictive portal that leads to the tunnel portion of the cave.

The 120 m-long tunnel begins at 11.91 m below the ground surface and follows a relatively straight course before reaching the pool. In the 65 m distance between the beginning of the tunnel and the pool, the passageway loses approximately 1 m of elevation. (In other words, the tunnel slopes slightly downward towards the pool).

The initial portion of the tunnel is the narrowest

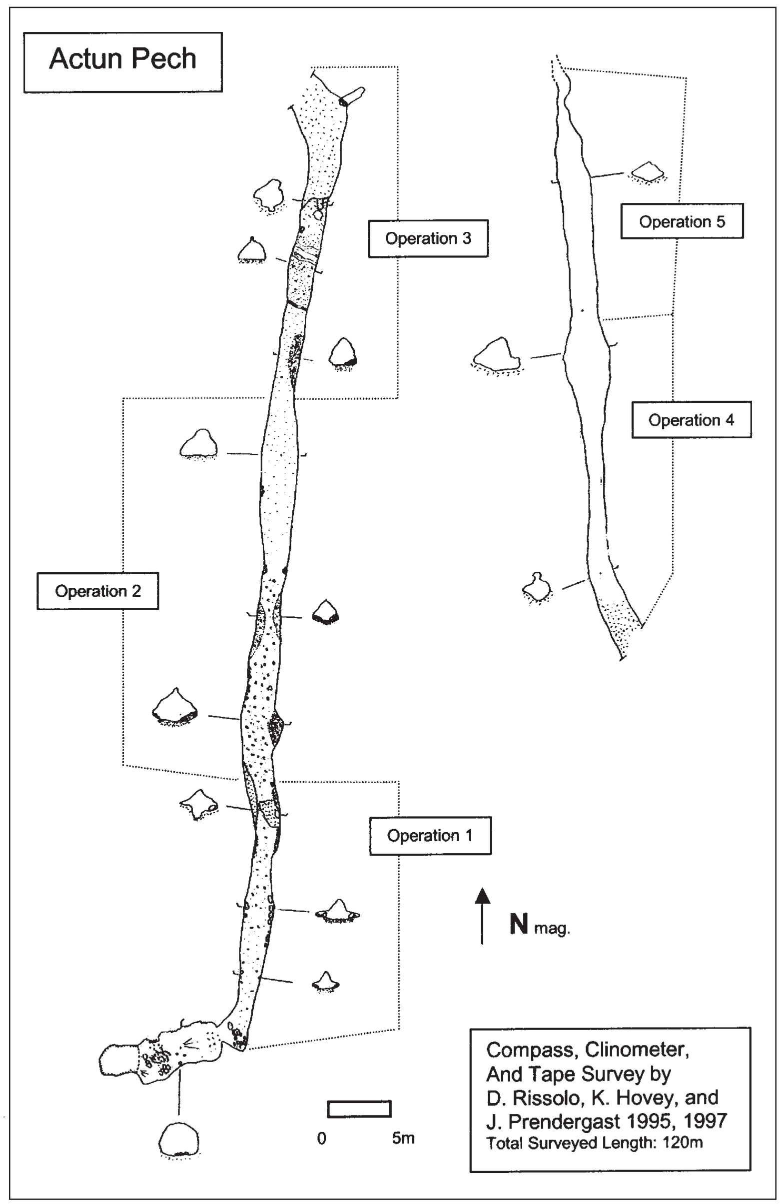


Figure 4.7.1. Map of Actun Pech.

and lowest. The ceiling in this section has a pronounced and aesthetically intriguing natural corbel vault-like shape, which is more or less present throughout the length of the tunnel. The floor of the passageway is covered with small rocks, soil, and sherds. At a point 10 m into the tunnel, larger rocks were pushed aside—no doubt in an effort to facilitate access through the tunnel (see photo in figure 4.7.10). This practice is evident, in varying degrees, along several portions of the tunnel and is recorded on the cave map (figures 4.7.1 and 4.7.3–4.7.5).

At 17 m into the tunnel, exposed bedrock constricts the flat cave floor through a narrow slot. After this section, sherd frequency increases dramatically. A large mound of debris was piled against the eastern wall of the cave at the 25 m mark. Numerous sherds were recovered from the surface of this mound, the bulk of which appears to consist of small rock and sherds (see photo in figure 4.7.11).

This section of the cave also contains an appreciable deposit of surface soils. Observations over a four-year period confirm that this portion of the cave is frequently and significantly altered by natural erosive forces. The periodic deposition, transportation, and re-deposition of sediment are evidenced by soil staining on the cave walls, as well as ripple marks (caused by water currents) on the cave floor. Moreover, pieces of rotting wood, which were washed in from the surface, were found up to 25 m into the tunnel. One such log was 138 cm long and 12 cm in diameter. Although the abundant ceramic material was most likely deposited within the confines of the tunnel, it is safe to assume that none of the sherds on the cave floor can be regarded as *in situ.* To better understand the movement of water through the cave, I placed a small stone wrapped in marked flagging tape every 25 m along the tunnel floor during the 1996 field season. When examined in 1998, the 25 m marker did not appear to have moved at all; however, the 50 m marker had tumbled an additional 1.35 m into the tunnel.

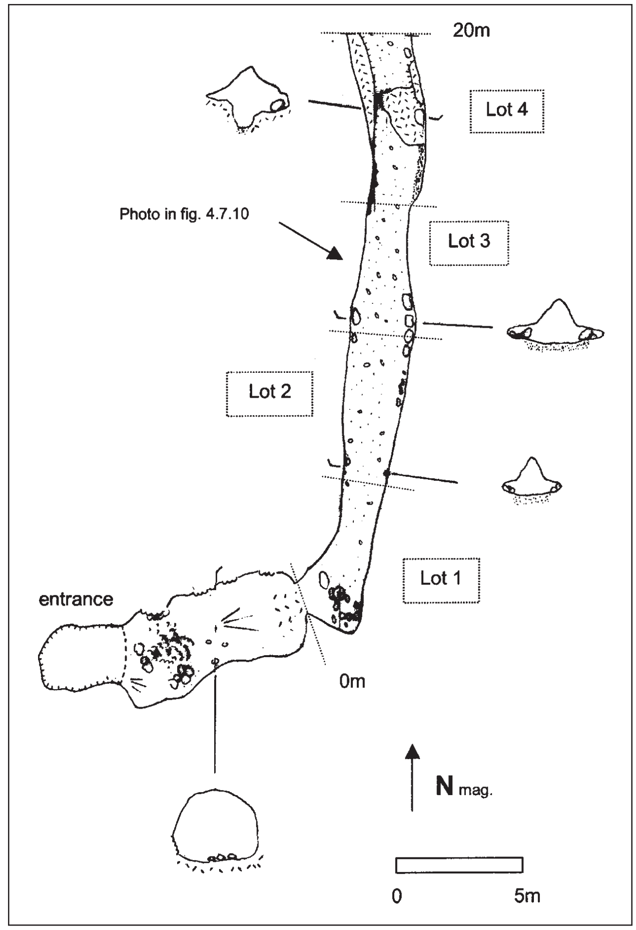


Figure 4.7.3. Actun Pech, Operation 1.

The densest concentration of sherds was located between 30–35 m (lot 7). Most of this material was recovered from the surfaces of the two debris mounds. Between 35–50 m, deep soil covers the cave floor. Large clasts and other debris are entirely absent. Surface soil washed into Actun Pech appears to accumulate in this section, obscuring any cultural material below. Between 50–55 m, another artificial debris mound was created along the eastern wall (see photo in figure 4.7.8). All the material collected within in this section was located atop this mound. It is important to note that these artificial debris mounds act as islands, which are protected from the periodic movement of water and deposition of soil on the cave floor.

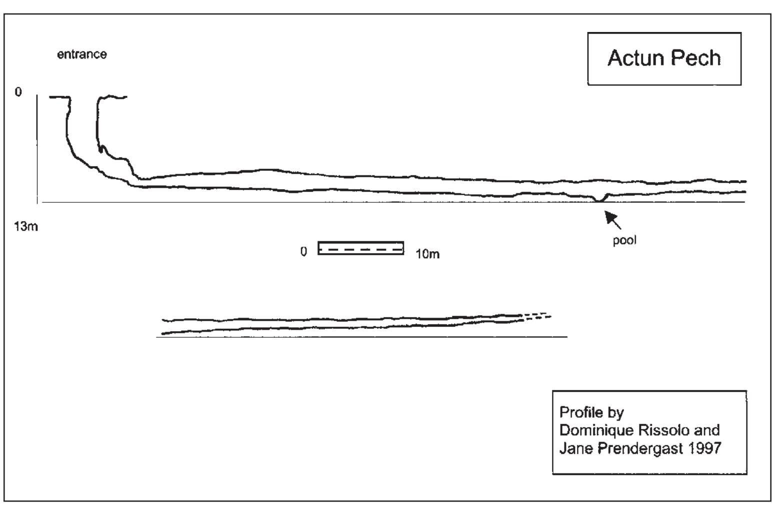


Figure 4.7.2. Profile of Actun Pech.

A low mound of clayey and rocky soil

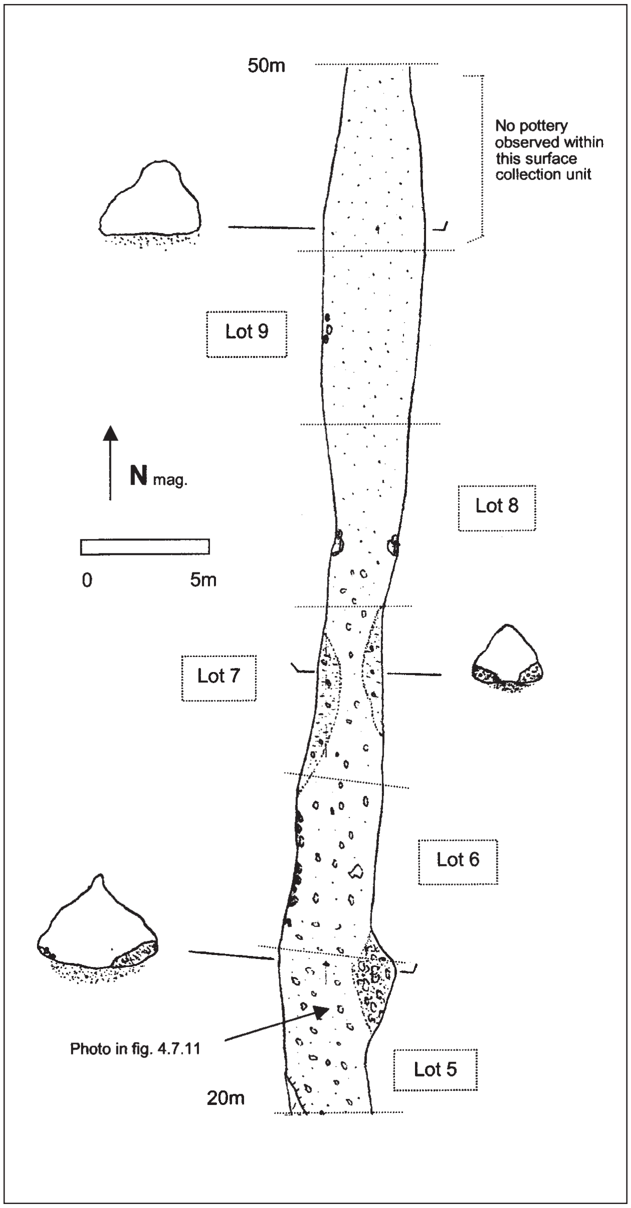


Figure 4.7.4. Actun Pech, Operation 2.

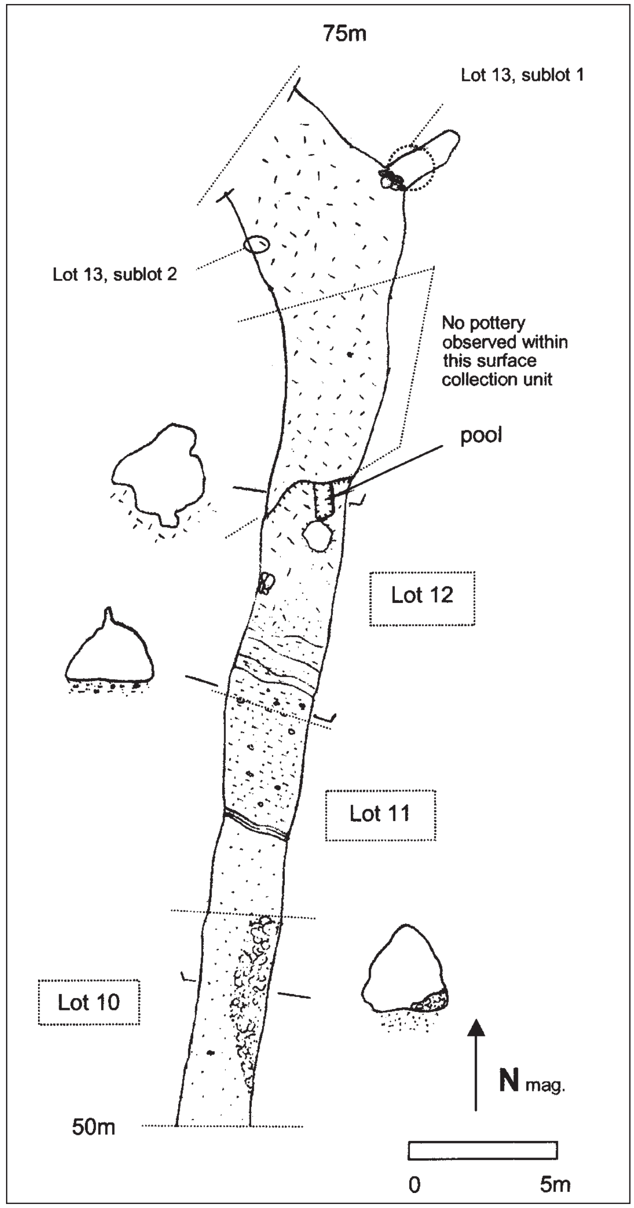


Figure 4.7.5. Actun Pech, Operation 3.

rises above the flat surface of the tunnel at the 57 m mark. Whether or not this feature is natural or was culturally modified is difficult to determine. What is certain is that it functions as a dam, which both interrupts the flow of rainwater into the cave and allows the backed-up, sediment-laded water to contribute to the accretion of soft, well-sorted soils to the south of it. The base of this dam is slightly undercut in a manner consistent with the abrupt change in water flow. I would imagine that the shallow pool of muddy water that develops between 35–57 m during heavy rain quickly drains through the cave floor and into the bedrock.

Past the dam, the floor of the tunnel is bedrock and no soil is present. The tiny pool is located at the beginning of this section (65 m into the tunnel). When observed, the pool—though always bearing water—never measured more than 60 cm long, 35 cm wide and 30 cm deep (see photo in figure 4.7.9). However, the rectangular bedrock pit in which the water is found is slightly larger and deeper. Periodically higher water levels (than those observed) are marked by the presence of evaporates around the pool and at points at least 40 cm above the recorded water level. That fact that the pool resides behind the dam and that no soil is present both within and around it, suggest that the water in the pool is not the result of residual rainwater but rather marks the current water table. I suspect that during the time of its most frequent use (the Middle to Late Preclassic), the pool would only bear water during the rainy season when the water table

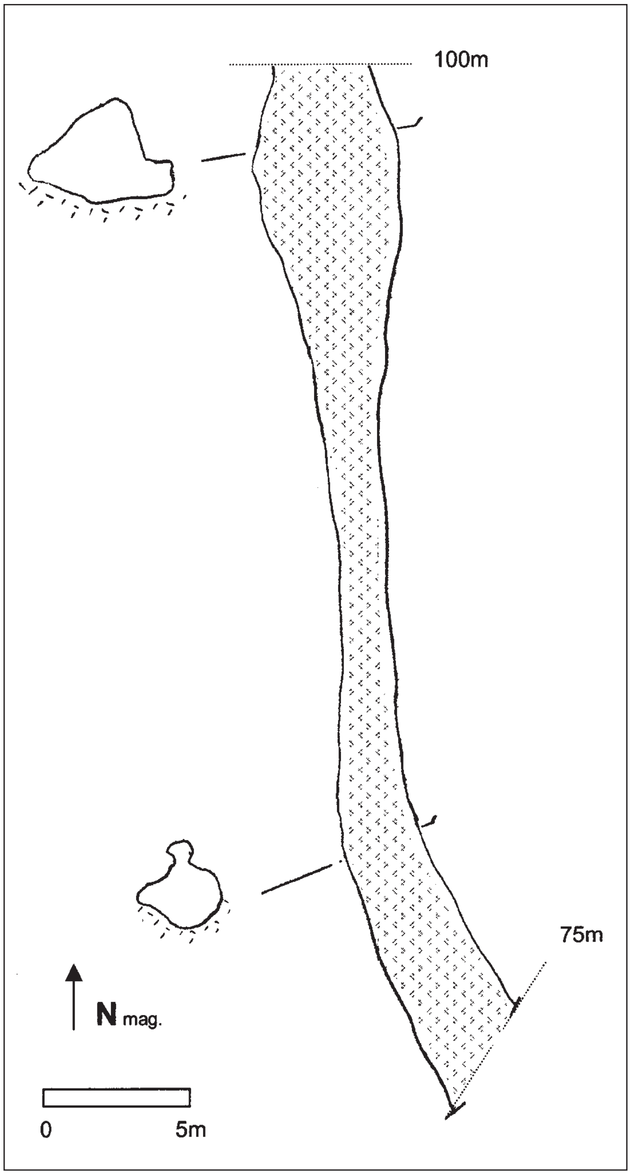


Figure 4.7.6. Actun Pech, Operation 4. No pottery observed.

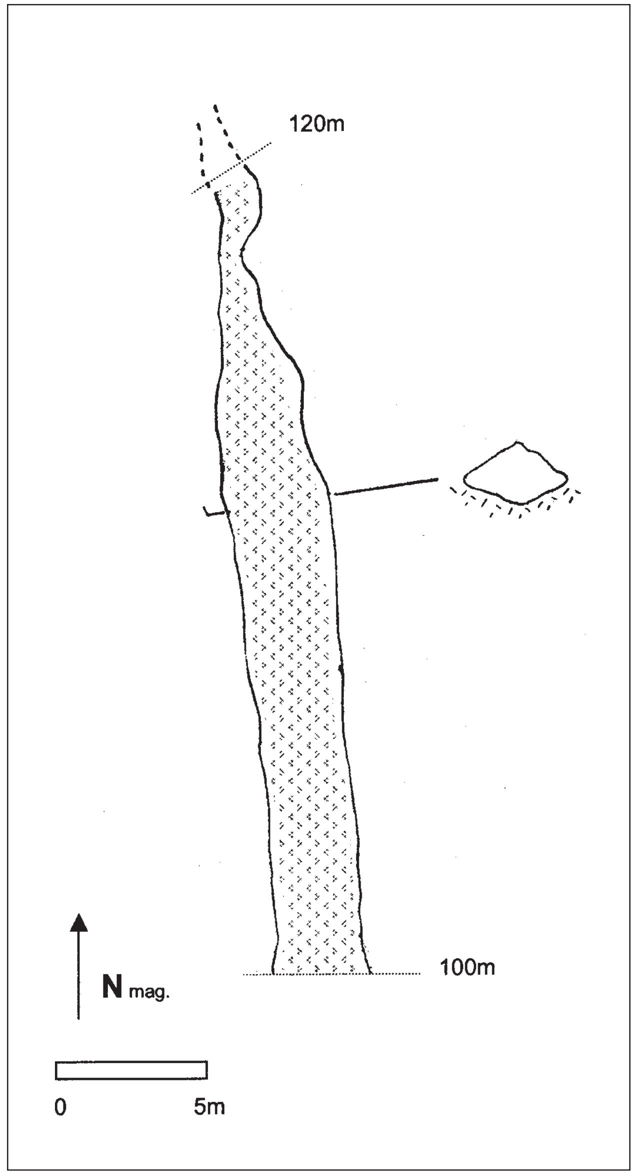


Figure 4.7.7. Actun Pech, Operation 5. No pottery observed.

would periodically rise.

Beyond the pool, the tunnel rises in elevation slightly and the floor is characterized by dry bedrock. The only cultural materials observed beyond the pool were two sherd clusters, which are discussed in the following section (see also figure 4.7.5. for lot locations). After a slight turn to the west, the tunnel continues north for an additional 55 m before the passage constricts and becomes impassable.

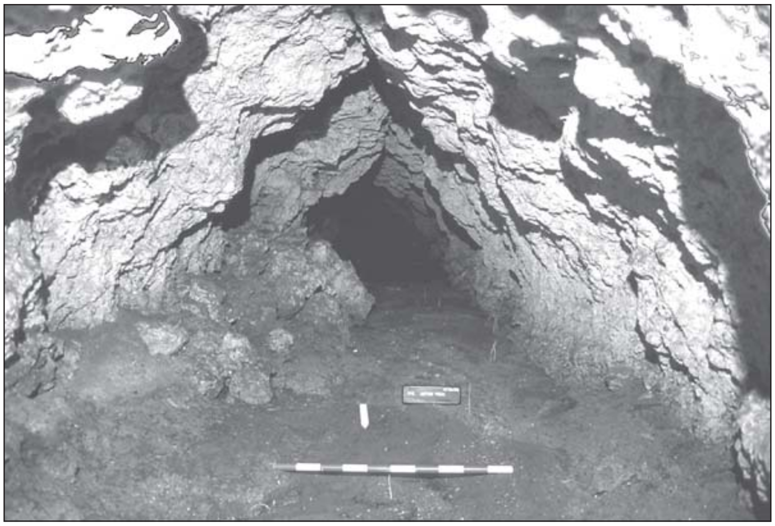
Lot Descriptions

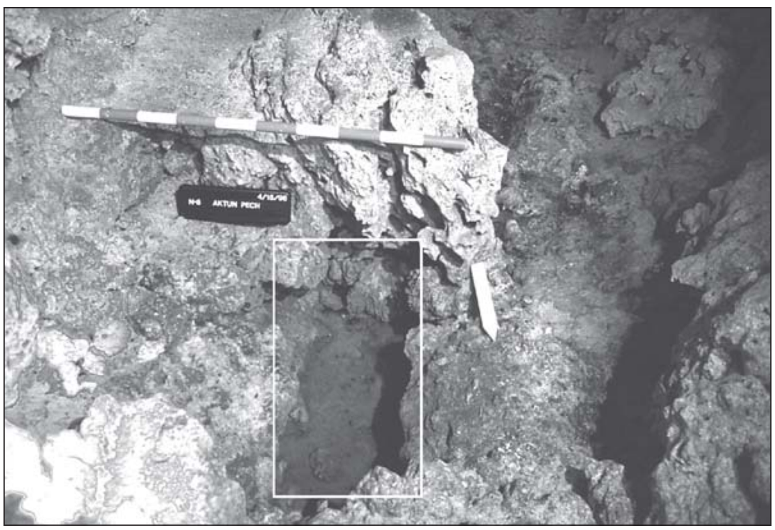
A complete tabulation of the pottery recovered from Actun Pech is presented in table 4.7.1. No material was observed on the floor of either the cave entrance or the entrance antechamber. The tunnel, which was scattered with sherds, was arbitrarily divided into 5 m-long surface collection units. Lots 1–3 were generally homogenous with respect to sherd condition. Sherd erosion consistent with tumbling (in water) is common on the smaller sherds and is marked by rounded/polished edges and slip loss. Two large Dzilam Verde sherds recovered from the sides of the tunnel retained their glossy slips and rough, non-eroded edges. It is interesting to note that the tumbled sherds from Actun Toh are rounder and smoother to the touch. This is likely due to the fact that they were located on a steep slope (where faster moving, sediment-laden water had a polishing effect). Most of the material from lots 1–3 consisted of Sierra group pottery, with lesser amounts of Middle Preclassic and Protoclassic material. Additionally, two bone fragments were collected (see Chapter 6.2).

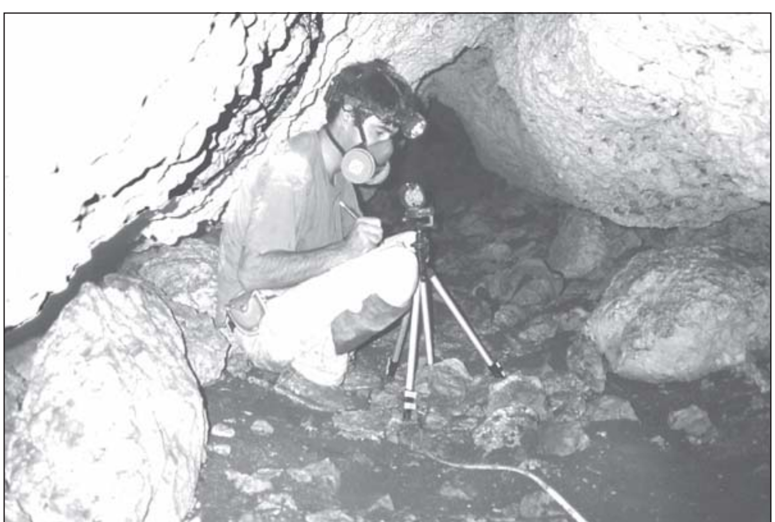
The dry, elevated bedrock shelves protected a number of sherds in lot 4, including an olla rim measuring 8×14cm. As one would expect, the sherds recovered from the narrow slot between the shelves were heavily eroded. The second greatest concentration of sherds was found in lot 5. Most of the large, well preserved sherds were recovered from the shelf (that extends into lot 4) and the mound pictured in figure 4.7.11. Among these are 10×12 cm Sierra Red olla rim and a 14 cm-wide Huachinango Bichrome Incised base.

Lot 6, which covered a relatively flat section of tunnel, was characterized by a higher percentage of small, eroded sherds. However, a Dzudzuquil Cream-to-buff bowl was partially reconstructed from these sherds. The debris piles in lot 7 revealed the highest sherd count. Many of the sherds were slightly eroded which leads me to believe that they rested for some time on the floor of the tunnel and were later piled to the side. Among the well-preserved sherds was a Carolina Bichrome Incised rim with a thick cream slip. The flat sections of lots 8 and 9 revealed small, eroded sherds and one bone fragment, while the 5 m-long section between lots 9 and 10 produced no material at all.

Lot 10 is particularly interesting. All of the sherds identified within this 5 m section were located atop a debris pile along the eastern wall of the tunnel. Only 39 sherds were recovered but nearly all of them were large and very well preserved. Two large Carolina Bichrome Incised sherds were collected. Both were from the







Top: Figure 4.7.8. Actun Pech tunnel looking south from 60 m into the cave. Note the artificial debris pile on the left.

Middle: Figure 4.7.9. Pool in Actun Pech.

Top: Figure 4.7.10. Actun Pech tunnel looking south from 13 m into the cave. Note large stones pushed to the sides of the tunnel. Location is indicated on map in figure 4.7.3. (Photo by Jane Prendergast.)

TYPE: VARIETY LOT	N6O2-1	N6O2-2	N6O2-3	N6O2-4	N6O2-5	N6O2-6	N6O2-7	N6O2-8	N6O2-9	N6O2-10	N6O2-11	N6O2-12	N6O3-1	N6O3-2	Total
Achiote Unslipped: Sabán			1		1	1	1	14				1	34		53
Chunhinta Black: Ucú		1													1
Joventud Red: Nolo						4									4
Dzudzuquil Cream-to-buff: Dzudzuquil	1		1	15	3	5	4		1						30
Kuche Incised: Kuche					2										2
Maján Red-on-cream-to-buff: Maján				6	4										10
Tumben Incised: Tumben				1											1
Kin Orange-red: Kin	1			3	12										16
Kin Orange-red: Fluted				1	3										4
Tancah Burdo: Tancah					2			1							3
Chancenote Striated: Chiquilá			4	3	1				6					17	31
Sierra Red: Clear Slip		1		9	22	15	22	8		10	2	12			101
Sierra Red: Unspecified	15	4	13	2	4					3					41
Laguna Verde Inciso: Clear Slip	3	3	1	4	6	7	5	2	2			14			47
Alta Mira Fluted: Alta Mira					1										1
Lagartos Punctated: Lagartos					1										1
Sierra Red: Straited-interior (Sierra)	1														1
Tipikal Preslip-striated: Tipikal							1								1
Nolo Red: Nolo			1	2											3
Xanabá Red: Unspecified				1											1
Ucú Black: Unspecified						2									2
Dzilam Verde Incised: Dzilam	2	1	6		3	3	2			2	1	3			23
Huachinango Bichrome Incised: Huachinango					1	1	1		2						5
Carolina Bichrome Incised: Carolina	1	3	5	4	11	18	36	2	3	7	4	18		14	126
Sabán Burdo: Sabán							3			7					10
Sabán Burdo: Becoob		2			2	2									6
Cetelac Fiber-tempered: Cetelac		2													2
Unidentifiable	6		9	5	8	21	40	30	2	5		28	7	21	182
Total	30	17	41	56	87	79	115	57	16	34	7	76	41	52	**708**

Table 4.7.1. Actun Pech ceramic collection.

same vessel yet one was encased in calcite while the other was in perfect condition. This is typical of cave contexts where fragments of broken vessels are exposed to different microenvironments and erroneously appear to represent different depositional episodes. Additionally, faunal material was recovered.

Lot 11, which covers most of the dam feature, is quite sparse. Not surprisingly, lot 12, which was protected from moving water, produced exceptionally well preserved sherds. By coincidence, the boundary between lots 12 and 13 fell on a natural break in slope along the northern edge of the pool. As mentioned above, the only material observed north of the pool included two ceramic clusters. The first consisted of sherds from a single, cached Achiote Unslipped vessel. This vessel was placed in a small niche, which was partially sealed by a pile of stones. Surprisingly, only 20% of the vessel was present suggesting that it was introduced to the cave as a partial or broken vessel. The cluster on the opposite side of the tunnel included sherds from two incomplete ollas (one Chancenote Striated and the other Carolina Bichrome Incised).

No whole vessels were recovered from Actun Pech. However, partially reconstructed vessels suggest that they were introduced into the cave whole, rather than as sherds. One might expect an assemblage consisting of almost entirely of ollas, given the apparent singular function of the cave as a water collection site. In actuality, cajetes and tecomates were well represented. Although the tunnel offers little room for offertory activities, seemingly impractical vessels such as the small Dzudzuquil Cream-to-buff bowl, as well as specialized vessels, such as a spouted Maján Red-on-cream-to-buff olla, could have been placed along the sides of the passageway or ritually broken inside the cave. The best evidence for offertory caching is found in the lot 13 clusters mentioned above.

Discussion and Closing Remarks

An initial reconnaissance of the area surrounding Actun Pech revealed the presence of a number of structures. Of particular interest are a low platform located approximately 20 m north of the cave entrance and a

Figure 4.7.11. Actun Pech tunnel looking northeast from 23 m into the cave. Note artificial mound of rocks, soil, and sherds. Location is indicated on map in figure 4.7.4. (Photo by Kurt R. Heidelberg.)

small pyramidal structure located an additional 80 m or so in the same direction. This arrangement appears to place the buildings over the tunnel as it extends 120 m to the north. Unfortunately, the significance of this intentional positioning was not realized in the field and therefore more specific information and detailed measurements were not recorded. Nevertheless, given the absence of other structures in the immediate vicinity, it is reasonable to assume that these particular structures mark the cave as a place of some importance.

Two wells associated with a small site 500 m to northwest of Actun Pech confirm the specialized nature the cave. The site consists of a dense cluster of megalithic residential platforms. The first well (W/N-4) is located in the midst of these structures. The second (W/N-3) is found 100 m to the west. This well is most certainly ancient as evidenced by a recessed collar of well-dressed blocks. A local guide informed me that the well as always been in use by *ejidatarios* from Naranjal and contains water year-round. The water level (when recorded) was 13.4m below the ground surface. This is consistent with the subsurface depth of the pool in Actun Pech, further suggesting that the cave's tiny pool does in fact mark the water table. More importantly, it begs the question of why someone would venture into an inaccessible cave for the purpose of collecting drinking water from a remote pool, when serviceable wells exist in the area and are located closest to the densest settlement. The physical morphology of Actun Pech and the cave's larger cultural context provide evidence par excellence for the specialized appropriation of watery caves in the Yalahau region. This pattern is discussed in more detail in the final chapter of the dissertation.

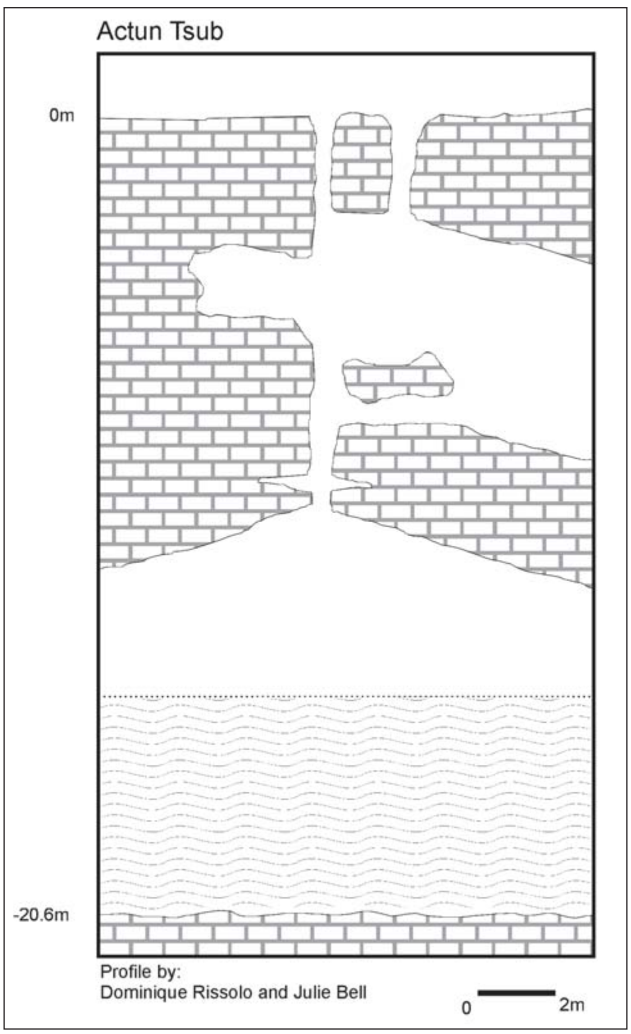


Figure 4.8.1. Profile of well area in Actun Tsub.

4.8: ACTUN TSUB

Actun Tsub ("cave of the agouti") is the closest known cave to the site center of El Naranjal. The cave is located 500 m northeast of the main architectural core of the site and 163 m south of Structure 22 (which is a large elite residential platform). The cave was first visited in 1996. The following year I returned with Julie Bell to produce a profile of the cave pool. During the same trip, Ms. Bell conducted a snorkel survey of the pool but no material was observed. A second attempt was made by Kurt R. Heidelberg in 1998, with the same result. The main pool is 4–5 m deep and is connected to a submerged cavern system.

Description

The cave is a roughly circular collapse dome averaging approximately 30 m in diameter. In the center of the cave are prominent stalagmitic and stalactitic formations. Steep, natural slopes drop down into deep pools around the cave's periphery. The cave has two vertical entrances. The first (to the right in figure 4.8.1) appears to be entirely natural and provides access into the main chamber of the cave. The second entrance is used as a well and currently has a masonry collar and windlass.

A bucket lowered from this secondary entrance would pass through the main chamber of the cave, through a narrow shaft in the cave floor and finally emerge in a large water-filled chamber below. The water level was 15.2 m below the ground surface when recorded. It appears as if the ancient Maya augmented what was probably an incipient aperture in the cave floor to facilitate a rope and bucket retrieval method from above (see photos in figures 4.8.2 and 4.8.3). It is also possible that the secondary entrance

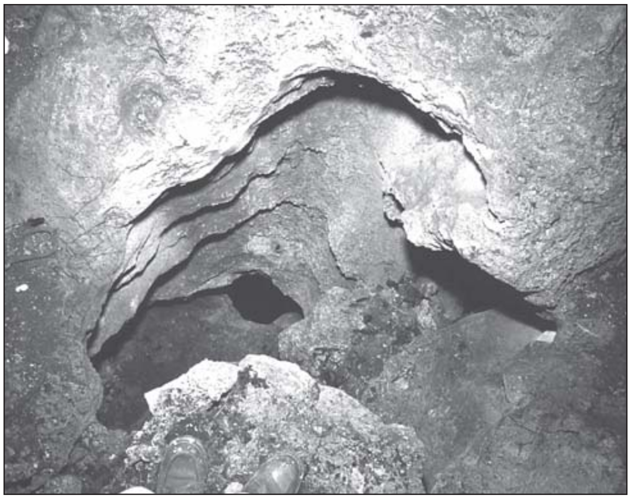


Figure 4.8.2. Actun Tsub. Artificially widened shaft leading to pool below.

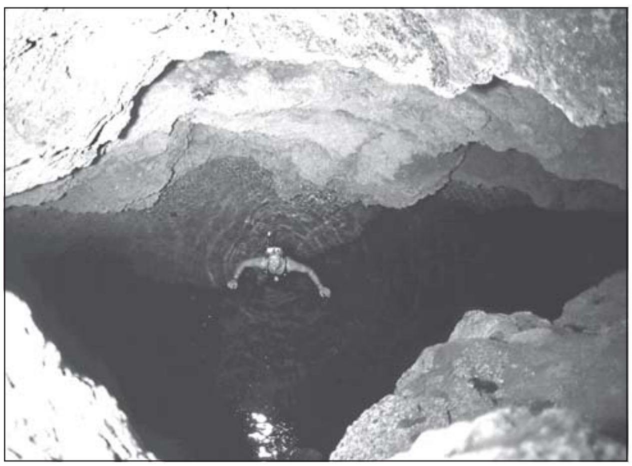


Figure 4.8.3. Pool in Actun Tsub.

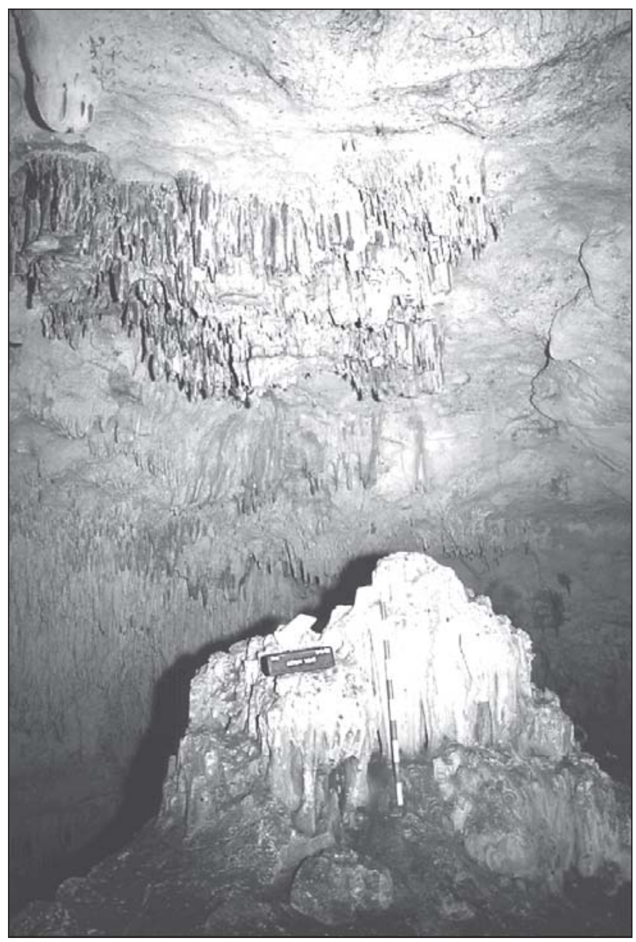
was artificially created after ancient visitors to the cave realized that water could be drawn from the surface with little effort (once a well shaft has been excavated). This would provide an alternative to descending the into the cave by ladder (through the primary entrance) and walking down to the edge of one of the cave's other pools or standing on the edge of the shaft in the cave floor and drawing water with a rope and bucket. Regardless of intent, the lower shaft (as seen in figure 4.8.2) exhibits clear evidence of artificial widening.

Unlike other water-bearing caves in the survey, Actun Tsub contains no offerings or architectural features. However, speleothem breakage and removal was more intensively practiced than in other caves in the region. The countless stumps across the ceiling and floor indicate that the cave was once rich in speleothems, though it is now almost completely denuded. Stalactites once hanging from the cluster in the center of the cave have all been removed (figure 4.8.4). The area shown in figure 4.8.5 has been stripped of speleothems and short soda straws currently grow from the stumps of those stalactites that were broken off.

Stalactites hanging from portions of the ceiling as high as 3 m above the cave floor were also removed. Rarely did these exceed 10 cm in diameter, and could have been knocked off with the aid of a long, hardwood pole. In areas where the ceiling was lower, stalactites as wide as 45 cm were detached. With respect to speleothem removal, there did not appear to be a distinction between those areas near the entrance and those areas along the cave's periphery.

A one hundred percent surface collection of the cave was conducted and only three sherds were recovered (see table 4.8.1). All were Early Classic in date and found near the entrance area. As mentioned above, the bottom of the main pool and the bottoms of the two other pools were also surveyed. We expected to find broken vessels on the bottom of the pool at the point beneath the well shaft, but it is possible that they lie beneath a thick layer of silt.

Figure 4.8.4. Evidence of stalactite breakage in Actun Tsub, central formation.



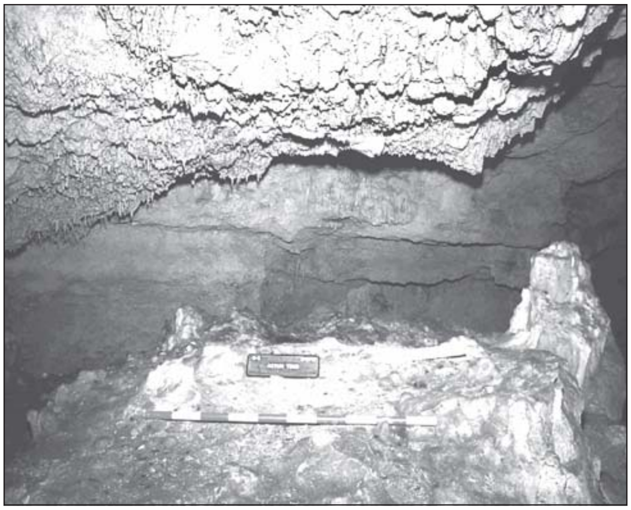


Figure 4.8.5. Evidence of stalactite breakage in Actun Tsub.

TYPE: VARIETY LOT	N8-S	Total
Sabán Burdo: Sabán	1	1
Timucuy Orange Polychrome: Timucuy	2	2
Total	3	**3**

Table 4.8.1. Actun Tsub ceramic collection.

Discussion and Closing Remarks

The lack of ceramics in Actun Tsub is, in and of itself, truly remarkable considering evidence of frequent and intensive use. A case can be made for the recent looting of whole or nearly whole vessels. However, it is highly unlikely that individual sherds would be removed to such a degree as to leave a cave essentially sherd-free.

In many ways Actun Tsub appears to be categorically different from other caves in the survey with respect to water collection. Nevertheless, it may still have retained the qualities of controlled or restricted sacred space. It is possible that water was regularly drawn from the mouth of the well for quotidian purposes. This practice may have been separate from trips made into the cave for the collection of water for ritual purposes. This distinction between accessing cave water from outside a cave versus collecting it from inside the cave itself appears to have been present among the ancient Maya. Ethnographic references to this distinction are discussed in the final chapter of the dissertation. Given the nature of speleothem breakage and removal in Actun Tsub (and the lack of other cultural features), it is possible that this particular cave was assigned a specialized function.

4.9: ACTUN HALEB

Actun Haleb ("cave of the *tepezcuintle*") is located 4.5 km southeast of El Naranjal. The cave was visited only once (in 1995) and was not selected for more detailed investigation. The interior of Actun Haleb can be described as a single, moderately large circular chamber (approximately 30 m in diameter and 4 m high), with a narrow passageway leading down to a small, low-ceiling room below. The cave is accessed via a small hole at the bottom of a doline or shallow depression. Leading downward from the entrance and into the cave interior is a slope consisting of collapse debris.

A poorly preserved wall of roughly dressed blocks, located at the top of the slope, is responsible for the small entrance portal and may be the result of a deliberate attempt to restrict access to the cave. Additionally, a simple terrace riser is discernible at the base of the slope. East of the entrance slope is a flat area created by a single course of stones and fill material. A second such feature nearby creates a similarly leveled area on the otherwise sloping cave floor.

A crude stairway (the treads of which are barely visible) leads from the base of the entrance slope, through an apparently modified notch, and into a small room below. This room is dry and there is no visible indication of seasonal or periodic accumulation of water. Moreover, two local guides who visit the cave infrequently while hunting *tepezcuintle* mentioned that they have never seen standing water in the cave. However, it is important to note that live stalactites are found throughout the cave. Many of the larger speleothems have been broken and removed.

The cave contains a light scattering of sherds. Early types such as Tancah Burdo and Sierra Red are present. Several sherds have been thrown into natural niches in the cave walls. No pottery was observed in the lower room. This is likely the result of the continual deposition of surface soils washed into the cave during heavy rains. As mentioned in Chapter 4.7, similar deposits of well-sorted soils concealed surface pottery in sections of Actun Pech. The floor of the lower room is approximately 8 m below the ground surface. I suspect that the water table is located considerably deeper in this area and therefore concluded that the soil deposit does not represent the infilling of a natural pool (as is the case in Actun Toh). The cave would therefore be considered dry and dripping stalactites would have provided the only source of water. It remains unclear why the stairway leads into the lower room. If it was used as an offertory area, then any vessels placed there were either removed or are concealed by the thick later of sediment.

A roughly pyramidal structure is located approximately 20 m north of the cave entrance. Though it does not appear as if the building is positioned over any portion of the cave below (since the cave entrance is located along the cave's northwestern periphery), it is nevertheless close enough to be directly associated with Actun Tsub. No wells or additional structures were observed in the immediate vicinity.

4.10: ACTUN BAC

Actun Bac ("cave of the bones") is located only 250 m from the center of San Juan de Dios. The cave was so named because the bones of a few dogs that had become trapped in the cave are present in the entrance area. The following description is the result of a brief visit to the cave.

The cave entrance, which measures approximately 3 m in diameter, is vertical in nature but the 2 m descent does not require the aid of a rope or ladder. Beneath the entrance is a natural bedrock and flowstone mound with a series of steps leading down to the flat, soil-covered floor of the cave. The main chamber of the cave is approximately 17 m in diameter. At the base of the stairway, a cleared path leads north to a seemingly featureless portion of the cave. An additional short set of stairs passes through an entryway and arrives at the edge of a 3 m-deep pothole. I did not descend into this pit, however it did not appear to contain any cultural material. Along the western wall of the cave is a deep niche with stones stacked in front of it. Several of the stones appear to have been pulled away, and if an offering was at one time concealed in the niche, it has since been removed.

Actun Bac contains a light scattering of sherds. Due to the cave's proximity to the community and its ease of access, it is not surprising that little cultural material was observed. Evidence of speleothem breakage and removal is present and nearly all of the cave's stalactites are missing. The lowest point of Actun Bac lies above the water table (as measured in San Juan de Dios). Therefore, water was not present in the cave, nor does it appear to ever accumulate.

4.11: ACTUN ZODZ

Actun Zodz ("cave of the bats") is located 3.2 km south of El Naranjal. The cave is essentially a single, dry, roughly dome-shaped chamber (see figures 4.11.1 and 4.11.2). The vertical entrance is rather wide and located towards the northern end of the cave. Beneath the entrance is a debris mound, which is largely obscured by a layer of forest litter. The mound appears to have been heavily modified and a number of well-dressed blocks were observed. Though little in the way of terracing has been preserved, the lower portion of the mound's slope is well defined. A *haltun* is located along the slope, but it is unclear if it was placed there (since no stalactite was observed above) or if it tumbled down from its original position beneath the entrance drip line.

The most notable feature of Actun Zodz is a prominent stalactite and the associated altar beneath it (see

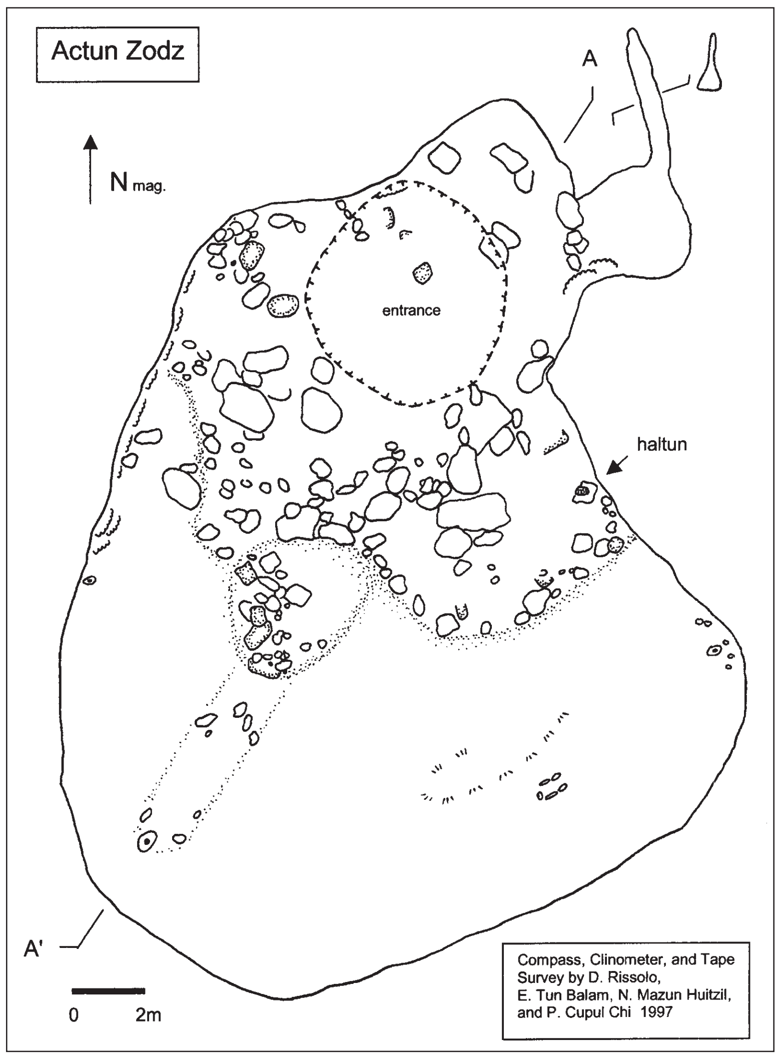


Figure 4.11.1. Map of Actun Zodz. (Stippled stones are dressed.)

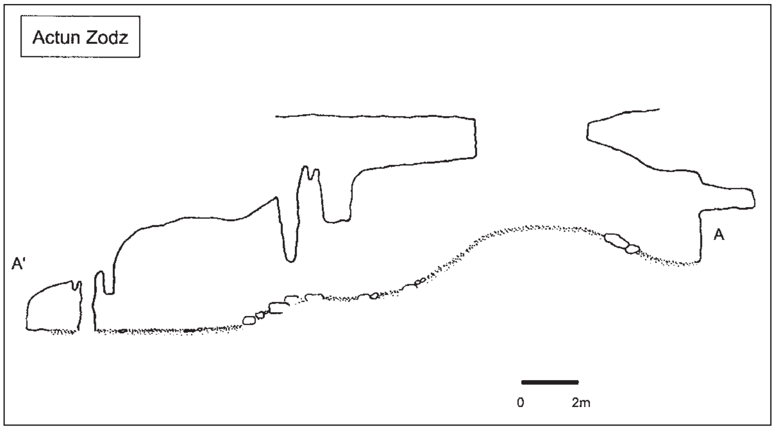
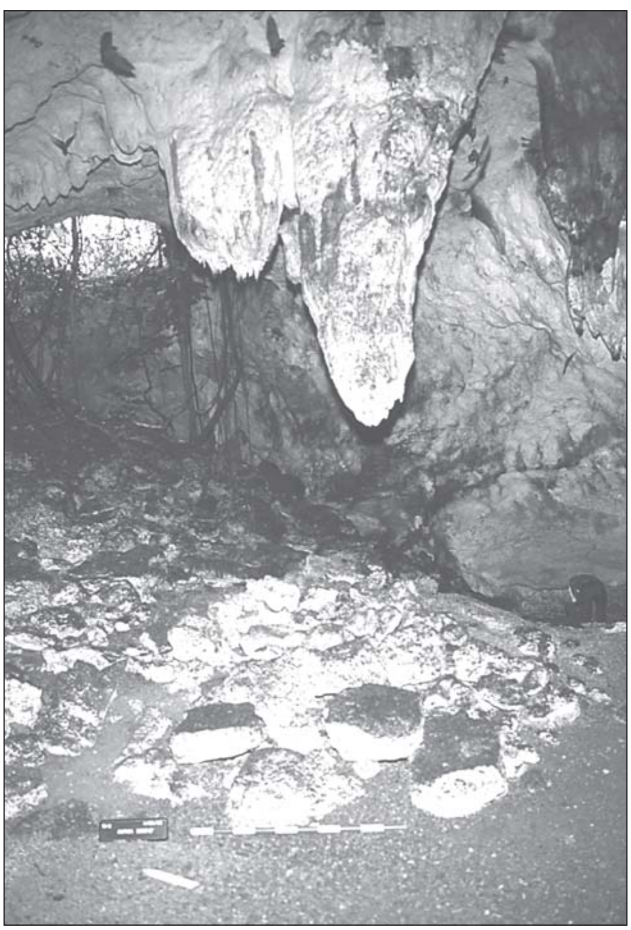


Figure 4.11.2. Profile of Actun Zodz.

figure 4.11.3). This grand speleothem essentially marks the center of the cave. The construction of such an altar strongly suggests that the Maya appropriated the stalactite both as a symbolic central axis and as a special font for drip water collection. Though other smaller stalactites exist in the cave, the central dripstone formation gives the impression of a giant funnel through which all water flows. The altar consists of at least five well-dressed megaliths. This feature is in an advanced state of disrepair and covered with bat guano. However, it appears as if the large facing stones concealed a loose rubble core.

Figure 4.11.3. Altar feature beneath prominent stalactite in Actun Zodz.



Leading southwest from the altar (and towards the back wall of the cave) is a slightly elevated causeway. It should be noted that a deep deposit of bat guano covers the flat floor of the cave. The soft layer of guano is over a meter deep and no doubt conceals much of the cave's archaeology. Nevertheless, a few of the paving stones are visible and the path's destination is evident. At the terminus of the path is a rather prominent dripstone column. The marking or linking of the cave's most commanding natural features appears to have been of primary importance in Actun Zodz. In terms of function (though certainly not in degree of implementation), the use of space the cave bears some resemblance to Balankanche.

Only one other feature was observed on the otherwise smooth cave floor. In the eastern portion of the cave, a small enclosure created by vertically placed stone slabs rests, more or less, atop the guano. The local men (with whom I mapped the cave) suggested that the feature was a more recent *tepezcuintle* trap. It is possible that such an animal could negotiate the entrance by climbing down fallen trees. Also, the relatively well-lit cave in some ways resembles the rock shelters where these stone features have been observed.

Due to the deep accumulation of bat guano, only a few sherds were observed. Although Actun Zodz was likely free of such deposits when it was in use by the ancient Maya, the present state of such caves raises the question of whether or not some caves were mined for their reserves of fertilizing guano. Even if such a practice was common, the presence and arrangement of natural and cultural features in Actun Zodz are evidence of its reverential appropriation.

4.12: CAVE SA-2 (UNNAMED)

This cave is located 1.2 km southwest of the community of San Antonio Nuevo and 3 km west of the site at San Cosme. The cave is essentially a single linear chamber, measuring roughly 10 m wide and 40 m in length. The cave's horizontal entrance is quite large and is located at the bottom of a shallow doline. A slope consisting of collapse debris leads from the entrance and into the cave. Unlike other caves in the survey, the entrance slope does not appear to have been modified in any way. Other than drip water, the cave is dry and is likely located well above the water table.

Other than a single sherd, the only evidence of cultural activity was speleothem breakage and removal. This practice was intensive and few speleothems (other than soda straws) remain intact. Stalactites were broken and removed from even the most inaccessible crawl spaces throughout the cave. Perhaps this cave enjoyed a similar highly specialized use as is suggested for Actun Tsub.

4.13: ACTUN KOXOL

Actun Koxol ("mosquito cave") is located 1.7 km southwest of the community of San Antonio Nuevo and approximately 300 m southwest of SA-2. The cave is essentially a 20–25 m deep, roughly horizontal alcove at the bottom of a very shallow doline. The ceiling of this low room is between 1–2 m high and only a meter or so beneath the ground surface. Not surprisingly, the cave is dry. Only one sherd was observed and although evidence of speleothem breakage and removal is present, the cave was probably never rich in stalactites and stalagmites.

Near the drip line of the alcove is a small enclosure consisting of flat, vertically set stones. A similar feature was observed in Actun Zodz and local *ejidatarios* claim that they are old *tepezcuintle* traps. Actun Koxol is among the least impressive caves in the survey and likely did not rank high among other caves in the area.

4.14: ACTUN XOOCH

Actun Xooch ("cave of the hen") is located approximately 1 km west of the community of San Juan de Dios. The cave is characterized by an alcove at the bottom of a large circular sinkhole and is the first of five rockshelters described in this chapter. A debris slope covers the eastern half of the sinkhole. This slope, which exhibits evidence of crude terracing, facilitates an easy descent to the bottom of the sinkhole. Along the western half of the sinkhole is a recessed semicircular alcove (approximately 25 m wide), that is sheltered by the sloping ceiling 10 m above.

A well-constructed terrace riser consisting of five courses of small, undressed stones marks the base of the entrance slope. A broad elevated causeway extends from the slope toward the back of the alcove. Here, the causeway connects with a low platform. This feature is 5 m wide (across the front) and extends back 4.5 m where it meets the alcove wall. Two steps, which

Figure 4.14.1. Actun Xooch, face pecked into stalagmitic formation.

consist of roughly dressed blocks, run the course of the platform's frontal portion. Directly above the center of the platform is a natural shaft through which daylight is visible. Soil and forest litter have washed down through this shaft and accumulated on the platform, obscuring what might be resting on its otherwise flat surface.

A number of censer fragments were recovered from the base of the offertory platform (see table 4.14.1 for an inventory of the ceramics and Chapter 5 for illustrations). Nearly all were from Late Postclassic Chen Mul Modeled effigy censers and included headdress and body elements as well as an ear flare. Three cacao pod elements were recovered. Two were solid while one stuccoed and painted pod was hollow. A small stuccoed long-nosed face was found as well. Also in the collection is a small bi-conical Cehac Painted cup, which probably at one time rested in the hand of a large Chaak effigy censer.

To the south of the platform is a simple face that was pecked into a dry stalagmitic formation (figure 4.14.1). It appears as if exfoliating layers of calcite where removed to create a hard, roughly circular area in which to peck the eyes and mouth. To the north of the platform are a series of four interconnected stone circles. They consist of loosely stacked stones and resemble bins or hoppers. These features range from

TYPE: VARIETY LOT	UNPROVENIENCED	Total
Teabo Red: Teabo	1	1
Chen Mul Modeled: Chen Mul	38	38
Cehac Painted: Cehac	1	1
Total	40	40

Table 4.14.1. Actun Xooch ceramic collection.

50–163 cm in diameter and 32–55 cm in height. Balanced atop one of the bins is a vertically positioned slab measuring 52×74 cm. Neither a local guide nor I could offer an explanation as to the function of these features.

The broad and well-lit alcove of Actun Xooch is the grandest and most significantly modified rockshelter in the survey. Though its constructions cannot yet be dated, there is little doubt that the cave was an important offertory site during the Postclassic. One can almost imagine the smoke from the censers rising up through the shaft above the platform and into the forest.

4.15: ACTUN OX

Actun Ox ("cave of the ramon trees") is a rockshelter site located 5.3 km south of El Naranjal and lies along the ejido boundary between Naranjal and San Cosme. The alcove is found along the southwestern periphery of a broad, shallow sinkhole (see figure 4.15.1). The sinkhole measures 50 m in diameter, a maximum of 5 m deep, and is filled with dense vegetation and collapse debris.

At its deepest point, the alcove is recessed 8 m into the lower wall of the sinkhole. The floor of the alcove is flat, dry, and covered with a thick layer of forest litter and bat guano. Immediately noticeable is a prominent dripstone column. Two low, crude, drystone walls form a triangular enclosure between the column and the cave wall (see photo in figure 4.15.2). Probing into the floor revealed a second buried course of stones. The purpose of such a feature is unclear; however, Mercer (1895) identified similar constructions as bird hunting blinds. To the north of this enclosure is an additional wall that appears to restrict access to a smaller alcove.

There were no live speleothems observed in Actun Ox. Other than the column, dripstone formations appear to have always been quite rare in this rockshelter. This might explain the absence of *haltunes*. Only a few sherds were observed within the alcove but it is quite probable that more can be found beneath the deep layer of debris and guano covering the floor.

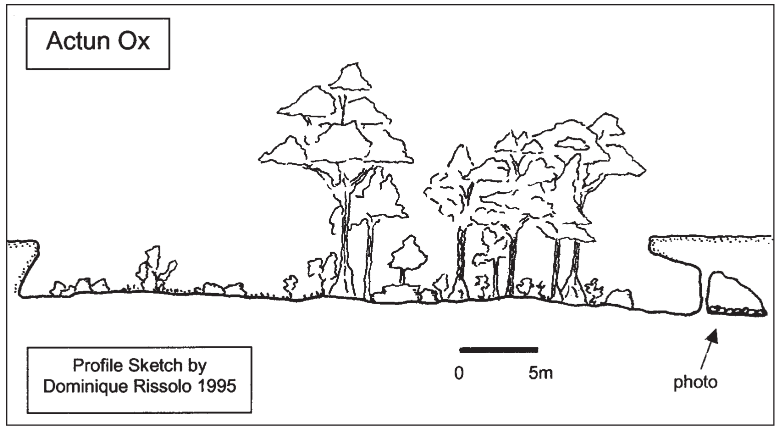


Figure 4.15.1. Profile of Actun Ox.

4.16: ACTUN MAAS

Actun Maas ("cave of the cricket") is a rockshelter site located 2.7 km southeast of El Naranjal. It is the only such rockshelter in the survey to be fully mapped and completely surveyed for surface collection. During the initial investigation in 1996, the largest alcove was mapped and collected. The following season, I returned with a local guide in order to produce a map of the entire sinkhole.

Description

The three alcoves of Actun Maas are located along the bottom of a dry sinkhole, which measures 16 m at its widest point (see figure 4.16.1). The floor of the sinkhole is easily accessed via a gentle slope leading down from its southern half. The largest and deepest alcove (Operation 1) is found along the sinkhole's northern edge (see figure 4.16.2). It is in this alcove where evidence of cultural activity was concentrated. The most prominent natural feature is a hanging

Figure 4.15.2. Walled enclosure in Actun Ox.

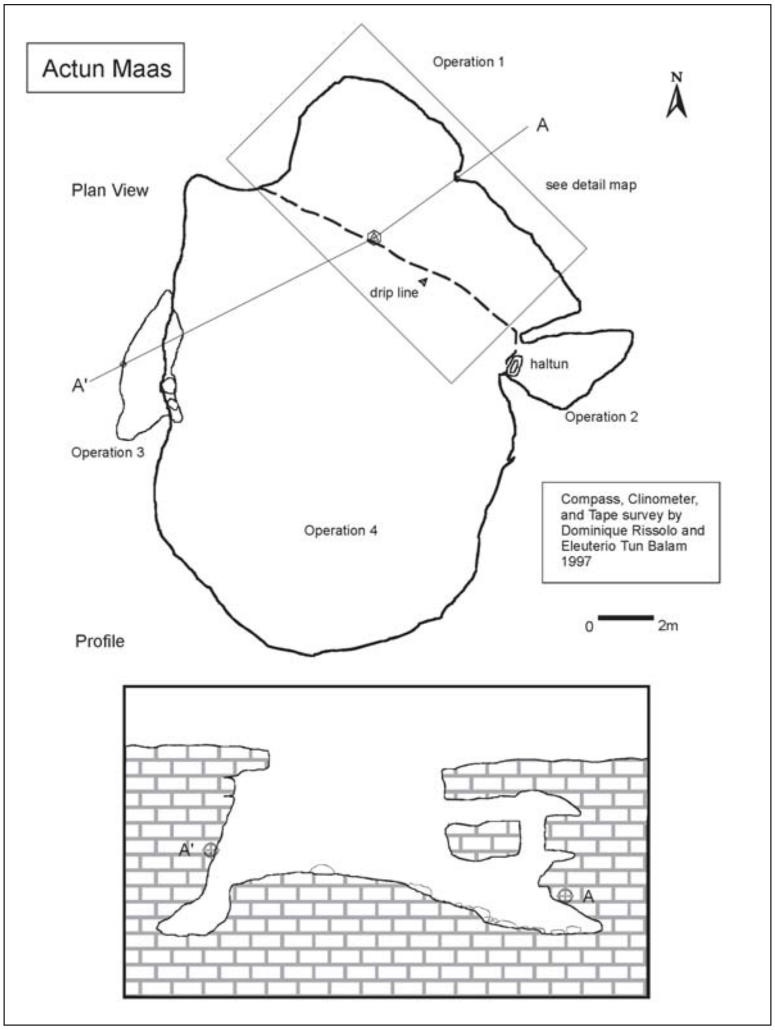


Figure 4.16.1. Map and profile of Actun Maas.

flowstone formation. Beneath this formation and against the back wall of the alcove is an artificial pavement of stones that encircle a small cleared area. Directly above the flowstone formation is a natural chimney-like shaft that turns 90 degrees and exits at a point along the wall of the sinkhole above the alcove's drip line (see profile in figure 4.16.1). Additionally, a narrow horizontal niche extends into the alcove wall directly behind the flowstone formation. A substantial dry-stone wall partly encloses the alcove. The ceramic deposits found within the alcove are discussed below.

To the southeast of the Operation 1 is a smaller alcove (Operation 2). Here, a *haltun* was positioned beneath the drip line. The floor of the small chamber was thoroughly survey but no pottery was observed. Similarly, the small alcove (Operation 3) located across the sinkhole was devoid of any cultural material.

Lot Descriptions

A total of eight sherd clusters or concentrations were point-plotted and collected in the main alcove (see figure 4.16.2). All appear to be associated with the flowstone formation and the possible offertory feature located beneath it. The remaining sherds scattered across the floor were assigned to arbitrary lots, which were measured radially (in 1 m intervals) from the offertory feature. Though the alcove floor is essentially free of soil and forest litter, it is possible that a number of sherds were obscured by the layer of loose rubble and were therefore overlooked. All the material collected is tabulated in table 4.16.1.

Clusters E, F, G, and H consist almost entirely of Chen Mul Modeled effigy censer fragments (see chapter 5 for illustrations). Partial reconstructions suggest that the collection represents at least one, but possibly two, censers. Censer elements and components include an ear spool, triangular appendages, a complete intermediate base, and a nearly complete pedestal base. An isolated rim sherd found near cluster F likely belonged to the same censer(s). Similarly, the five sherds in cluster H form the rim-to-basal-break of the same censer(s) and may correspond to the isolated rim sherd. The large rim section from cluster H is interesting in that a thick layer of carbonized material (perhaps copal residue) is adhered to the interior surface. The exterior exhibits areas of well-preserved stucco and blue pigment (as does the ear spool). Entirely absent is the effigy

TYPE: VARIETY LOT	N7O1-1	N7O1-1/1	N7O1-2	N7O1-2/1	N7O1-2/2	N7O1-3	N7O1-3/1	N7O1-3/2	N7O1-3/3	N7O1-3/4	N7O1-4/1	N7O1-4/2	N7O1-5	Total
Chancenote Striated: Chiquilá	2	2	10		2	1						1	2	20
Sierra Red: Clear Slip								1	1					2
Sapote Striated: Sapote							1					1		2
Saban Burdo: Saban		6	3			5	2							16
Saban Burdo: Becoob		1												1
Dos Arroyos Orange Polychrome: Dos Arroyos		1												1
Yaxuná Striated-preslate: Yaxuná				2	1									3
Tekax Black-on-red: Tekax							1							1
Chen Mul Modeled: Chen Mul			1			1		1	24	5	5			37
Unidentifiable	1	1		1	2	6		1	35					47
Total	3	11	14	3	5	13	4	3	60	5	5	2	2	130

Table 4.16.1. Actun Maas ceramic collection.

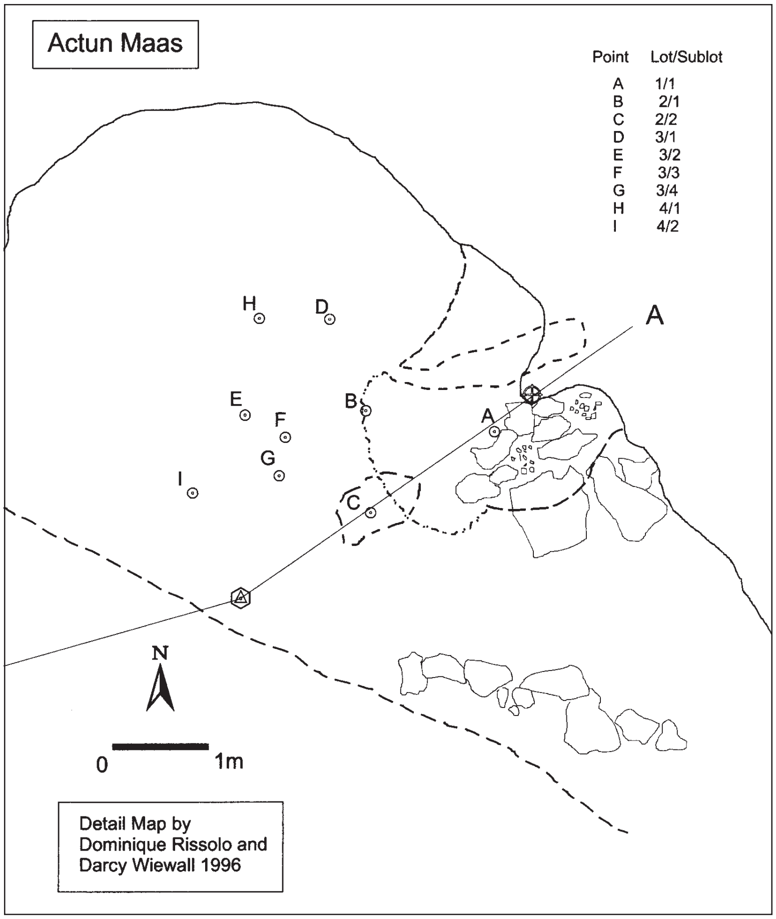


Figure 4.16.2. Detail map of Actun Maas.

itself. It is conceivable that the figure was removed from the alcove in the recent past. This would also explain why the pedestal base was incomplete, since the portion of the base to which the figure's legs were attached was removed with the rest of the body.

Earlier ceramic material was recovered from the alcove as well. Such types include Late Preclassic Chancenote Striated and Late Classic to Terminal Classic Yaxuná Striated-preslate and Tekax Black-on-red. Cluster A was the only significant concentration of non-Chen Mul Modeled sherds and was located adjacent to the offertory feature.

Discussion and Closing Remarks

The ceremonial function of Actun Maas is clearly indicated by the presence of censers, and the alcove likely served as an offertory site as early as the Late Preclassic. As is the case in Actun Zodz, a prominent cave formation was the focus in this otherwise dry rockshelter. This formation is culturally marked not only by the stone feature beneath it, but also by the vessels that were at one time placed around it. Perhaps the natural shaft above the flowstone formation intrigued ancient visitors to the cave. The smoke of censers placed beneath it could have risen up into the shaft and emerged outside the alcove, creating a unique spectacle. As in Actun Zodz and Actun Xux (described below) *haltunes* were used to collect drip water which was valued for its pure and sacred qualities.

4.17: ACTUN XUX

Actun Xux ("cave of the wasps") is a rockshelter located approximately 1 km south of the community of Ignacio Zaragoza. A crude stairway leads down to the floor of an 11 m-wide shallow doline or sinkhole, which contains alcoves along its eastern periphery (see figure 4.17.1). Evidence of minor terracing is also present across the entrance slope. The deepest alcove extends 3 m into the wall of the sinkhole. Here, two *haltunes* were placed beneath the drip line (figure 4.17.2). One of these receptacles has a low stalagmitic formation that corresponds to a cluster of stalactite stumps and soda straws above. A large drapery or cluster of stalactites appears to have been originally located above the *haltunes* as well but has since been broken off.

A 4 m-deep vertical shaft, which is surrounded by a crude collar of stones, punctuates the floor of the main alcove. Two, roughly horizontal passages extend from the bottom of the shaft. This portion of Actun Xux was not explored since I did not have the proper gear on hand during my brief visit to the site.

Along the back wall of the main alcove is a pile of stones. The majority of these stones have remained in place for some time owing to their thick coating of algae. Other stones are bright white and appear to have been placed there recently. A local guide speculated that someone might have attempted to reshape the pile into a *tepezcuintle* trap. A similar activity took place within a shallow alcove along the northern portion of the sinkhole. Here, a low dry-stone wall extends 2 m to the back of the alcove. Adjacent to this features is a large, almost hallow, dome-shaped pile of stones and an additional low wall. All three features contain more recent additions of large undressed blocks of stone. Although the original function of these stone features is unclear, local *ejidatarios* could offer no other explanation other than traps. A low circle of stones was also observed in this small alcove, but did not appear to have been altered in any way.

Actun Xux was no doubt a favorable (albeit limited) speleothem collection site in the past. Countless stumps of small stalactites are visible across the ceiling. Only a few sherds were observed on the cave floor. Many are no doubt obscured by the accumulation of soil, forest litter, and bat guano that covers the majority of the alcove floor. As is the case with most rockshelter sites, their ease of access and illuminated environs facilitates casual looting.

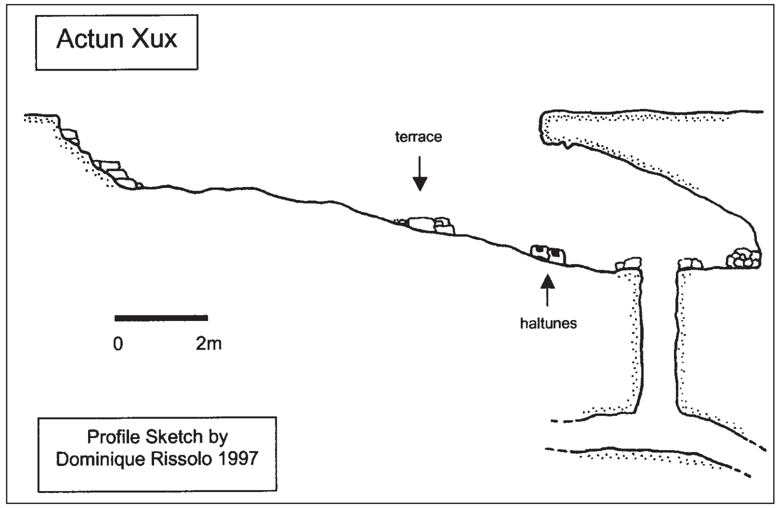


Figure 4.17.1. Profile of Actun Xux.

4.18: ACTUN NA IN-TATICH

Actun Na in-Tatich ("cave of the house of my grandfather") is a dry rockshelter site located 1.4 km southwest of the community of San Antonio Nuevo and 3 km west of the site of San Cosme. This cave closely resembles Actun Maas and Actun Xux in terms of morphology. However, a deep, continuous alcove encircles the entire periphery of the sinkhole. Access into the sinkhole requires the negotiation of a 3 m drop from the overhanging lip.

The mound beneath the entrance appears to have been modified and sections of retaining walls or terraces are visible under the vegetation and forest litter. In the western portion of the alcove is a recessed area, which is flanked by two, now-dry flowstone formations and vaguely demarcated by a line of stones. A tiny portal in the back wall of the alcove leads to an open yet inaccessible cavity. According to the local guides who accompanied me, this miniature "cave within a cave" is said to be the home of an *alux* (goblin).

Other than dry-stone masonry, no evidence of cultural activity was observed. Unfortunately, my visit to the cave was brief and I did not have the opportunity to conduct a more detailed investigation. The surfaces of such rockshelters are often obscured and only by clearing them of vegetation and debris can one obtain a more complete picture of the archaeology.

Figure 4.17.2. Haltunes *in Actun Xux.*

4.19: CAVE N-3 (UNNAMED)

This tiny cave is located 40–50 m west of Actun Zodz. It is essentially a dry, roughly circular rockshelter measuring 3 m in diameter and 1.5 m from floor to ceiling. The broad, arching entrance provides

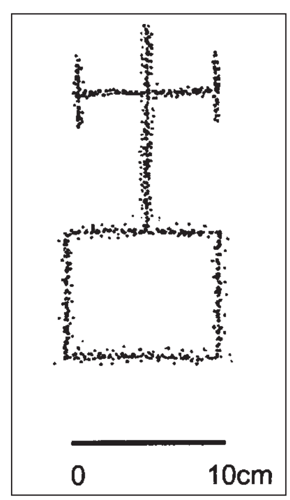


Figure 4.19.1. Sketch of cross image from N-3 Cave.

easy, horizontal access to the flat cave floor. A cross was engraved on the smooth surface of a calcite encrusted bedrock mound inside the cave (figure 4.19.1) and was the only evidence of cultural activity observed. This Christian-style cross may have marked the small cave as an offertory site sometime between the Colonial period and the present. Although no live speleothems were observed, the cave could have been used for drip water collection, much like Actun Zodz nearby.

4.20: CAVE SJ-4 (UNNAMED)

This extremely small cave, which is located .5 km east of the community of San Juan de Dios, almost did not merit inclusion in the survey. However, we must keep in mind that peoples throughout Mesoamerica have appropriated even the smallest of niches, alcoves, and tunnels. This cave is essentially a low, flat crawl space that extends horizontally from the bottom of a small solution feature (or sinkhole) in the bedrock.

Due to the nature of this confined space (which measures no more than 4 m long, 3 m wide, and 80 cm from floor to ceiling), one would not expect to find features or deposits characteristic of activities performed inside the cave itself. Nevertheless, the stumps of hundreds of small stalactites were observed on the ceiling. The cave also contains a relative abundance of pottery. However, it is difficult to determine whether or not the material was introduced to the cave during offertory activities or was simply dumped there by nearby ancient residents. Such tiny, seemingly unimpressive caves are enigmatic and merit further investigation.

CHAPTER 5

THE CERAMIC ANALYSIS

Introduction

The analysis of the ceramics recovered by the Yalahau Archaeological Cave Survey was a collaborative effort with José Manuel Ochoa Rodríquez, and was conducted at the Ceramoteca of Centro INAH Yucatán during summer 2000. A total of 5,474 sherds were collected, of which 3,710 were typed (23 were not typed while the remaining sherds were unidentifiable due to their small size and/or eroded condition). The analysis revealed the presence of 87 ceramic types (including unspecified and special sherds within identified groups), which are represented by 38 specified ceramic groups. Presence of these types (by cave) is indicated in table 5.1, in which the groups are generally arranged in chronological order. The quantitative tabulation of combined lots for all caves (by type and variety) is presented in table 5.2.

A more informative display of the chronological relationships between groups is provided in table 5.3. With the exception of three test excavations in Actun Toh, the pottery was recovered from surface collection units. Deeply stratified chronologically sensitive excavations have yet to be conducted in the Yalahau region. Therefore, in lieu of an established regional chronology, the temporal distribution of groups in table 5.3 is based on ceramic cross-dating, using identified (or suggested) chronological units assigned to the specific type collections referenced in this analysis. This strategy is provisional and will no doubt be substituted by regional complexes when they are established through future excavations.

The typology is presented in a modified version of the "short format" style used by Ball (1978:77). This efficient format, which will allow this chapter to best function as a reference for other ceramists, is primarily concerned with distinctions between the material being analyzed and corresponding material analyzed elsewhere. Readers new to Maya ceramic studies are encouraged to consult Gifford (1976:1–43) for a thorough explanation of the type:variety approach and methodology used in this analysis. It is important to note that the following typology represents the combined pottery of all caves included in the collection (even though all caves are considered distinct sites). Again, this organizational strategy resembles that used by Ball (1978). For individual lot locations and/or descriptions by cave, see Chapter 4 of the dissertation.

Each typological entry includes up to eleven possible fields. Provided below is a brief explanation of the fields both adopted and created for this typology. For a more comprehensive explanation of such categories, see Robles Castellanos (1990:53–54).

Type: Variety

Group: Name of established ceramic group to which the type belongs.

Established by: Name of the ceramist(s) who first identified and described (i.e. defined) the type and/or variety. Year of corresponding publication or report.

Regional Inter-Cave Distribution and Frequency: The cave(s) in which this type and variety were identified and the number of sherds recovered.

Regional Intersite Distribution: Other sites within the Yalahau region (see figure 2.1 in Chapter 2) at which this type and variety have been identified.

Representative General Distribution: This field may include two kinds of references: 1) Limited selection of sites at which the type:variety has been reported and their corresponding parenthetical references. 2) References for the reader to consult for expanded and more inclusive lists of sites.

Description: This field typically includes information on various attributes including: paste, temper, surface finish, and decoration. True to the "short format" style, the reader is directed toward authoritative descriptions of this type and variety as they appear elsewhere in the literature. Locally distinctive attributes would be described in the "discussion" field below.

Type Collection Reference: The specific type collection at the Ceramoteca that was used to aid in the identification of material from the cave collection. If the exact drawer number was not recorded, at least the site and/or *cajonera* (cabinet) number is provided.

Forms Present in Caves: General vessel forms, as well as lip and base diameter when available.

GROUP	TYPE: VARIETY	Toh	TacbiHa	Pech	Maas	Tsub	PakChen	TamHa	Xooch
Achiote	Achiote Unslipped: Sabán	●		●			●	●	
Chunhinta	Chunhinta Black: Ucú	●		●					
	Nacolal Incised: Nocolal	●							
	Dzocobel Red-on-black: Dzocobel	●							
Joventud	Joventud Red: Nolo	●		●					
Dzudzuquil	Dzudzuquil Cream-to-buff: Dzudzuquil	●		●					
	Kuche Incised: Kuche	●		●					
	Maján Red-and-cream-to-buff: Maján	●		●					
	Tumben Incised: Tumben	●		●					
	Petjal Red-on-black-and-cream-to-buff: Unspecified	●							
	Dzudzuquil Group Undesignated	●							
Kin	Kin Orange-red: Kin	●		●					
	Kin Orange-red Special (Striated)	●							
	Kin Orange-red Special (Fluted)			●					
Pital	Pital Cream: Blotchy	●							
Tancah	Tancah Burdo: Tancah	●		●			●		
	Chancenote Striated: Chiquilá	●		●	●				
Sierra	Sierra Red: Unspecified	●		●			●	●	
	Sierra Red: Clear Slip	●		●	●		●	●	
	Laguna Verde Incised: Clear Slip	●		●			●		
	Alta Mira Fluted: Horizontally-fluted	●		●					
	Alta Mira Fluted: Clear Slip	●							
	Lagartos Punctated: Lagartos	●		●					
	Habana Club Punctated: Habana Club	●							
	Celerain Notched: Unspecified	●							
	Sierra Red: Black-and-red	●					●		
	Sierra Red: Unslipped-exterior	●							
	Sierra Red: Striated-interior (Sierra)	●		●					
	Sierra Red: Orange-slip	●							
	Sierra Group Undesignated	●							
Tamanche	Tamanche Variegated-buff: Tamanche	●							
Sapote	Sapote Striated: Sapote				●				
Tipikal	Tipikal Preslip-striated: Tipikal	●		●					
Nolo	Nolo Red: Nolo	●		●					
	Nolo Group Special	●							
Caribal	Caribal Red: Unspecified	●							
Xanabá	Xanabá Red: Unspecified	●		●					
	Caucel Trickle-on-red: Caucel	●							
Polvero	Polvero Black: Polvero	●							
	Lechugal Incised: Lechugal	●							
Ucú	Ucú Black: Unspecified	●		●					
Aguacate	Aguacate Orange: Unspecified	●							
Maxcanú	Tacopate Trickle-on-brown: Tacopate	●	●						
Unspecified	Tolok Black-on-orange: Tolok	●							
Unspecified	Kantenah Black-on-orange Special	●							
	Kantenah Red-on-orange Special						●		
Unspecified	Shangurro Red-on-orange: Unspecified	●							
Dzilam	Dzilam Verde Incised: Dzilam	●		●			●		
Huachinango	Huachinango Bichrome Incised: Huachinango	●		●				●	
Carolina	Carolina Bichrome Incised: Carolina	●		●			●		
Aguila	Aguila Orange: Aguila		●						
	Aguila Orange: Unspecified	●							
Sabán	Sabán Burdo: Sabán	●		●	●	●	●		
	Sabán Burdo: Becoob	●	●	●	●		●		
Balanza	Balanza Black: Unspecified	●							
	Lucha Incised: Unspecified	●							
Cetelac	Cetelac Fiber-tempered: Cetelac	●	●	●			●		
	Cetelac Fiber-tempered: Xcán	●					●		
Unspecified	Xoclan Trickle-on-red: Xoclan		●						
Dos Arroyos	Dos Arroyos Orange Polychrome: Dos Arroyos				●				
	Caldero Buff Polychrome: Unspecified	●							
	San Blas Red-on-orange: Unspecified	●							
Timucuy	Timucuy Orange Polychrome: Timucuy					●			
	Tituc Orange Polychrome: Tituc	●							
	Tituc Orange Polychrome: Banded	●							
	Tituc Orange Polychrome: Camichín	●							
	Tituc Orange Polychrome: Unspecified		●						
Batres	Batres Red: Batres	●							
Arena	Arena Red: Arena		●						
Saxché	Saxché Orange Polychrome: Saxché	●							
	Sibal Buff Polychrome: Unspecified	●					●		
Petkanche	Petkanche Orange Polychrome: Unspecified		●						
Sat	Chemax Black-on-preslate: Chemax		●						
	Yaxuná Striated-preslip: Yaxuná				●				
Chumul	Janan Orange Polychrome: Janan	●							
	Janan Orange Polychrome Special	●							
Vista Alegre	Vista Alegre Striated: Vista Alegre	●	●		●				
	Vista Alegre Striated: Chen Río	●							
	Vista Alegre Striated: Unspecified		●						
Muna	Muna Slate: Muna		●						
	Sacalum Black-on-slate: Sacalum		●						
Teabo	Teabo Red: Teabo								●
	Tekax Black-on-red: Tekax				●				
Navulá	Chen Mul Modeled: Chen Mul				●				●
	Cehac Painted: Cehac								●
Mama	Mama Red: Cancún	●							
	Mama Group Special	●							

Table 5.1. Presence of all types and varieties for all caves.

GROUP	TYPE: VARIETY	FREQUENCY	%
Achiote	Achiote Unslipped: Sabán	62	1.67
Chunhinta	Chunhinta Black: Ucú	3	0.08
	Nacolal Incised: Nocolal	2	0.05
	Dzocobel Red-on-black: Dzocobel	1	0.03
Joventud	Joventud Red: Nolo	2	0.05
Dzudzuquil	Dzudzuquil Cream-to-buff: Dzudzuquil	71	1.91
	Kuche Incised: Kuche	6	0.16
	Maján Red-and-cream-to-buff: Maján	22	0.59
	Tumben Incised: Tumben	7	0.19
	Petjal Red-on-black-and-cream-to-buff: Unspecified	1	0.03
	Dzudzuquil Group Undesignated	1	0.03
Kin	Kin Orange-red: Kin	52	1.40
	Kin Orange-red Special (Striated)	2	0.05
	Kin Orange-red Special (Fluted)	4	0.11
Pital	Pital Cream: Blotchy	1	0.03
Tancah	Tancah Burdo: Tancah	19	0.51
	Chancenote Striated: Chiquilá	136	3.67
Sierra	Sierra Red: Unspecified	617	16.63
	Sierra Red: Clear Slip	260	7.01
	Laguna Verde Incised: Clear Slip	419	11.29
	Alta Mira Fluted: Horizontally-fluted	3	0.08
	Alta Mira Fluted: Clear Slip	1	0.03
	Lagartos Punctated: Lagartos	5	0.13
	Habana Club Punctated: Habana Club	9	0.24
	Celerain Notched: Unspecified	1	0.03
	Sierra Red: Black-and-red	31	0.84
	Sierra Red: Unslipped-exterior	41	1.11
	Sierra Red: Striated-interior (Sierra)	22	0.59
	Sierra Red: Orange-slip	3	0.08
	Sierra Group Undesignated	1	0.03
Tamanche	Tamanche Variegated-buff: Tamanche	3	0.08
Sapote	Sapote Striated: Sapote	2	0.05
Tipikal	Tipikal Preslip-striated: Tipikal	3	0.08
Nolo	Nolo Red: Nolo	18	0.49
	Nolo Group Special	1	0.03
Caribal	Caribal Red: Unspecified	1	0.03
Xanabá	Xanabá Red: Unspecified	56	1.51
	Caucel Trickle-on-red: Caucel	31	0.84
Polvero	Polvero Black: Polvero	1	0.03
	Lechugal Incised: Lechugal	1	0.03
Ucú	Ucú Black: Unspecified	13	0.35
Aguacate	Aguacate Orange: Unspecified	3	0.08
Maxcanú	Tacopate Trickle-on-brown: Tacopate	3	0.08
Unspecified	Tolok Black-on-orange: Tolok	3	0.08
Unspecified	Kantenah Black-on-orange Special	1	0.03
	Kantenah Red-on-orange Special	1	0.03
Unspecified	Shangurro Red-on-orange: Unspecified	2	0.05
Dzilam	Dzilam Verde Incised: Dzilam	127	3.42
Huachinango	Huachinango Bichrome Incised: Huachinango	43	1.16
Carolina	Carolina Bichrome Incised: Carolina	580	15.63
Aguila	Aguila Orange: Aguila	1	0.03
	Aguila Orange: Unspecified	5	0.13
Sabán	Sabán Burdo: Sabán	140	3.77
	Sabán Burdo: Becoob	256	6.90
Balanza	Balanza Black: Unspecified	1	0.03
	Lucha Incised: Unspecified	1	0.03
Cetelac	Cetelac Fiber-tempered: Cetelac	237	6.39
	Cetelac Fiber-tempered: Xcán	149	4.02
Unspecified	Xoclan Trickle-on-red: Xoclan	1	0.03
Dos Arroyos	Dos Arroyos Orange Polychrome: Dos Arroyos	1	0.03
	Caldero Buff Polychrome: Unspecified	1	0.03
	San Blas Red-on-orange: Unspecified	1	0.03
Timucuy	Timucuy Orange Polychrome: Timucuy	2	0.05
	Tituc Orange Polychrome: Tituc	10	0.27
	Tituc Orange Polychrome: Banded	2	0.05
	Tituc Orange Polychrome: Camichín	2	0.05
	Tituc Orange Polychrome: Unspecified	13	0.35
Batres	Batres Red: Batres	1	0.03
Arena	Arena Red: Arena	1	0.03
Saxché	Saxché Orange Polychrome: Saxché	16	0.43
	Sibal Buff Polychrome: Unspecified	4	0.11
Petkanche	Petkanche Orange Polychrome: Unspecified	1	0.03
Sat	Chemax Black-on-preslate: Chemax	1	0.03
	Yaxuná Striated-preslip: Yaxuná	3	0.08
Chumul	Janan Orange Polychrome: Janan	1	0.03
	Janan Orange Polychrome Special	1	0.03
Vista Alegre	Vista Alegre Striated: Vista Alegre	65	1.75
	Vista Alegre Striated: Chen Río	9	0.24
	Vista Alegre Striated: Unspecified	1	0.03
Muna	Muna Slate: Muna	1	0.03
	Sacalum Black-on-slate: Sacalum	1	0.03
Teabo	Teabo Red: Teabo	1	0.03
	Tekax Black-on-red: Tekax	1	0.03
Navulá	Chen Mul Modeled: Chen Mul	75	2.02
	Cehac Painted: Cehac	1	0.03
Mama	Mama Red: Cancún	2	0.05
	Mama Group Special	3	0.08
	Total Count	3710	100

Table 5.2. Tabulation of combined lots by type and variety for all caves.

Illustrations: Figure number of corresponding illustration(s) in this chapter (if available). Sherd illustrations are one half scale (unless indicated otherwise); therefore rim and body thickness is not indicated in the "forms" field above. Unless otherwise noted, Ochoa and I drew all sherd illustrations.

Discussion: This field includes descriptions of attributes (or combinations of attributes) that are distinctive in relation to sherds (of the same type and/or variety) from other sites or other caves. All other comments specific to this type and variety may be included here.

Note: Fields in certain entries may be entirely omitted or followed by "N/R" (not reported) or "N/A" (not applicable).

A type collection of the ceramics analyzed in this chapter is available at the Ceramoteca of Cento INAH Yucatán, and can be found in *cajonera* Q-18. A more detailed treatment of the pottery (than is appropriate here) will be prepared as a separate report in the future.

CERAMIC TYPOLOGY

Middle Preclassic
700 BC – 150 BC

Group	Type: Variety
Achiote	Achiote Unslipped: Sabán
Chunhinta	Chunhinta Black: Ucú
	Nacolal Incised: Nacolal
	Dzocobel Red-on-black: Dzocobel
Joventud	Joventud Red: Nolo
Dzudzuquil	Dzudzuquil Cream-to-buff: Dzudzuquil
	Kuche Incised: Kuche
	Maján Red-and-cream-to-buff: Maján
	Tumben Incised: Tumben
	Petjal Red-on-black-and-cream-to-buff: Unspecified
	Dzudzuquil Group Unspecified
Kin	Kin Orange-red: Kin
	Kin Orange-red: Striated
	Kin Orange-red: Fluted
Pital	Pital Cream: Blotchy

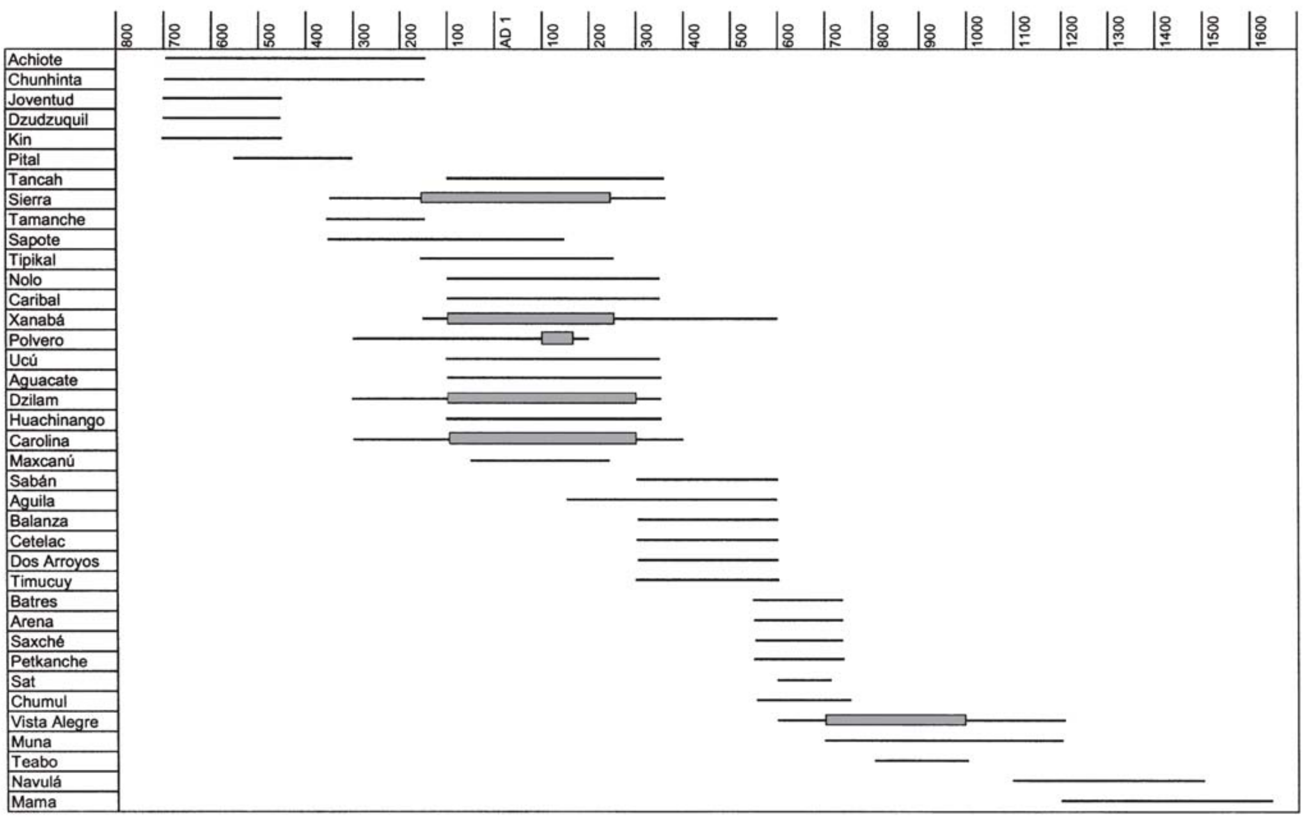


Table 5.3. Chronological distribution of ceramic groups.

Achiote Unslipped: Sabán
Group: Achiote
Established by: Type: Smith and Gifford 1966:154; Variety: Smith 1971:31
Regional Inter-Cave Distribution and Frequency: Actun Toh 4, Actun Pech 53, Pak Ch'en 3, Actun Tam Ha 2
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:1–3). Unspecified variety of Achiote Unslipped: Ek Balam (Bey et al. 1998: 110–111). For Achiote variety see Ball 1977:8 and González Licón 1986:74.
Description: See Andrews V 1989:1–3
Type Collection Reference: Komchen Y-12-(1–3)
Forms Present in Caves: Olla (body sherds only)
Illustrations: N/A

Chunhinta Black: Ucú
Group: Chunhinta
Established by: Type: Smith and Gifford 1966:156; Variety: Smith 1971:32
Regional Inter-Cave Distribution and Frequency: Actun Toh 2, Actun Pech 1
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:4–7); Loltún (Robles Castellanos 1997:261–262). For Chunhinta Black: Chunhinta Variety see Sabloff 1975.
Description: See Andrews V 1989:4–7
Type Collection Reference: Komchen Y-12-7
Forms Present in Caves: Cajete
Illustrations: 5.1,a

Nacolal Incised: Nacolal
Group: Chunhinta
Established by: Andrews V 1989:7–8
Regional Inter-Cave Distribution and Frequency: Actun Toh 2
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:7–8); Ek Balam (Bey et al. 1998:110).
Description: see Andrews V 1989:7–8
Type Collection Reference: Komchen Y-12-8
Forms Present in Caves: Cajete (lip dia: 47cm; flat base dia: 42cm)
Illustrations: 5.1,c–d
Discussion: One sherd from lot SJ201-1 (illustrated) was identical to examples from the Komchen collection with respect to paste texture and color, slip texture and color, and pre-slip circumferential grooving above the basal break. Illustrated rim sherd has diagonal incisions below the rim.

Dzocobel Red-on-black: Dzocobel
Group: Chunhinta
Established by: Andrews V 1989:9–10
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:9–10)
Description: see Andrews V 1989:9–10
Type Collection Reference: Komchen
Forms Present in Caves: Cajete
Illustrations: 5.1,b

Joventud Red: Nolo
Group: Joventud
Established by: Type: Smith and Gifford 1966:158; Variety: Smith 1971:32
Regional Inter-Cave Distribution and Frequency: Actun Toh 1, Actun Pech 4
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:11–15). Type only: Ek Balam (Bey et al. 1998:110) and Yaxuna (Suhler et al. 1998:172). For expanded type distribution, see Ball 1977:17–18.
Description: See Andrews V 1989:11–15
Type Collection Reference: Komchen Y-11-12
Forms Present in Caves: Olla (body sherds only)
Illustrations: N/A

Dzudzuquil Cream-to-buff: Dzudzuquil
Group: Dzudzuquil
Established by: Andrews V 1989:21–23
Regional Inter-Cave Distribution and Frequency: Actun Toh 41, Actun Pech 30
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:21–23); Ek Balam (Bey et al. 1998:111–112); Loltún (Robles Castellanos 1997:260–261 and González Licón 1986:75–76); Yaxuná (Suhler et al.:1998:172).
Description: See Andrews V 1989:21–23
Type Collection Reference: Komchén Y-11-3
Forms Present in Caves: Olla (lip dia: 25–28cm), Cajete (lip dia: 17.5–34cm)
Illustrations: 5.2,a–d; 5.3,a–g
Discussion: The Dzudzuquil Cream-to-buff sherds, particularly those found in Actun Toh, differ significantly from those in the Komchen collection. Though the paste is quite similar, the slipped surfaces are unique. A brilliant true cream slip was

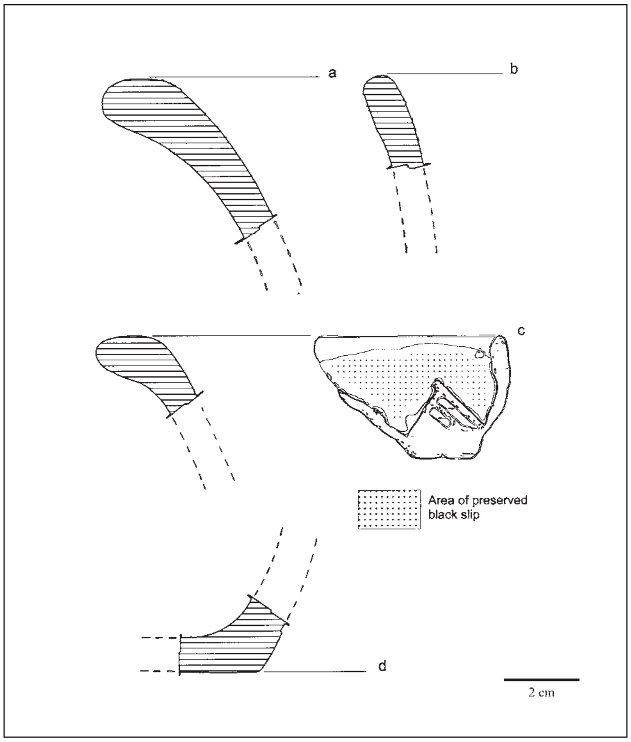


Figure 5.1. a. Chunhinta Black: Ucú. b. Dzocobel Red-on-black: Dzocobel. c–d. Nacolal Incised: Nocolal.

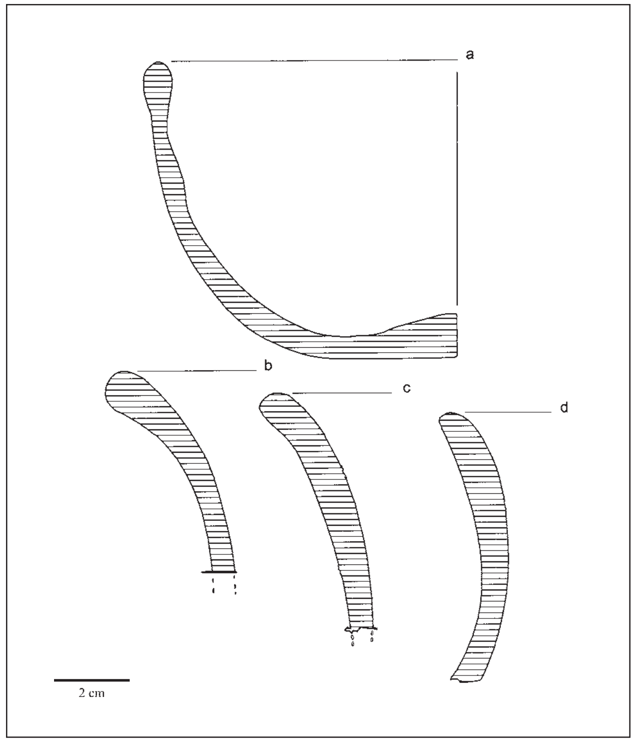


Figure 5.2. a–d. Dzudzuquil Cream-to-buff: Dzudzuquil.

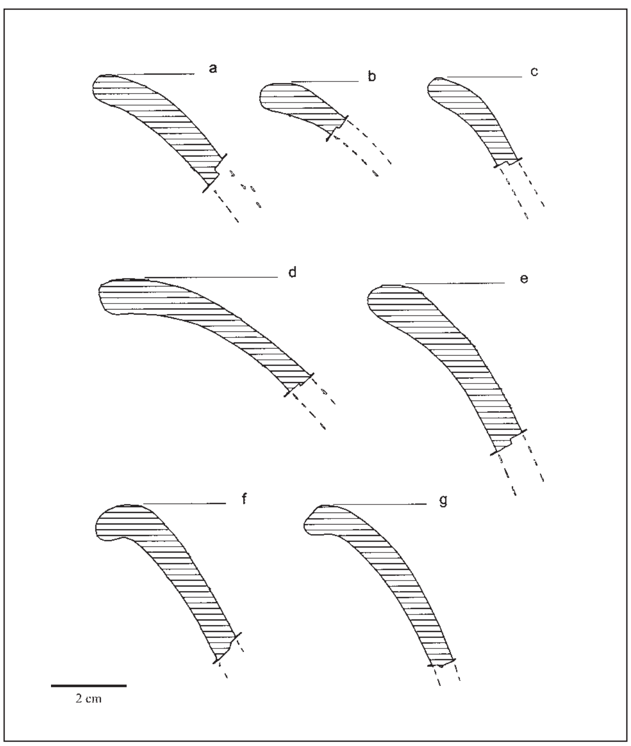


Figure 5.3. a–g. Dzudzuquil Cream-to-buff: Dzudzuquil.

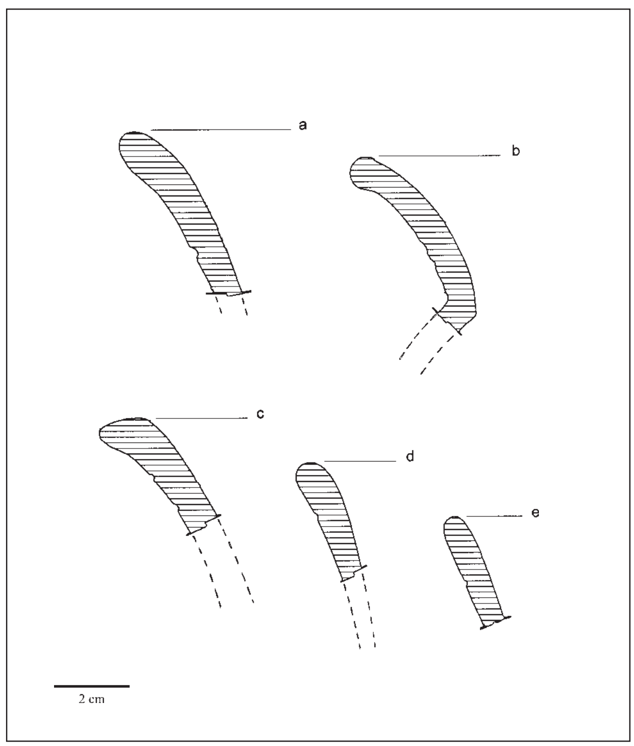


Figure 5.4. a–e. Kuche Incised: Kuche.

applied to olla exteriors. Like the Komchen material, slip is thick and well-adhered, but is also highly polished and extremely glossy. Unlike some of the more translucent slips in the Komchen collection, which tend to reveal the red tones of the underlying paste, they are always opaque and consistent. Crazing is present but the slip resists flaking. Cream color ranges from 10YR 7/3 (with areas of 10YR 6/4) to a more pinkish 7.5YR 6/4-8/4. The vessel exteriors appear to have been well-smoothed prior to the application of the cream slip. Surprisingly, olla interiors appear to have been fully slipped as well. Interior slip, which is polished and smooth to the touch, is Sierra-like in color (5YR 4/6) yet lustrous rather than waxy. Vessel interiors were lightly smoothed prior to the application of slip. It is possible that the brilliant cream slip of these sherds could be a regional attribute or represent a distinct sphere/tradition for this type (Ball, personal communication 2000).

Kuche Incised: Kuche
Group: Dzudzuquil
Established by: Andrews V 1989:23–24
Regional Inter-Cave Distribution and Frequency: Actun Toh 4, Actun Pech 2
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:23–24)
Description: See Andrews V 1989:23–24
Type Collection Reference: Komchen Y-11-4
Forms Present in Caves: Olla (lip dia: 21–31cm), Cajete (lip dia: 18cm)
Illustrations: 5.4, a–e
Discussion: The broad and shallow circumferential incisions described by Andrews V were present on only one olla rim. Narrower and deeper incisions are present on the four other rims.

Maján Red-and-cream-to-buff: Maján
Group: Dzudzuquil
Established by: Andrews V 1989:24–26
Regional Inter-Cave Distribution and Frequency: Actun Toh 12, Actun Pech 10
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:24–26)
Description: See Andrews V 1989:24–26
Type Collection Reference: Komchen Y-11-4
Forms Present in Caves: Olla (lip dia: 37cm), Spouted Olla, Cajete (lip dia: 27–33cm)
Illustrations: 5.5, a–e; 5.6, a–e
Discussion: The single spout in the collection is oval in cross section. See illustration for profile view.

Tumben Incised: Tumben
Group: Dzudzuquil
Established by: Andrews V 1989:27–28
Regional Inter-Cave Distribution and Frequency: Actun Toh 6, Actun Pech 1
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:27–28)
Description: See Andrews V 1989:27–28
Type Collection Reference: Komchen Y-11-6
Forms Present in Caves: Olla (lip dia: 25–27cm), Cajete (lip dia: 23cm)
Illustrations: 5.7, a–d
Discussion: Smooth, shallow, and wide circumferential flutes are present on one olla rim and one olla neck (illustrated). Two additional rims (illustrated) exhibit grooving. This is consistent with Andrews V (1989:27) description of grooves and flutes (as well as incisions) for this type.

Petjal Red-on-black-and-cream-to-buff: Unspecified
Group: Dzudzuquil
Established by: Type: Andrews V 1989:30–31
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:30–31)
Description: See Andrews V 1989:30–31
Type Collection Reference: Komchen
Forms Present in Caves: Olla (concave base)
Illustrations: 5.7, f

Dzudzuquil Group Unspecified
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Illustrations: 5.7, e
Discussion: Single, everted rim (dia. 31–33cm) from a cajete with flaring sides resembles Altamira Fluted: Horizontally-fluted as described by Forsyth (1983). However, several attributes such as paste, temper, and slip suggest a Dzudzuquil group affiliation. Light brown slip is thick, extremely glossy, and well adhered. Decoration consists of single smooth, shallow, and wide horizontal flute below the rim. An additional narrow and deeper flute/incision is located further down the side. Included in the tempering were small ferrous particles (1–2mm in diameter). Boucher (personal communication 2000) noticed such inclusions in various Celestun Red Ware sherds from the

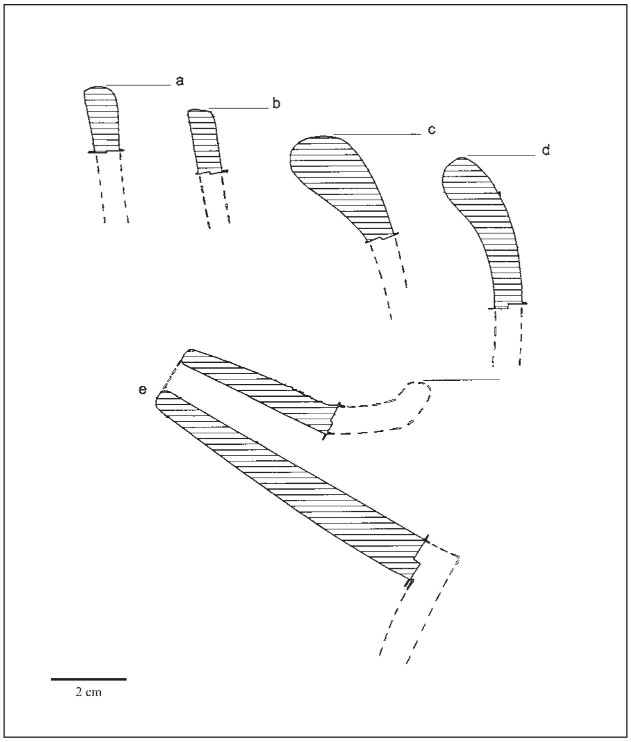


Figure 5.5. a–e. Maján Red-and-cream-to-buff: Maján.

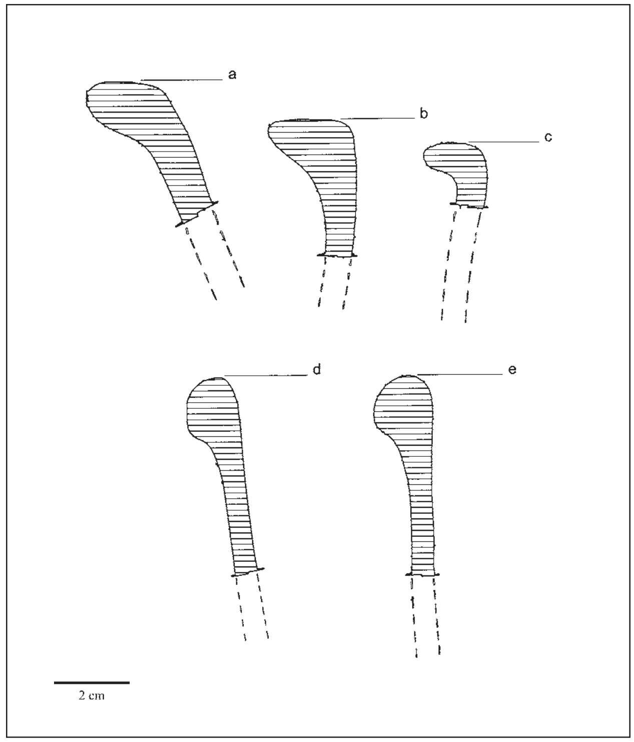


Figure 5.6. a–e. Maján Red-and-cream-to-buff: Maján.

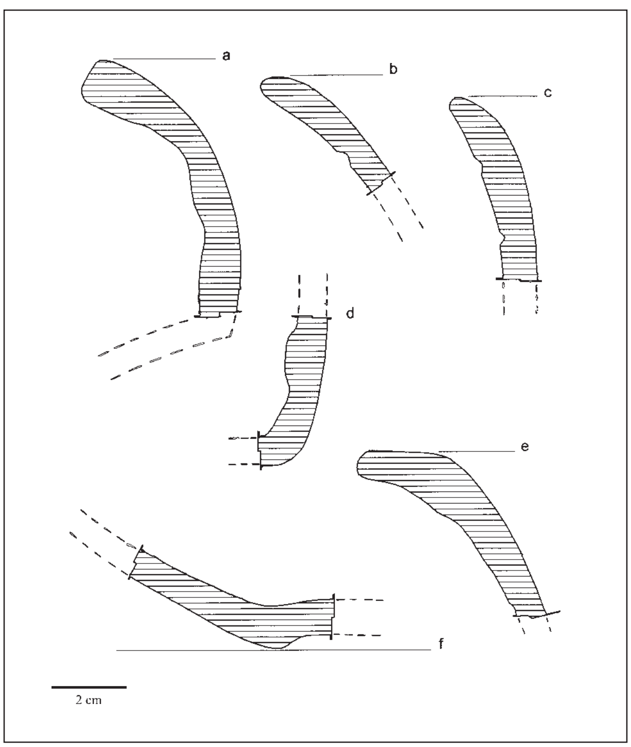


Figure 5.7. a–d. Tumben Incised: Tumben. e. Dzudzuquil Group Unspecified. f. Petjal Red-on-black-and-cream-to-buff: Unspecified.

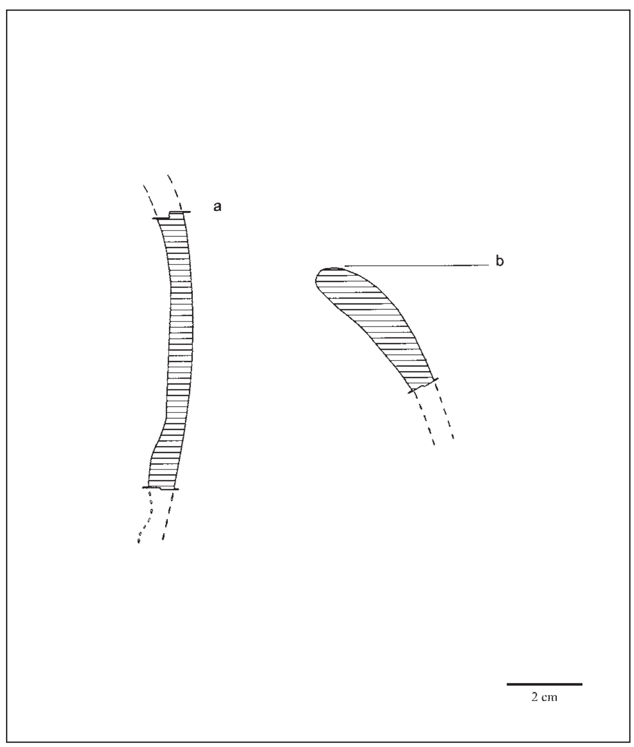


Figure 5.8. a. Kin Orange-red Special (Fluted). b. Kin Orange-red: Kin.

Dzibilchatun collection (Y-4-9). See Simmons (1980) for a description.

Kin Orange-red: Kin

Group: Kin
Established by: Andrews V 1989:2–4
Regional Inter-Cave Distribution and Frequency: Actun Toh 36, Actun Pech 16
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:2–4); Ek Balam (Bey et al. 1998).
Description: See Andrews V 1989:2–4
Type Collection Reference: Komchen Y-10-1
Forms Present in Caves: Olla (body sherds only), Cajete (lip dia: 27cm)
Illustrations: 5.8, b
Discussion: The criteria for including sherds in this type were problematic. The color of the polished interiors of a number of olla sherds is similar to Dzudzuquil Cream-to-buff material from Balankanche (Y-13-2, classified by S. Boucher 1997). However, exterior surface finish more closely resembles that described by Andrews V (1989:2–4), including the Sierra-like color of exterior slips (10YR 4/6). Slips were glossy for the most part, but slightly waxier slips were included. On the whole, both paste and slip color resembled that of Sierra Red; however, interior surfaces exhibited Dzudzuquil attributes. Colors of the polished olla interiors ranged from 7.5YR 6/6 (reddish yellow) to 5YR 6/6 (reddish yellow). It is likely that the sherds we assigned to the Kin group represent a transition to Sierra Red. The Kin Orange-red sherds from Actun Pech possess a thicker, better-adhered, more consistent, and glossier slip than is present on Kin material from both Actun Toh and Komchen. The slip color of a number of sherds from Actun Pech is similar to Sierra Red: Orange Variety from Komchen (ibid: 12); however, the paste is definitely earlier than Sierra.

Kin Orange-red Special (Striated)

Group: Kin
Established by: Type: Andrews V 1989:2–4
Regional Inter-Cave Distribution and Frequency: Actun Toh 2
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (see type collection)
Type Collection Reference: Komchen Y-10-2
Forms Present in Caves: Olla (body sherds only)
Illustrations: N/A
Discussion: Identical to Kin Variety (as described above) except striations present on olla interiors.

Kin Orange-red Special (Fluted)

Group: Kin
Established by: Type: Andrews V 1989:2–4
Regional Inter-Cave Distribution and Frequency: Actun Pech 4
Regional Intersite Distribution: N/R
Type Collection Reference: Komchen Y-10-(1–2) for type only
Forms Present in Caves: Olla (neck sherds only)
Illustrations: 5.8, a
Discussion: Identical to Kin Variety (as described above) except shallow fluting present on olla necks.

Pital Cream: Blotchy

Group: Pital
Established by: Adams 1971:25–26
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: See Ball 1977:36–37
Description: See Ball 1977:36
Type Collection Reference: Becan
Illustrations: N/A
Discussion: Only one small body sherd recovered.

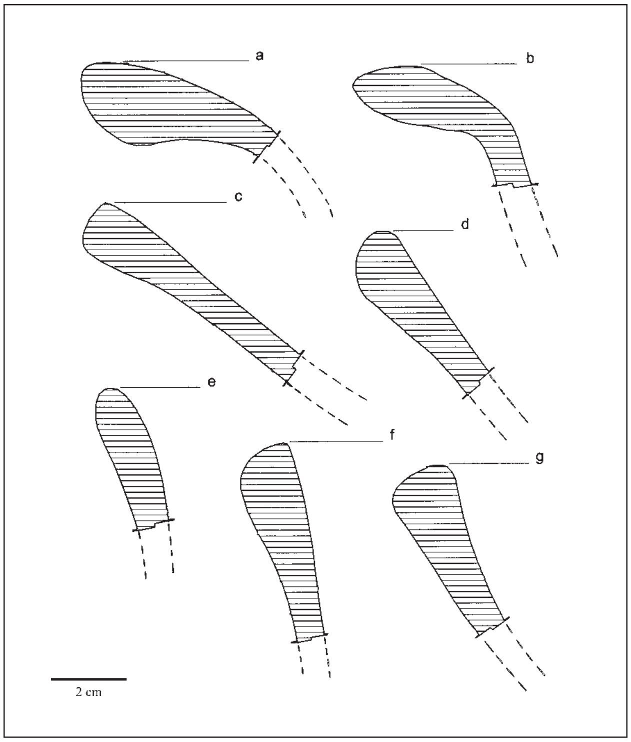


Figure 5.9. a–g.Tancah Burdo: Tancah.

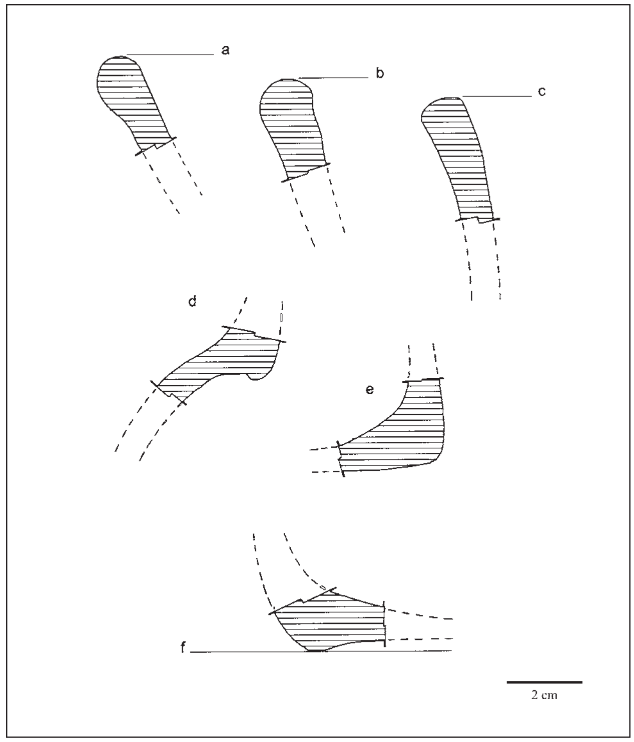


Figure 5.10. a–-f. Chancenote Striated: Chiquilá.

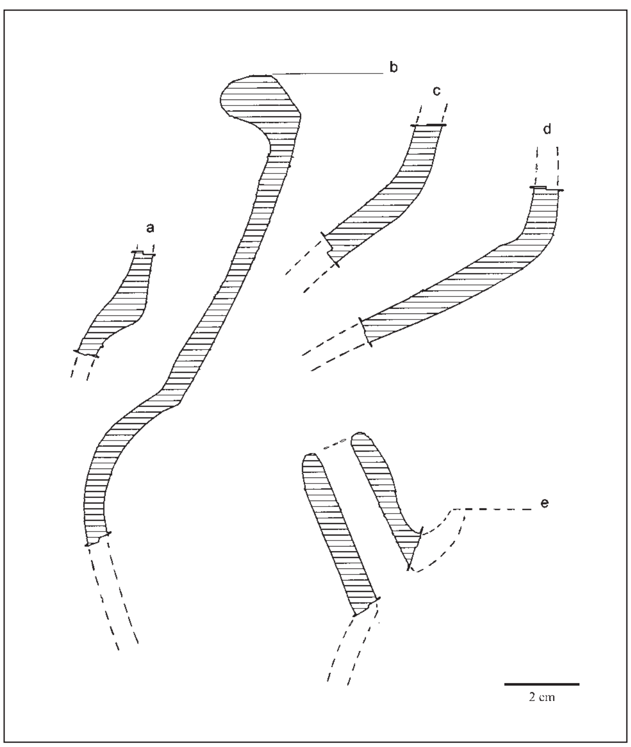


Figure 5.11. a–e. Sierra Red: Unspecified.

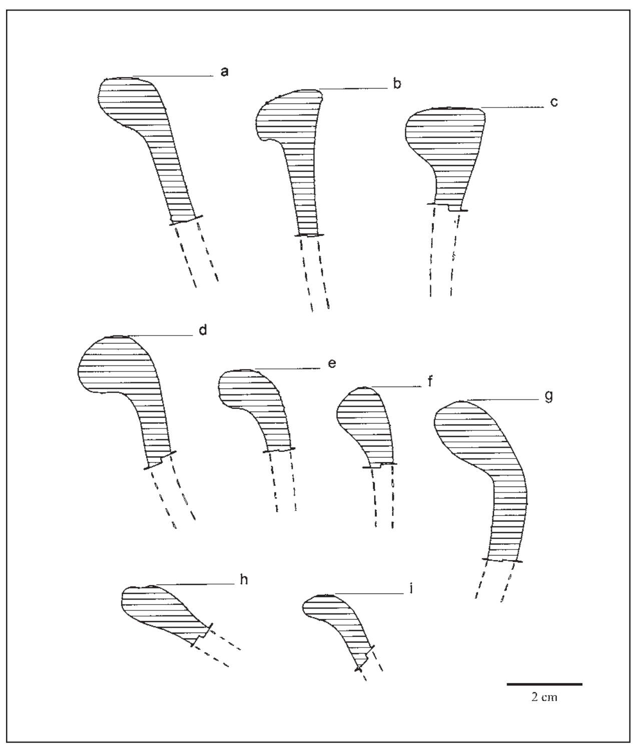


Figure 5.12. a–i. Sierra Red: Unspecified.

Late Preclassic to Protoclassic
150 BC – AD 300/400

Group	Type: Variety
Tancah	Tancah Burdo: Tancah
	Chancenote Striated: Chiquilá
Sierra	Sierra Red: Unspecified
	Sierra Red: Clear Slip
	Laguna Verde Incised: Clear Slip
	Alta Mira Fluted: Horizontally-fluted
	Alta Mira Fluted: Clear Slip
	Lagartos Punctated: Lagartos
	Habana Club Punctated: Habana Club
	Celerain Notched: Unspecified
	Sierra Red: Black-and-red
	Sierra Red: Striated-interior (Sierra)
	Sierra Red: Orange-slip
	Sierra Group Undesignated
Tamanche	Tamanche Variegated-buff: Tamanche
Sapote	Sapote Striated: Sapote
Tipikal	Tipikal Preslip-striated: Tipikal
Nolo	Nolo Red: Nolo
	Nolo Group Special
Caribal	Caribal Red: Unspecified
Xanabá	Xanabá Red: Unspecified
	Caucel Trickle-on-red: Caucel
Polvero	Polvero Black: Polvero
	Lechugal Incised: Lechugal
Ucú	Ucú Black: Unspecified
Aguacate	Aguacate Orange: Unspecified
Maxcanú	Tacopate Trickle-on-brown: Tacopate
Unspecified	Tolok Black-on-orange: Tolok
Unspecified	Kantenah Black-on-orange Special
	Kantenah Red-on-orange Special
Unspecified	Shangurro Red-on-orange: Unspecified
Dzilam	Dzilam Verde Incised: Dzilam
Huachinango	Huachinango Bichrome Incised: Huachinango
Carolina	Carolina Bichrome Incised: Carolina

Tancah Burdo: Tancah

Group: Tancah

Established by: Robles Castellanos 1990:56

Regional Inter-Cave Distribution and Frequency: Actun Toh 12, Actun Pech 3, Pak Ch'en 4

Regional Intersite Distribution: El Naranjal (Boucher 1997); T'isil (Ceja Acosta 2000); Vista Alegre, Kantunilkin, El Diez, Leona Vicario, Monte Bravo, Chiquilá (as Tancah Plain, Sanders 1960)

Representative General Distribution: Cobá (Robles Castellanos 1990:56); type reported at Ek Balam (Bey et al. 1998)

Description: see Robles Castellanos 1990:56

Type Collection Reference: Cobá Q-5

Forms Present in Caves: Cajete, possibly Olla

Illustrations: 5.9, a–g

Discussion: A handle from an olla or cazuela is present in the cave collection. (Such a form has not been previously reported for this type).

Chancenote Striated: Chiquilá

Group: Tancah

Established by: Type: Smith 1971:31; Variety: see Ball 1978:114

Regional Inter-Cave Distribution and Frequency: Actun Toh 85, Actun Pech 31, Actun Maas 20

Regional Intersite Distribution: El Naranjal (Boucher 1997); Grupo Chan Pich (personal observation); T'isil (Ceja Acosta 2000); Chiquilá, Kantunilkin, El Diez, Leona Vicario, (as Chiquilá Variegated, Sanders 1960)

Representative General Distribution: Cobá (Robles Castellanos 1990:57); Ek Balam (Bey et al. 1998)

Description: see Sanders 1960:252–253; see also Robles Castellanos 1990:57

Type Collection Reference: Cobá Q-5

Forms Present in Caves: Cajete, Olla

Illustrations: 5.10, a–f

Discussion: Sherds from cave collection strongly resemble those from San Gervasio.

Sierra Red: Unspecified

Group: Sierra

Established by: Type: Smith and Gifford 1966:163; Variety: Gifford 1976:88 (see also Robles Castellanos 1990:61–65)

Regional Inter-Cave Distribution and Frequency: Actun Toh 558, Actun Pech 41, Pak Ch'en 17, Actun Tam Ha 1

Regional Intersite Distribution: El Naranjal (personal observation); Grupo Chan Pich (personal observation); T'isil (Ceja Acosta 2000); Vista Alegre, Chiquilá, Kantunilkin, Leona Vicario (type only, as Tancah Red, Sanders 1960)

Representative General Distribution: Cobá (Robles Castellanos 1990:61–65); Ek Balam (Bey et al. 1998); type reported in Chikinchel region (Kepecs 1998)

Description: see Gifford 1976:88, see also Robles

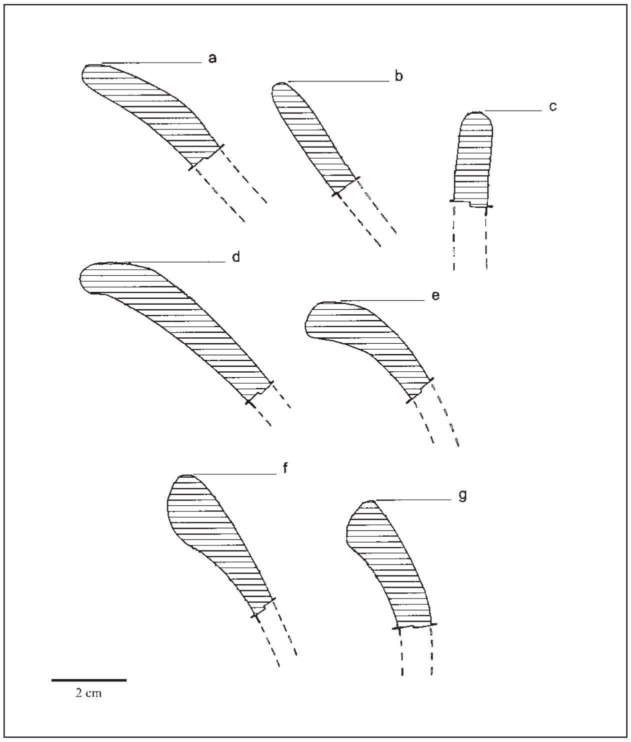


Figure 5.13. a–g. Sierra Red: Unspecified.

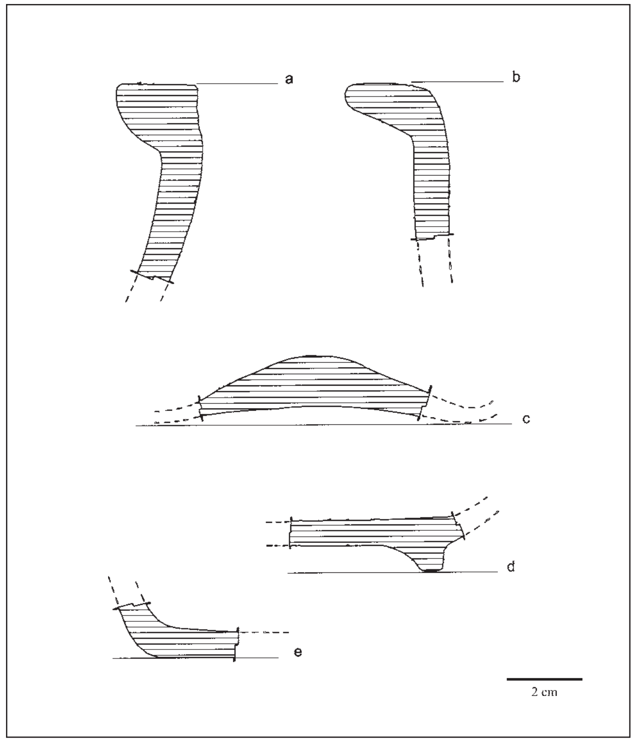


Figure 5.14. a–e. Sierra Red: Unspecified.

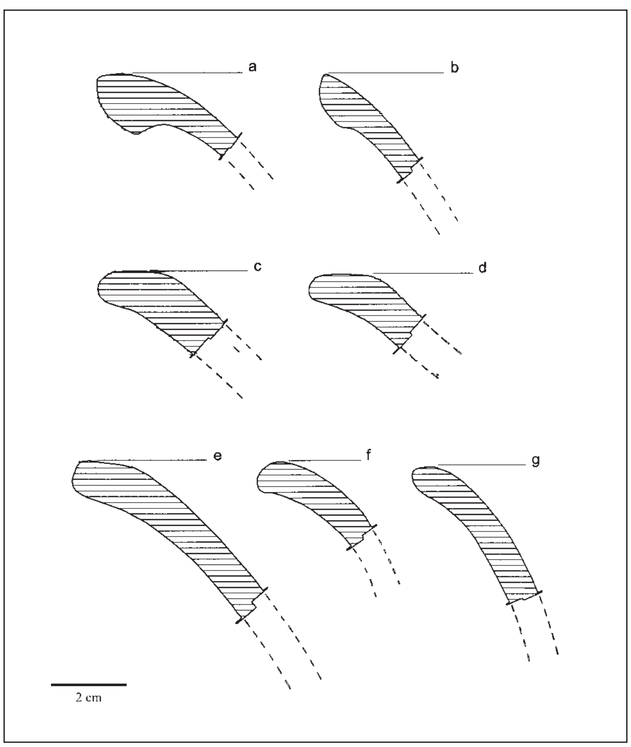


Figure 5.15. a–g. Sierra Red: Clear slip.

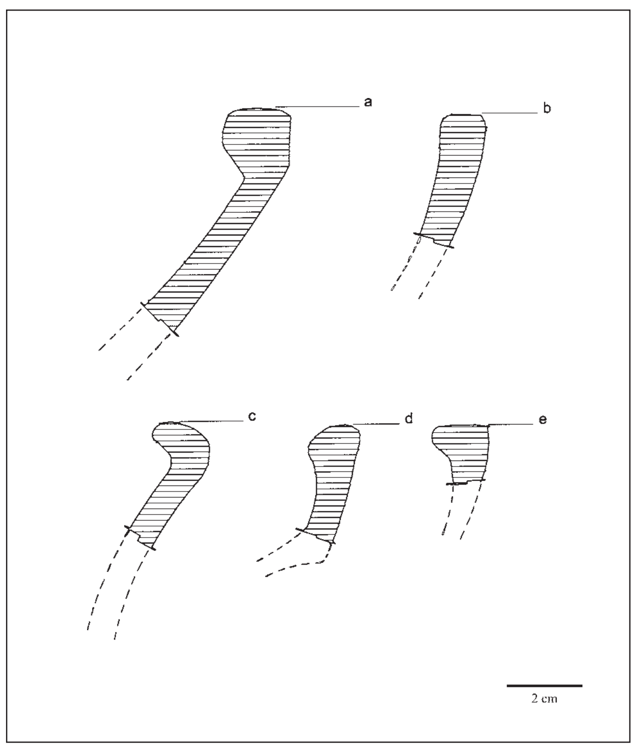


Figure 5.16. a–e. Sierra Red: Clear slip.

Castellanos 1990:61–65
Type Collection Reference: Cobá Q-5-1
Forms Present in Caves: Cajete, Olla
Illustrations: 5.11,a–e; 5.12,a–i; 5.13,a–g; 5.14,a–e
Discussion: Sherds from the cave collection that are included in this variety have an opaque, waxy slip and closely resemble those described by Robles Castellanos. A few sherds in the cave collection have a streaky slip similar to the Sierra Red sherds from Izamal. Among these sherds, slip thickness varies noticeably. Shoulder-to-rim sherd in figure 5.11,b is very similar to jar form designated by Brainerd as Early Regional (1958: fig. 105b).

Sierra Red: Clear Slip
Group: Sierra
Established by: Type: Smith and Gifford 1966:163; Variety: Robles Castellanos 1990:57–61
Regional Inter-Cave Distribution and Frequency: Actun Toh 141, Actun Pech 101, Actun Maas 2, Pak Ch'en 10, Actun Tam Ha 6
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Cobá (Robles Castellanos 1990:57–61)
Description: see Robles Castellanos 1990:57–61
Type Collection Reference: Cobá Q-5-1
Forms Present in Caves: Cajete, Olla
Illustrations: 5.15, a–g; 5.16, a–e; 5.17, a–e; 5.18, a–h
Discussion: Material from cave collection strongly resembles the variety described by Robles Castellanos.

Laguna Verde Incised: Clear Slip
Group: Sierra
Established by: Type: Smith and Gifford 1966:159; Variety: Robles Castellanos 1990:65–66
Regional Inter-Cave Distribution and Frequency: Actun Toh 368, Actun Pech 47, Pak Ch'en 4
Regional Intersite Distribution: El Naranjal (Boucher 1997); T'isil (Ceja Acosta 2000)
Representative General Distribution: Cobá (Robles Castellanos 1990:65–66); Ek Balam (Bey et al. 1998)
Description: see Robles Castellanos 1990:65–66
Type Collection Reference: Cobá Q-5-2
Forms Present in Caves: Cajete, Olla
Illustrations: 5.19, a–c; 5.20, a–g; 5.21, a–h; 5.22, a–e
Discussion: It should be noted that the slips of the Laguna Verde Incised sherds from the cave collection more closely resembled those of the Sierra Red: Unspecified variety than the Sierra Red: Clear Slip variety. Nevertheless, they were included in the Laguna Verde Incised: Clear Slip variety so as not to suggest an affiliation with the Laguna Verde variety of the Petén.

Alta Mira Fluted: Horizontally-fluted
Group: Sierra
Established by: Type: Smith and Gifford 1966:154
Regional Inter-Cave Distribution and Frequency: Actun Toh 2, Actun Pech 1
Regional Intersite Distribution: N/R
Representative General Distribution: type: Komchen (Andrews V 1989); type: Cancún (Andrews et al. 1974:179); type: Edzná (Forsyth 1983)
Description: see Forsyth 1983
Type Collection Reference: Edzná C-12-8
Forms Present in Caves: Olla
Illustrations: 5.23, c

Alta Mira Fluted: Clear Slip
Group: Sierra
Established by: Type: Smith and Gifford 1966:154
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: type: Komchen (Andrews V 1989); type: Cancún (Andrews et al. 1974:179)
Description: for type, see Smith and Gifford 1966:154
Type Collection Reference: Calakmul C-25-4
Forms Present in Caves: N/A
Illustrations: 5.23,d

Lagartos Punctated: Lagartos
Group: Sierra
Established by: Type: Smith and Gifford 1966:159, 170
Regional Inter-Cave Distribution and Frequency: Actun Toh 4, Actun Pech 1
Regional Intersite Distribution: T'isil (Ceja Acosta 2000)
Representative General Distribution: Cancún (as Lagartos Punctate, Andrews et al. 1974:172); Edzná (Forsyth 1989:31–32)
Description: see Andrews et al. 1974:172; Forsyth 1989:31–32
Type Collection Reference: Cancún Q-4-6; Edzná C-13-2 (as Baluartes Special)
Forms Present in Caves: Olla
Illustrations: 5.23, e–g
Discussion: Both impressions and punctations are present on sherds from the cave collection. At least one sherd (figure 5.23f) exhibits preslip and prefire incisions and impressions. The ovoid impressions

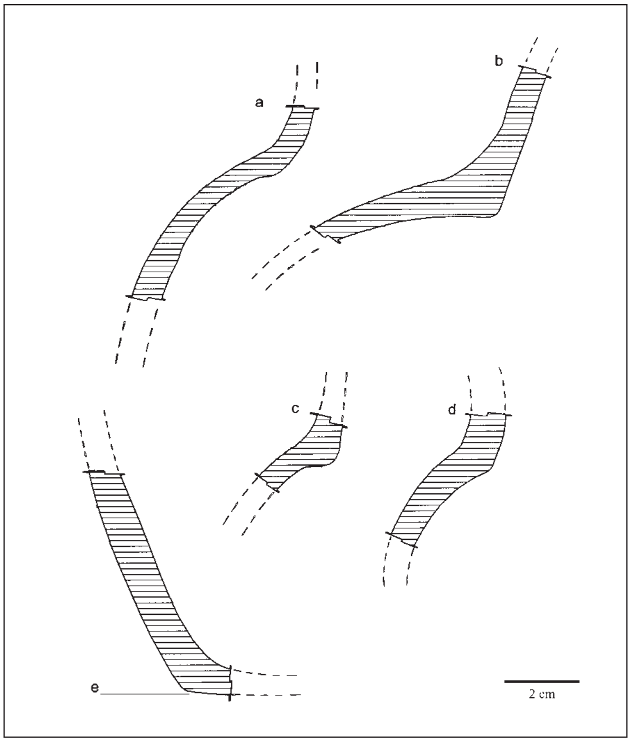


Figure 5.17. a–e. Sierra Red: Clear slip.

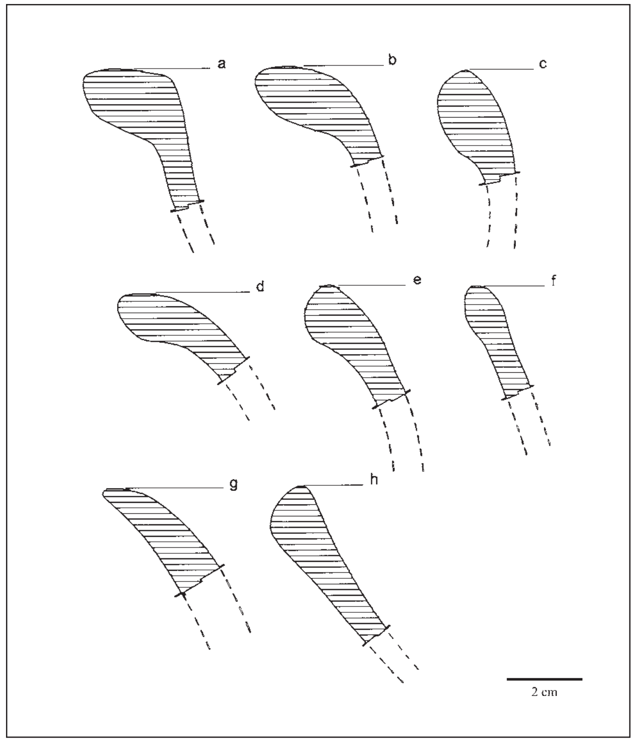


Figure 5.18. a–h. Sierra Red: Clear slip.

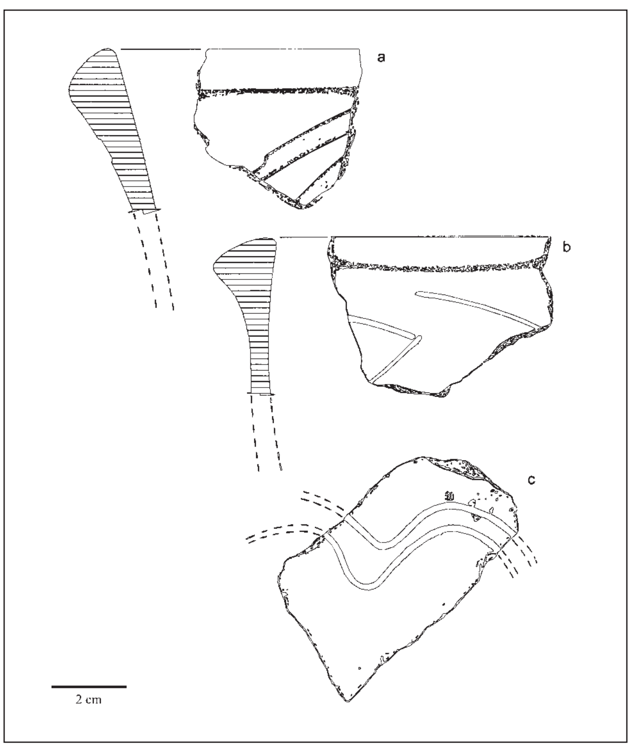


Figure 5.19. a–c. Laguna Verde Incised: Clear slip.

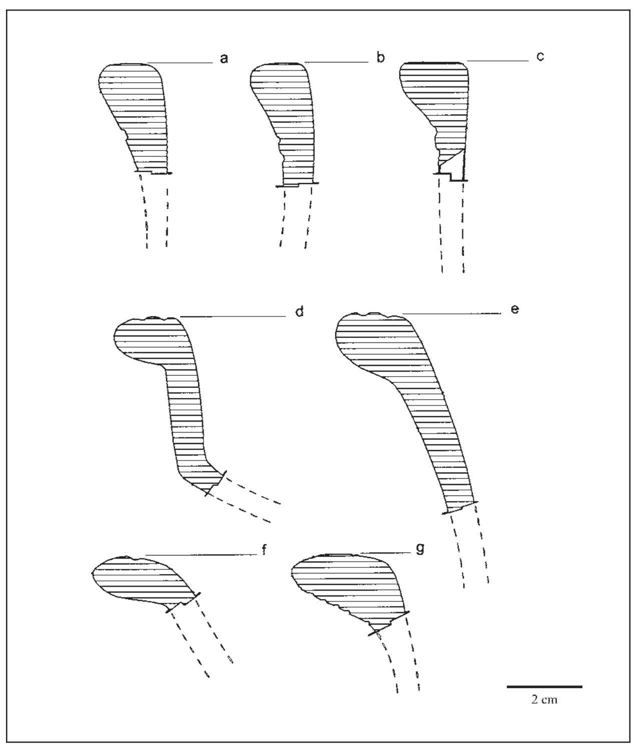


Figure 5.20. a–g: Laguna Verde Incised: Clear slip.

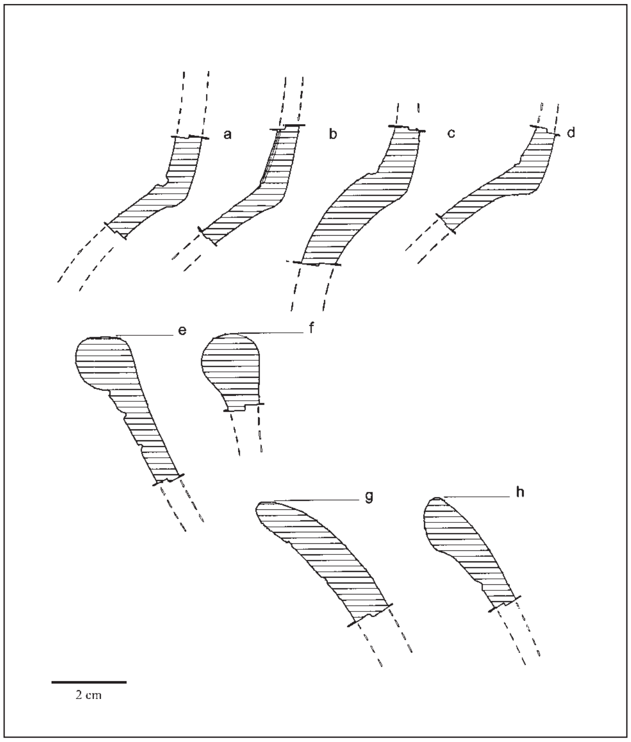


Figure 5.21. a–h. Laguna Verde Incised: Clear slip.

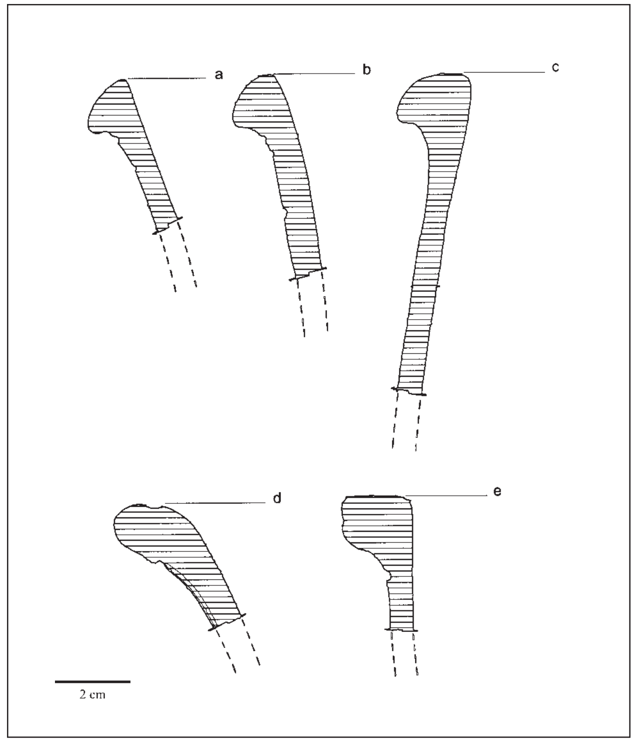


Figure 5.22. a–e. Laguna Verde Incised: Clear slip.

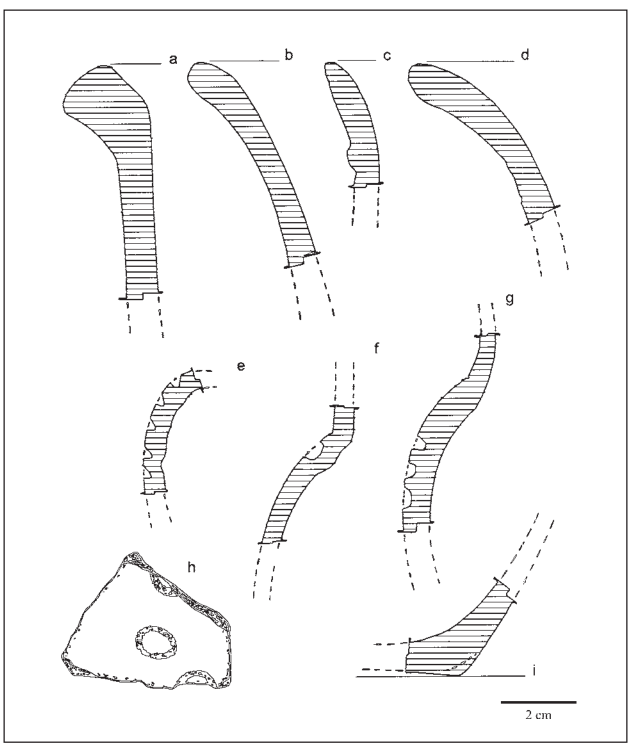


Figure 5.23. a–b. Sierra Red: Orange-slip. c. Alta Mira Fluted: Horizontally-fluted. d. Alta Mira Fluted: Clear Slip. e–g. Lagartos Punctated: Lagartos. h. Sierra Group Undesignated. i. Celerain Notched: Unspecified.

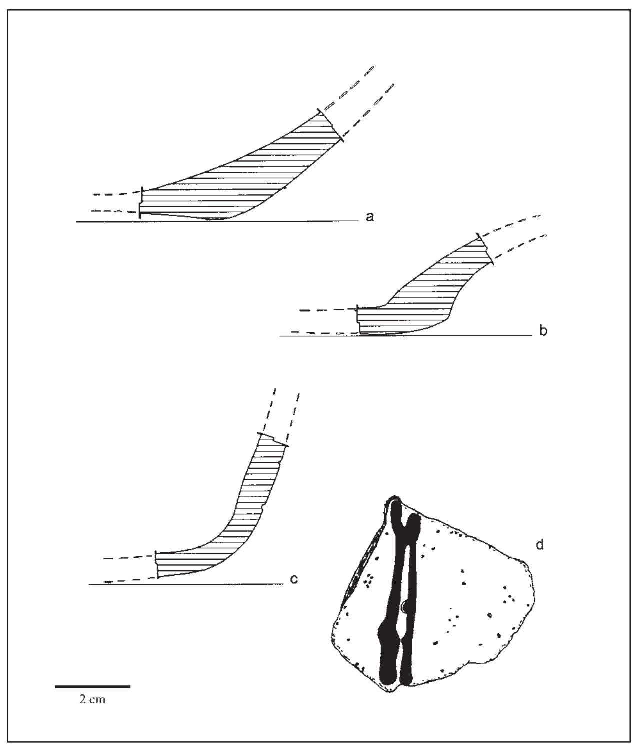


Figure 5.24. a. Tipikal Preslip-striated: Tipikal. b. Polvero Black: Polvero. c. Lechugal Incised: Lechugal. d. Kantenah Red-on-orange Special.

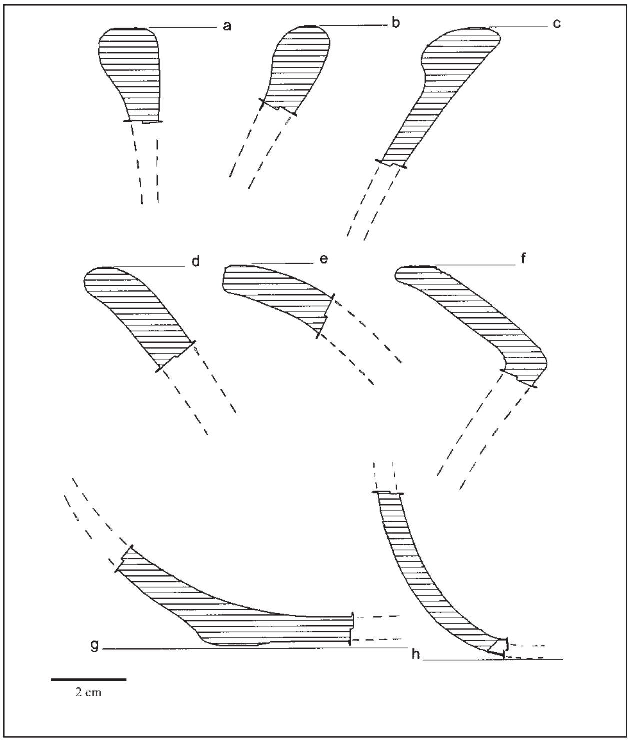


Figure 5.25. a–g. Xanabá Red: Unspecified. h. Caucel Trickle-on-red: Caucel.

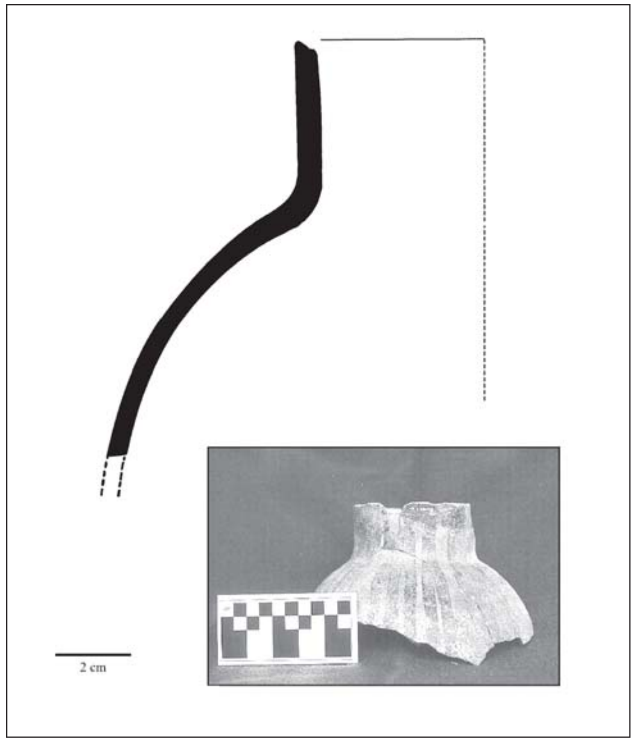


Figure 5.26. Tacopate Trickle-on-brown: Tacopate.

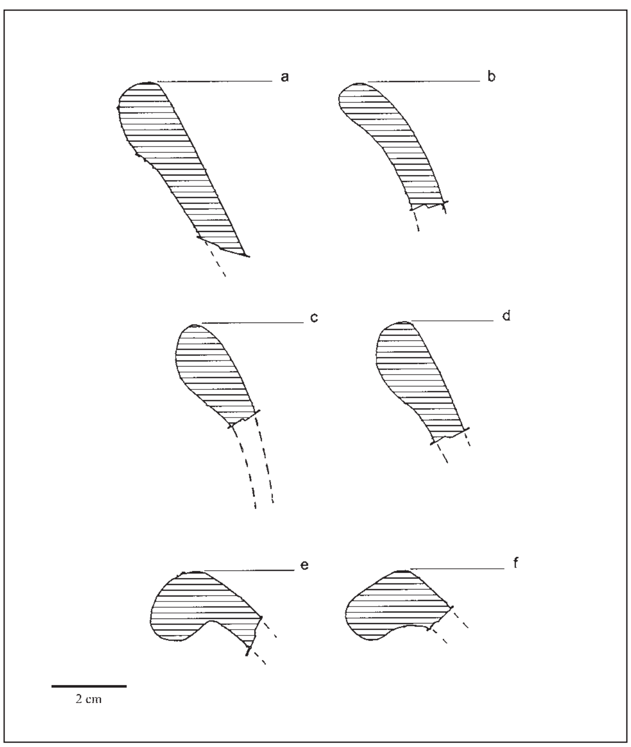


Figure 5.27. a–f. Dzilam Verde: Dzilam.

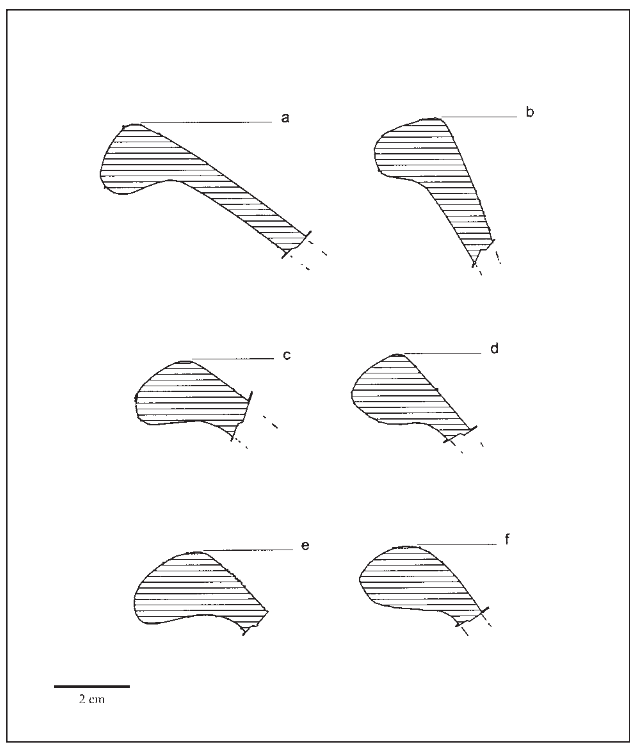


Figure 5.28. a–f. Dzilam Verde: Dzilam.

(located beneath a circumferential incision along the neck break) resulted in "bumps" on the vessel interior. Five of the sherds from the Cancún collection (Q-4-6) were very similar in terms of impression technique. Postslip and prefire punctations are present on sherds in figure 5.23, e, g.

Habana Club Punctated: Habana Club
Group: Sierra
Regional Inter-Cave Distribution and Frequency: Actun Toh 9
Regional Intersite Distribution: N/R
Representative General Distribution: Xelha (Canché M. 1992)
Description: see Canché M. 1992
Type Collection Reference: Xelha Q-14-6
Forms Present in Caves: Cajete
Illustrations: N/A
Discussion: Several non-punctated sherds from the cave collection were included in the type:variety because slip and paste were identical to Habana Club sherds from Xelha collection.

Celerain Notched: Unspecified
Group: Sierra
Established by: Simmons (in Andrews et al. 1974:172)
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Cancún (Andrews et al. 1974:172–178); Komchen (Y-10)
Description: see Simmons (in Andrews et al. 1974:172)
Type Collection Reference: Komchen Y-10
Forms Present in Caves: Cajete
Illustrations: 5.23, i
Discussion: Sherd from cave collection has a prefire impressed/notched basal flange.

Sierra Red: Black-and-red
Group: Sierra
Established by: Andrews V 1989:9
Regional Inter-Cave Distribution and Frequency: Actun Toh 29, Pak Ch'en 2
Regional Intersite Distribution: N/R
Representative General Distribution: Ek Balam (Bey et al. 1998)
Description: see Andrews V 1989:9
Type Collection Reference: Komchen Y-10-3,10
Forms Present in Caves: Cajete
Illustrations: N/A

Sierra Red: Unslipped-exterior
Group: Sierra
Established by:
Regional Inter-Cave Distribution and Frequency: Actun Toh 41
Regional Intersite Distribution: N/R
Representative General Distribution:
Description: see Forsyth 1983
Type Collection Reference: Edzná C-12-7
Forms Present in Caves: N/A
Illustrations: N/A

Sierra Red: Striated-interior (Sierra)
Group: Sierra
Regional Inter-Cave Distribution and Frequency: Actun Toh 21, Actun Pech 1
Regional Intersite Distribution: N/R
Representative General Distribution:
Description: N/A
Type Collection Reference: N/A
Forms Present in Caves: Olla
Illustrations: N/A
Discussion: The interiors of olla necks were slipped, while the interior surfaces of body sherds were unslipped and striated.

Sierra Red: Orange-slip
Group: Sierra
Established by: Andrews V 1989:12–13
Regional Inter-Cave Distribution and Frequency: Actun Toh 3
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:12–13)
Description: see Andrews V 1989:12–13
Type Collection Reference: N/A
Forms Present in Caves: possibly Cajete
Illustrations: 5.23, a–b

Sierra Group Undesignated
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Type Collection Reference: N/A
Forms Present in Caves: N/A
Illustrations: 5.23, h
Discussion: Decoration on body sherd is characterized by unusual postslip and postfire circular impressions/abrasions.

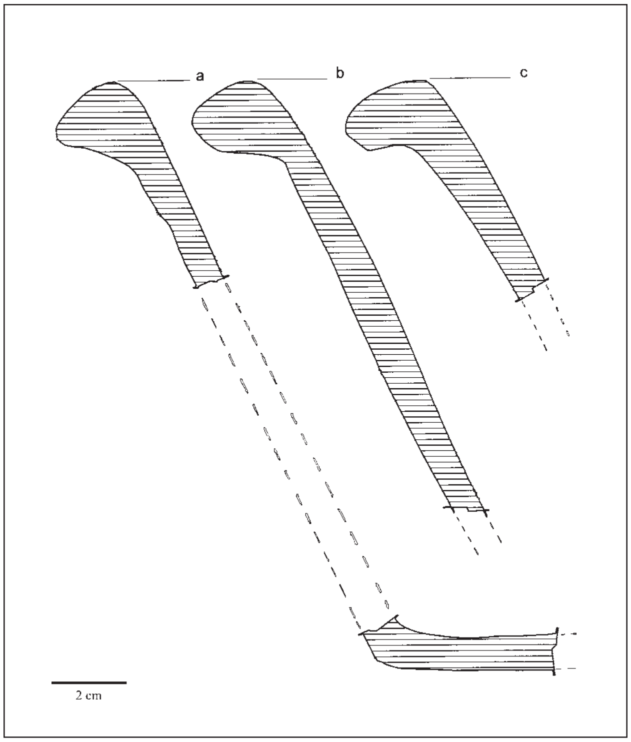


Figure 5.29. a–c. Dzilam Verde: Dzilam.

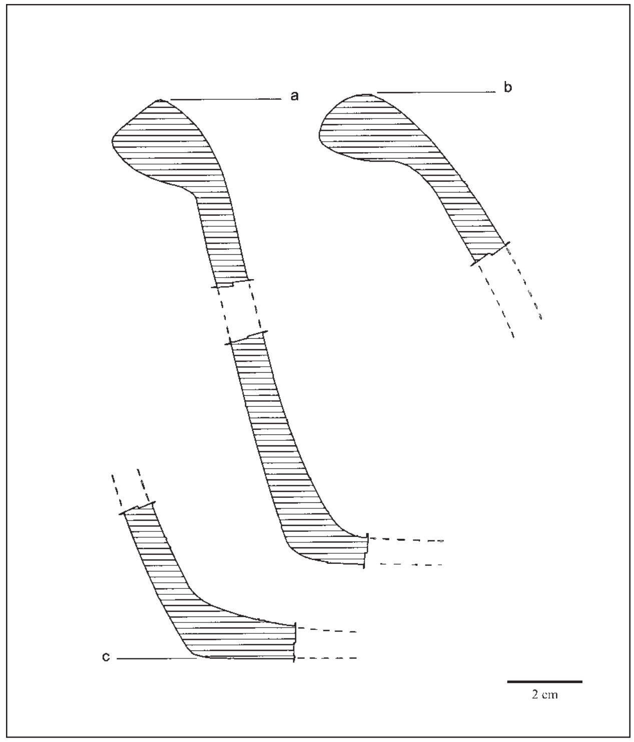


Figure 5.30. a–c. Dzilam Verde: Dizlam.

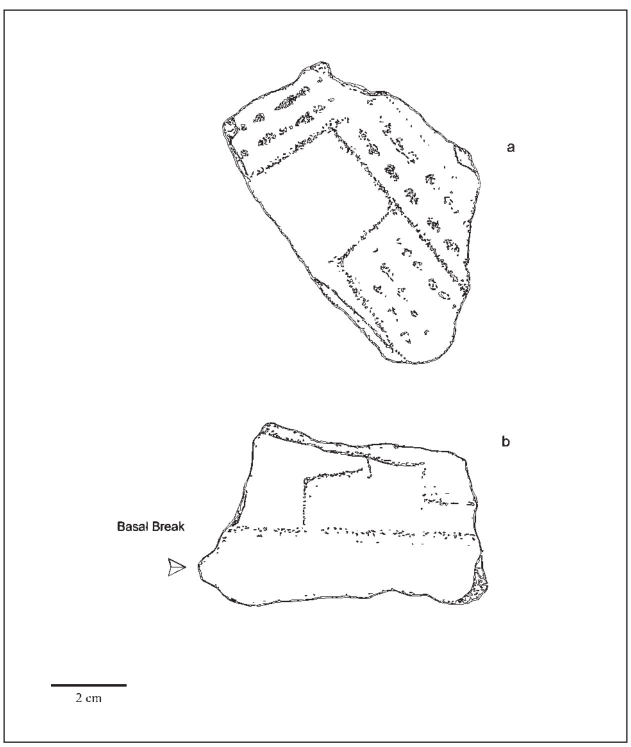


Figure 5.31. a–b. Dzilam Verde: Dzilam.

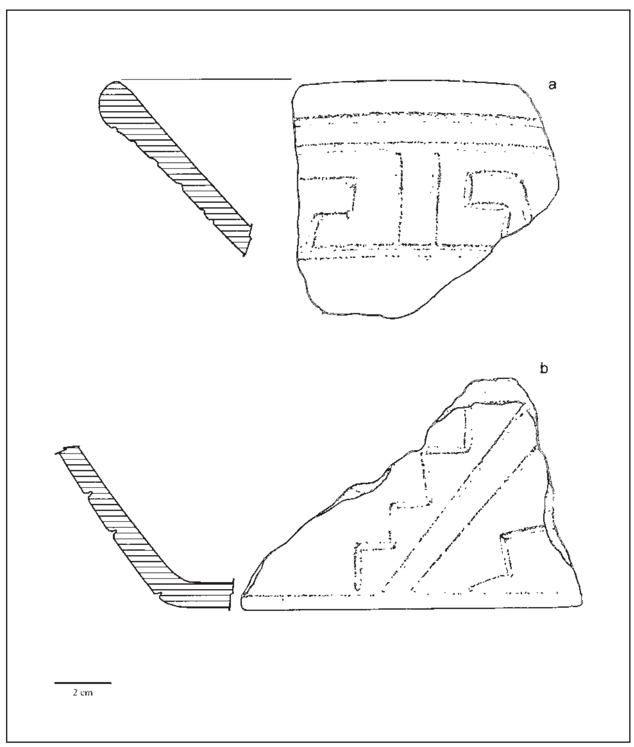


Figure 5.32. a–b. Dzilam Verde: Dzilam (3/8 scale).

Tamanche Variegated-buff: Tamanche
Group: Tamanche
Established by: Andrews V 1989:13–15
Regional Inter-Cave Distribution and Frequency: Actun Toh 3
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:13–15)
Description: see Andrews V 1989:13–15
Type Collection Reference: Komchen Y-10
Forms Present in Caves: Cajete, Cuenco
Illustrations: N/A

Sapote Striated: Sapote
Group: Sapote
Established by: Smith and Gifford 1966:162
Regional Inter-Cave Distribution and Frequency: Actun Maas 2
Regional Intersite Distribution: N/R
Representative General Distribution: Uaxactun (Smith and Gifford 1966:162); El Mirador (Forsyth 1989:46–48)
Description: see Smith and Gifford 1966:162
Type Collection Reference: N/A
Forms Present in Caves: Olla
Illustrations: N/A

Tipikal: Preslip-striated: Tipikal
Group: Tipikal
Established by: Andrews V 1989:1–2
Regional Inter-Cave Distribution and Frequency: Actun Toh 2, Actun Pech 1
Regional Intersite Distribution: N/R
Representative General Distribution: Komchen (Andrews V 1989:1–2)
Description: see Andrews V 1989:1–2
Type Collection Reference: Komchen
Forms Present in Caves: Olla
Illustrations: 5.24,a

Nolo Red: Nolo
Group: Nolo
Established by: Smith 1971:32
Regional Inter-Cave Distribution and Frequency: Actun Toh 15, Actun Pech 3
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:66–67)
Description: see Smith 1971:32; see also Robles Castellanos 1990:66–67
Type Collection Reference: Cobá Q-5-2
Forms Present in Caves: Olla
Illustrations: N/A
Discussion: The tempering of one sherd from the cave collection included particles/inclusions of charcoal, sherd, and limestone. Large particles of limestone were also noted in Nolo Red sherds from the Cobá collection.

Nolo Group Special
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Type Collection Reference: for type: Cobá Q-5-2
Forms Present in Caves: N/A
Illustrations: N/A
Discussion: Similar to sherds designated as “Añejo special (possibly Nolo group)” by Robles Castellanos (1990:88–89).

Caribal Red: Unspecified
Group: Caribal
Established by: Type: Adams 1971:21; Variety: Sabloff 1975:105 (see also Robles Castellanos 67–71)
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:67–71); Ek Balam (Bey et al. 1998)
Description: see Sabloff 1975:105

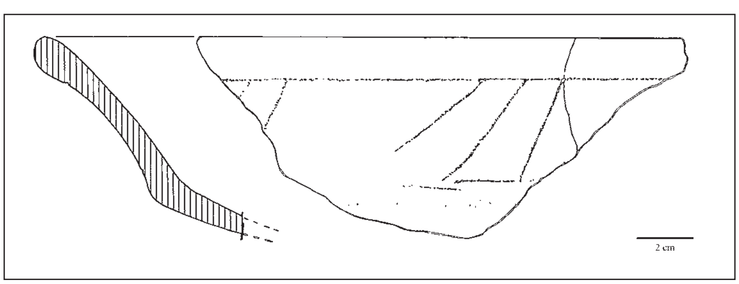


Figure 5.33. Huachinango Bichrome Incised: Huachinango (3/8 scale).

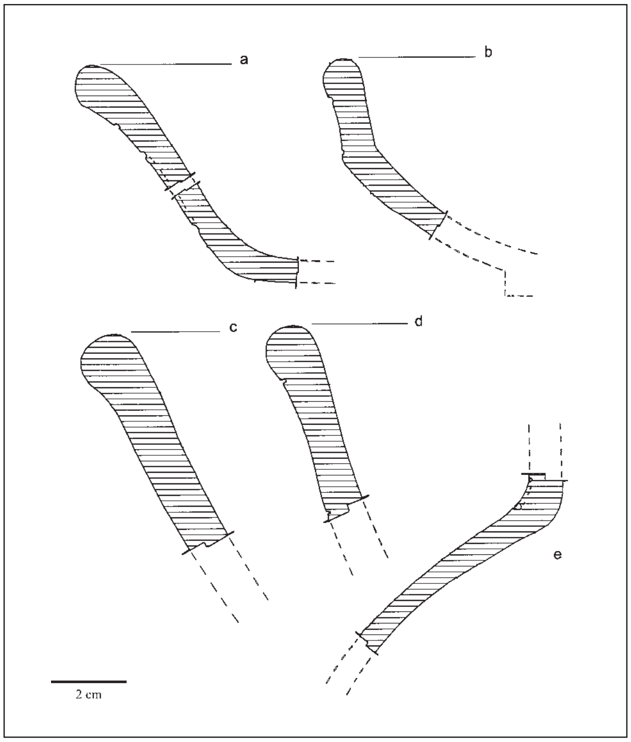


Figure 5.34. a–e. Huachinango Bichrome Incised: Huachinango.

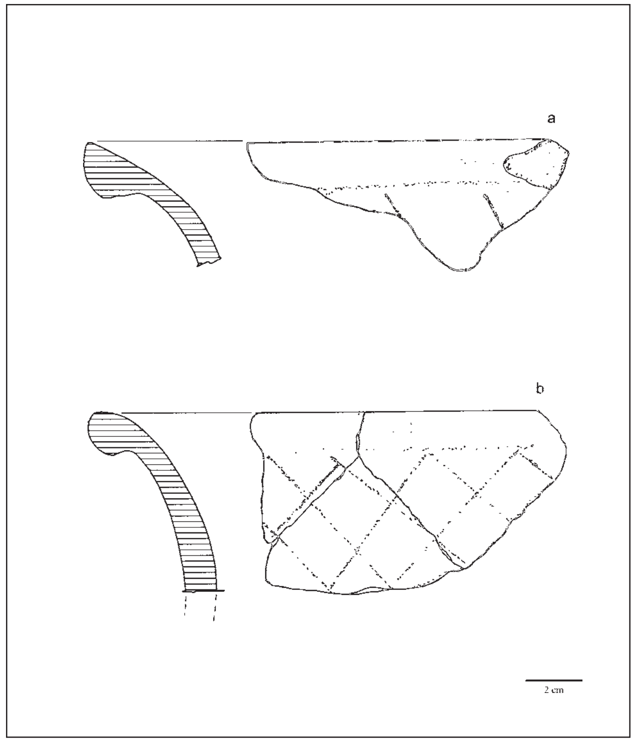


Figure 5.35. a–b. Carolina Bichrome Incised: Carolina (3/8 scale).

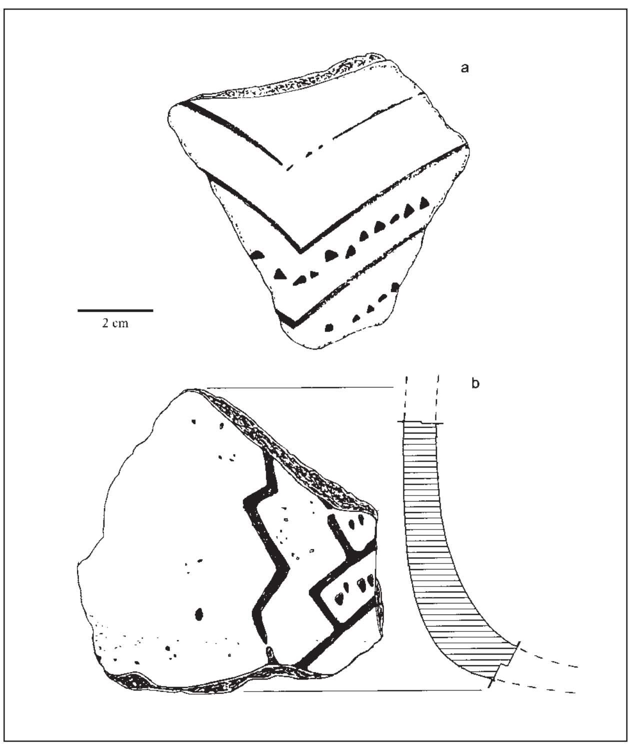


Figure 5.36. a–b. Carolina Bichrome Incised: Carolina.

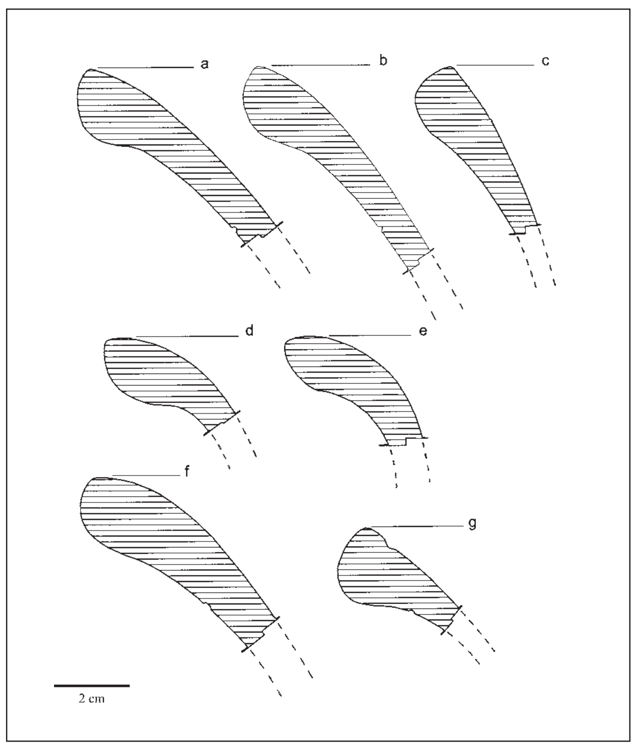


Figure 5.37. a–g. Carolina Bichrome Incised: Carolina.

Type Collection Reference: Cobá Q-5
Forms Present in Caves: N/A
Illustrations: N/A

Xanabá Red: Unspecified
Group: Xanabá
Established by: Smith 1971:31
Regional Inter-Cave Distribution and Frequency: Actun Toh 55, Actun Pech 1
Regional Intersite Distribution: type at T'isil (Ceja Acosta 2000)
Representative General Distribution: Cobá (Robles Castellanos 1990:71–72); type at Ek Balam (Bey et al. 1998); type reported in Chikinchel region (Kepecs 1998)
Description: see Smith 1971:31
Type Collection Reference: Cobá Q-5-2
Forms Present in Caves: Cajete, Olla
Illustrations: 5.25, a–g

Caucel Trickle-on-red: Caucel
Group: Xanabá
Established by: Smith 1971:31
Regional Inter-Cave Distribution and Frequency: Actun Toh 31
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:72–73); Komchen (Andrews V 1988); Balankanché (Brainerd 1958: figs. 7b1, 11; 18c1, 3); Yucatan-Campeche Coast (Ball 1978:104)
Description: see Smith 1971:31
Type Collection Reference: Komchen Y-9-11
Forms Present in Caves: Olla
Illustrations: 5.25, h

Polvero Black: Polvero
Group: Polvero
Established by: Smith and Gifford 1966:161
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Ek Balam (Bey et al. 1998); Edzná (Forsyth 1983); El Mirador (Forsyth 1989:36–38)
Description: see Smith and Gifford 1966:161
Type Collection Reference: Edzná C-12-9
Forms Present in Caves: N/A
Illustrations: 5.24, b
Discussion: Paste of sherds from cave collection is most similar to Edzná.

Lechugal Incised: Lechugal
Group: Polvero
Established by: Smith and Gifford 1966:159
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: El Mirador (Forsyth 1989:38–39)
Description: see Smith and Gifford 1966:159
Type Collection Reference: El Mirador C-25-6
Forms Present in Caves: Cajete
Illustrations: 5.24, c

Ucú Black: Ucú
Group: Ucú
Established by: Smith 1971:32
Regional Inter-Cave Distribution and Frequency: Actun Toh 11, Actun Pech 2
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Unspecified variety reported at Cobá (Robles Castellanos 1990:73–74)
Description: see Smith 1971:32
Type Collection Reference: Cobá Q-5
Forms Present in Caves: Cajete
Illustrations: N/A

Aguacate Orange: Unspecified
Group: Aguacate
Established by: Gifford 1978:129-139
Regional Inter-Cave Distribution and Frequency: Actun Toh 3
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:75–77)
Description: see Gifford 1978:129-139
Type Collection Reference: Cobá Q-5
Forms Present in Caves: Cajete
Illustrations: N/A

Tacopate Trickle-on-brown: Tacopate
Group: Maxcanú
Established by: Ball 1977:53–54
Regional Inter-Cave Distribution and Frequency: Actun Toh 2, Actun Tacbi Ha 3
Regional Intersite Distribution: N/R
Representative General Distribution: Becan (Ball 1977:53–54)
Description: see Ball 1977:53–54
Type Collection Reference: El Resbalón
Forms Present in Caves: Olla
Illustrations: 5.26

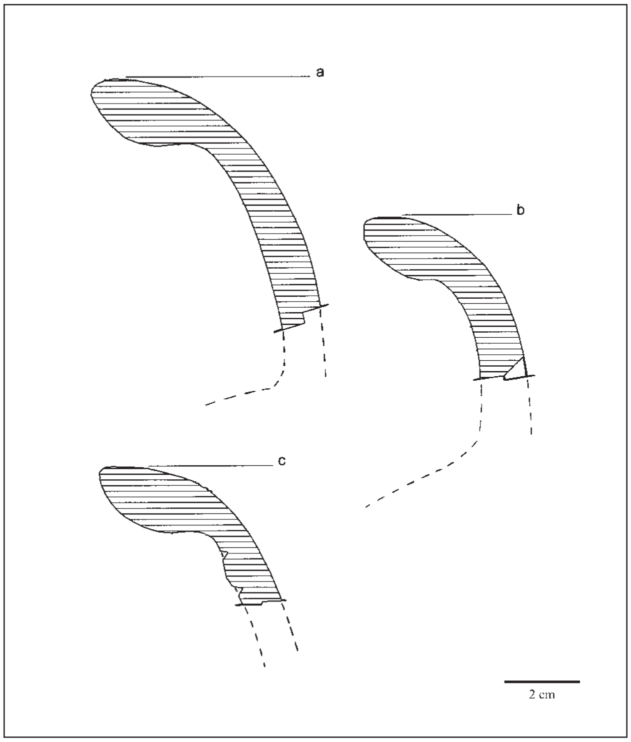


Figure 5.38. a–c. Carolina Bichrome Incised: Carolina.

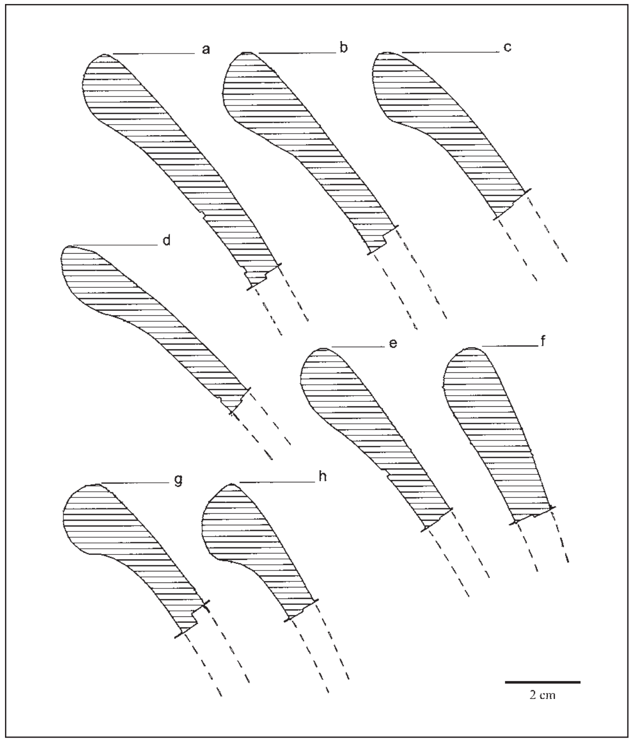


Figure 5.39. a–h. Carolina Bichrome Incised: Carolina.

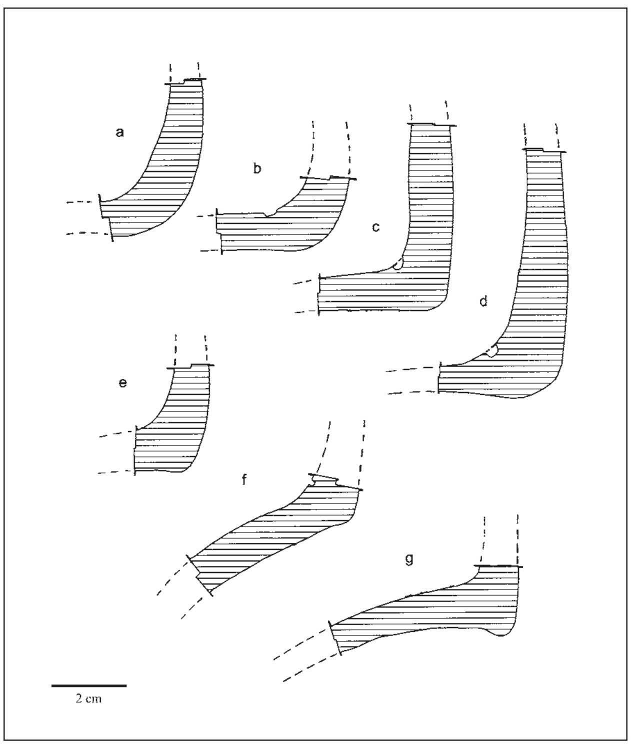


Figure 5.40. a–g. Carolina Bichrome Incised: Carolina.

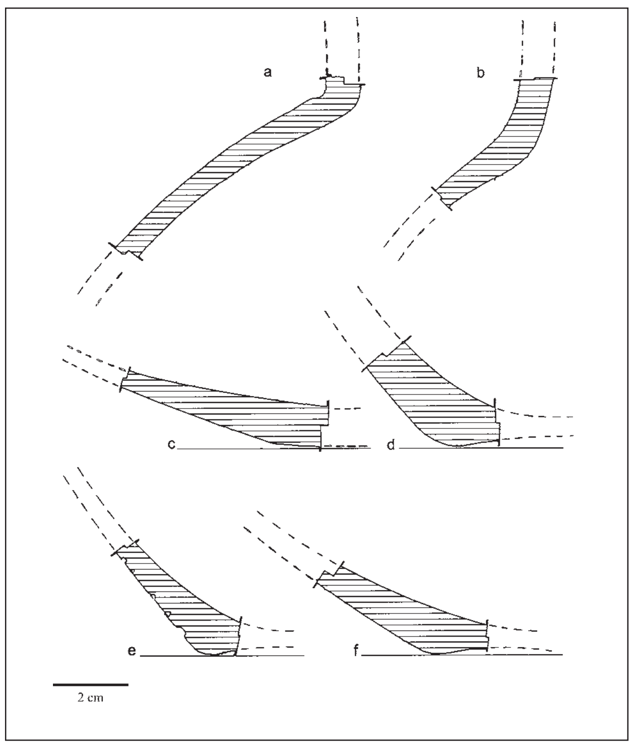


Figure 5.41. a–f. Carolina Bichrome Incised: Carolina.

Discussion: Paste is moderately compact, porous, and friable. Tempering includes small to medium calcite particles. Rim is direct, with an interior-beveled lip. Lip has two circumferential thumbnail incisions. Black trickle decoration begins just below the lip (as a cross-like motif) and bifurcates past the neck in broad stripes. The slip of the vessel ranges from light brown (7.5YR 6/4) to reddish brown (5YR 5/4). Paint is a deep black (2.5N). Slip is thin and crazing is visible. The black paint has discolored the underlying slip, which suggests the pigment was mildly acidic. The color of this underlying "stain" (visible along the edges of the trickle decoration) is red (2.5YR 5/6).

Tolok Black-on-orange: Tolok
Group: Unspecified
Established by: Robles Castellanos 1990:79–80
Regional Inter-Cave Distribution and Frequency: Actun Toh 3
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:79–80)
Description: see Robles Castellanos 1990:79–80
Type Collection Reference: Cobá Q-5
Forms Present in Caves: Olla
Illustrations: N/A

Kantenah Black-on-orange Special
Group: Unspecified
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Xelha (Canché 1992:91)
Description: Canché 1992:91
Type Collection Reference: N/A
Forms Present in Caves: Olla
Illustrations: N/A

Kantenah Red-on-orange Special
Group: Unspecified
Established by: Type: Canché 1992:89
Regional Inter-Cave Distribution and Frequency: Pak Ch'en 1
Regional Intersite Distribution: type at T'isil (Ceja Acosta 2000)
Representative General Distribution: type at Xelha (Canché 1992:89)
Description: for type: Canché 1992:89
Type Collection Reference: N/A
Forms Present in Caves: N/A
Illustrations: 5.24, d
Discussion: Paint has been applied to the sherd with a brush (not by trickle technique). Orange slip is 5YR 6/6. Painted decoration is 10R 4/8. Interior surface is unslipped.

Shangurro Red-on-orange: Unspecified
Group: Unspecified
Regional Inter-Cave Distribution and Frequency: Actun Toh 2
Regional Intersite Distribution: N/R
Representative General Distribution: N/A
Description: N/A
Type Collection Reference: N/A
Forms Present in Caves: N/A
Illustrations: N/A

Dzilam Verde Incised: Dzilam
Group: Dzilam
Established by: Robles Castellanos 1990:85–86
Regional Inter-Cave Distribution and Frequency: Actun Toh 103, Actun Pech 23, Pak Ch'en 1
Regional Intersite Distribution: El Naranjal (personal observation)
Representative General Distribution: Cobá (Robles Castellanos 1990:85–86); Ek Balam (Bey et al. 1998); Komchen (Andrews V 1989
Description: see Robles Castellanos 1990:85–86
Type Collection Reference: Cobá Q-5-3
Forms Present in Caves: Cajete, Olla
Illustrations: 5.27, a–f; 5.28, a–f; 5.29, a–c; 5.30, a–c; 5.31, a–b; 5.32, a–b
Discussion: Decoration on sherd in figure 5.31a is very similar to a Habana Club Punctated sherd from Xelha (Q-14-6) and a sherd designated as Unspecified Composite Incised and Punctated Red Type from Ball (1978:119, fig 2d), see also Yucatan Campeche Coast (Y-7-3).

Huachinango Bichrome Incised: Huachinango
Group: Huachinango
Established by: Ball 1978:110
Regional Inter-Cave Distribution and Frequency: Actun Toh 37, Actun Pech 5, Actun Tam Ha 1
Regional Intersite Distribution: El Naranjal (Boucher 1997); T'isil (Ceja Acosta 2000)
Representative General Distribution: Cobá (Robles Castellanos 1990:81–82); Ek Balam (Bey et al. 1998; see also Vargas de la Peña and Castillo Borges 1999:28–29); Komchen (Andrews V 1989)
Description: see Ball 1978:110
Type Collection Reference: Cobá Q-5
Forms Present in Caves: Cajete, Olla
Illustrations: 5.33; 5.34, a–e

Discussion: Olla forms are relatively common in the cave collection and are reported at Cobá (Robles Castellanos 1990:82). However, they appear to be rare to non-existent at Ek Balam (Tara Bond, personal communication 2000). The direct, rounded rims of many of the sherds from the cave collection are characteristic of early forms.

Carolina Bichrome Incised: Carolina
Group: Carolina
Established by: Robles Castellanos 1988:66
Regional Inter-Cave Distribution and Frequency: Actun Toh 446, Actun Pech 126, Pak Ch'en 8
Regional Intersite Distribution: El Naranjal (Boucher 1997); Grupo Chan Pich (personal observation); T'isil (Ceja Acosta 2000); Kantunilkin, Chiquilá, Leona Vicario (as Tancah Variegated, Sanders 1960:251–252)
Representative General Distribution: Isla Cerritos (Robles Castellanos 1988:66); Cobá (as "Unnamed Red-on-cream," Robles Castellanos 1990:87–88); Ek Balam (Bey et al. 1998); Tancah (as Tancah Variegated, Sanders 1960); Xelha (Canche M. 1992); Yucatán-Campeche Coast (as "Unspecified Incised-dichrome Type" Ball 1978:118); San Gervasio
(Peraza 1993); Yaxuna (Brainerd 1958:120)
Description: see Robles Castellanos 1988:66
Type Collection Reference: Isla Cerritos Y-53-5; Xelha Q-14-3, San Gervasio Q-11-4
Forms Present in Caves: Cajete, Olla
Illustrations: 5.35, a–b; 5.36, a–b; 5.37, a–g; 5.38, a–c; 5.39, a–h; 5.40, a–g; 5.41, a–f
Discussion: Paste and tempering is occasionally quite similar to Huachinango Bichrome Incised. The occasional fiber-tempering of sherds (as well as the occurrence of olla forms for this type) was also noted at Ek Balam (Tara Bond, personal communication 2000). At least one fiber-tempered sherd was observed in the Isla Cerritos collection. Also present in the same collection is the almond-shaped everted rim style, which is well represented in cave collection and possibly constitutes a later development. Decoration typically consists of postfire and postslip incisions and punctations. Painted decoration consists of red-on-cream lines and dots. The striating of olla interiors (both neck and shoulder) common in the cave collection is also present in the Xelha collection (Q-14-3). Olla slips appear to be better adhered than those of cajetes. In terms of form and decoration, olla necks are similar to those from the Cobá collection (as "Unnamed Red-on-Cream").

Early Classic
AD 350 – AD 600

Group	Type: Variety
Aguila	Aguila Orange: Aguila
	Aguila Orange: Unspecified
Sabán	Sabán Burdo: Sabán
	Sabán Burdo: Becoob
Balanza	Balanza Black: Unspecified
	Lucha Incised: Unspecified
Cetelac	Cetelac Fiber-tempered: Cetelac
	Cetelac Fiber-tempered: Xcán
Unspecified	Xoclan Trickle-on-red: Xoclan
Dos Arroyos	Dos Arroyos Orange Polychrome: Dos Arroyos
	Caldero Buff Polychrome: Unspecified
	San Blas Red-on-orange: Unspecified
Timucuy	Timucuy Orange Polychrome: Timucuy
	Tituc Orange Polychrome: Tituc
	Tituc Orange Polychrome: Banded
	Tituc Orange Polychrome: Camichín
	Tituc Orange Polychrome: Unspecified

Aguila Orange: Aguila
Group: Aguila
Established by: Smith and Gifford 1966:154, 171
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha 1
Regional Intersite Distribution: El Naranjal (personal observation)
Representative General Distribution: type at Ek Balam (Bey et al. 1998)
Description: see Smith and Gifford 1966:154, 171
Type Collection Reference: N/A
Forms Present in Caves: Cajete
Illustrations: N/A

Aguila Orange: Unspecified
Group: Aguila
Established by: Type: Smith and Gifford 1966:154
Regional Inter-Cave Distribution and Frequency: Actun Toh 5
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:94–97); type: Ek Balam (Bey et al. 1998); Komchen (Andrews V 1988)
Description: see Smith and Gifford 1966:154

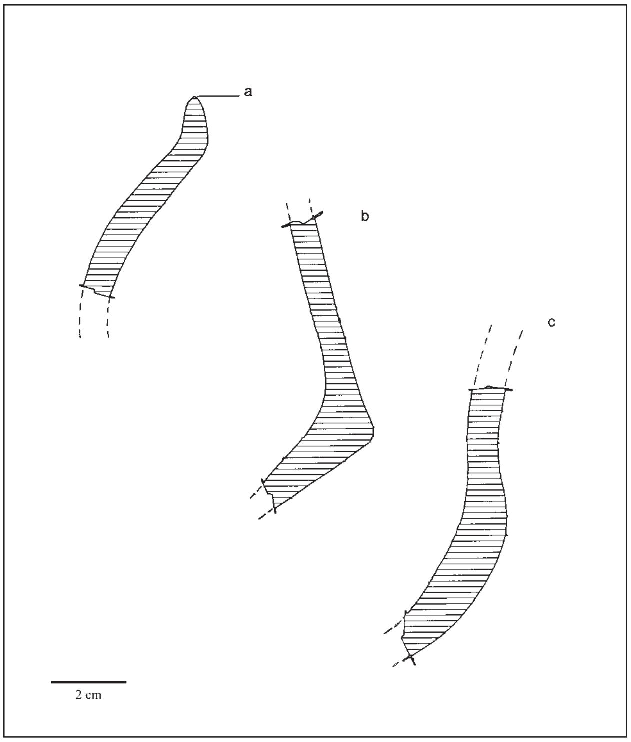


Figure 5.42. a. Aguila Orange: Unspecified. b–c. Sabán Burdo: Sabán.

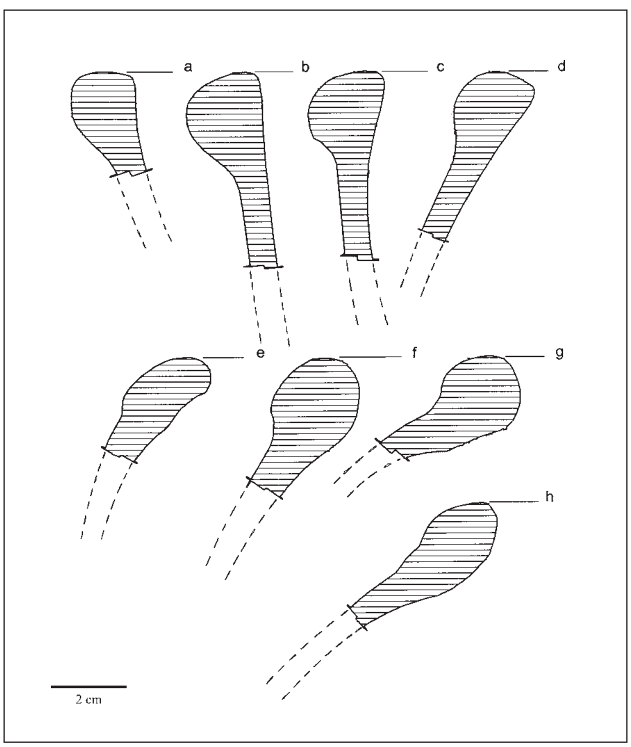


Figure 5.43. a–h. Sabán Burdo: Becoob.

Type Collection Reference: Komchen Y-8-4
Forms Present in Caves: Olla
Illustrations: 5.42, a

Sabán Burdo: Sabán
Group: Sabán
Established by: Smith 1971:31
Regional Inter-Cave Distribution and Frequency: Actun Toh 100, Actun Pech 10, Actun Maas 16, Actun Tsub 1, Pak Ch'en 13
Regional Intersite Distribution: El Naranjal (Boucher 1997); Group: Chiquilá, Vista Alegre (Romero R. and Gurrola B. 1995).
Representative General Distribution: Gruta de Xcán (Márquez de González et al. 1982:86); Cobá (Robles Castellanos 1990:92–93)
Description: see Smith 1971:31
Type Collection Reference: Cobá Q-5
Forms Present in Caves: Olla
Illustrations: 5.42, b–c
Discussion: Sherds from cave collection strongly resemble Achiote Unslipped: Sabán from Komchen.

Sabán Burdo: Becoob
Group: Sabán
Established by: Type: Smith 1971:31, Variety: Robles Castellanos 1990:93–94
Regional Inter-Cave Distribution and Frequency: Actun Toh 238, Actun Tacbi Ha 10, Actun Pech 6, Actun Maas 1, Pak Ch'en 1
Regional Intersite Distribution: El Naranjal (personal observation); Grupo Chan Pich (personal observation); T'isil (Ceja Acosta 2000)
Representative General Distribution: Gruta de Xcán (Márquez de González et al. 1982:84–86); Cobá (Robles Castellanos 1990:93–94)
Description: see Robles Castellanos 1990:93–94
Type Collection Reference: Cobá Q-5
Forms Present in Caves: Tecomate
Illustrations: 5.43, a–h; 5.44, a–e

Balanza Black: Unspecified
Group: Balanza
Established by: Type: Smith and Gifford 1966:154, Variety: Gifford 1976:161 (see also Robles Castellanos 1990:97–98)
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:97–98); type: Ek Balam (Bey et al. 1998)
Description: see Gifford 1976:161

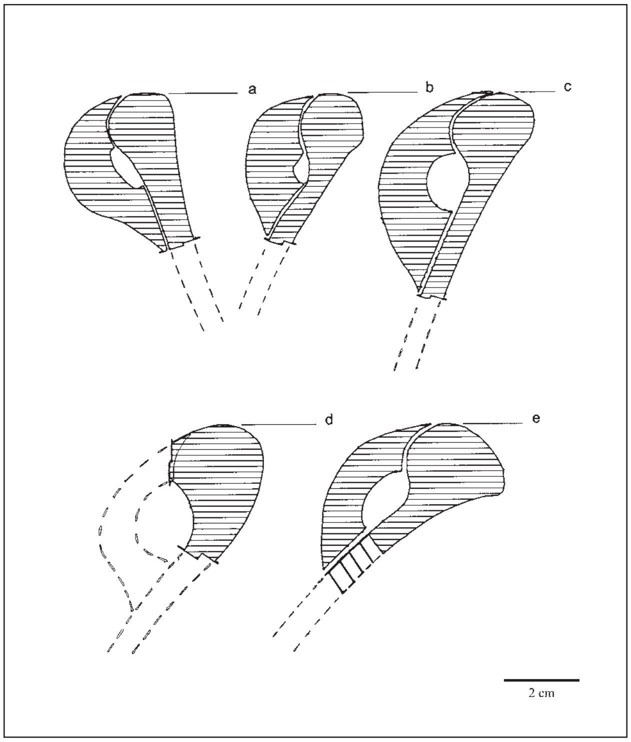


Figure 5.44. a–e. Sabán Burdo: Becoob.

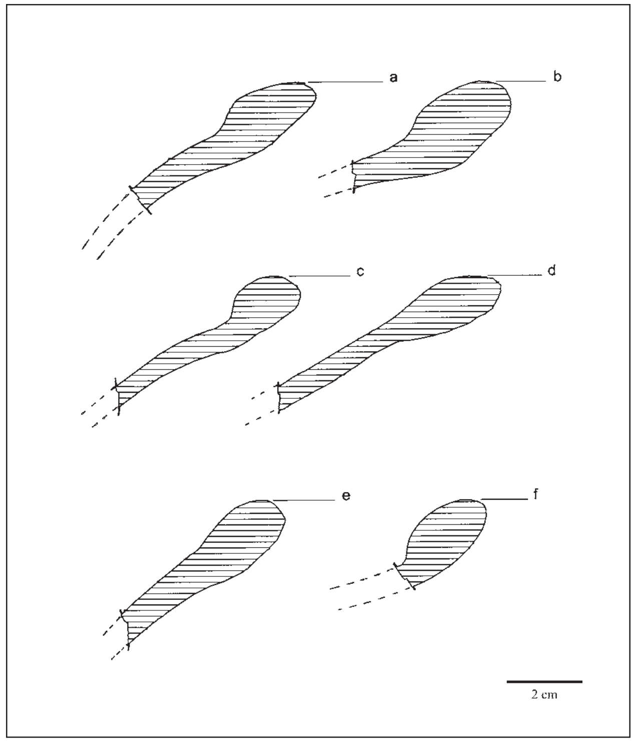


Figure 5.45. a–f. Cetelac Fiber-tempered: Cetelac.

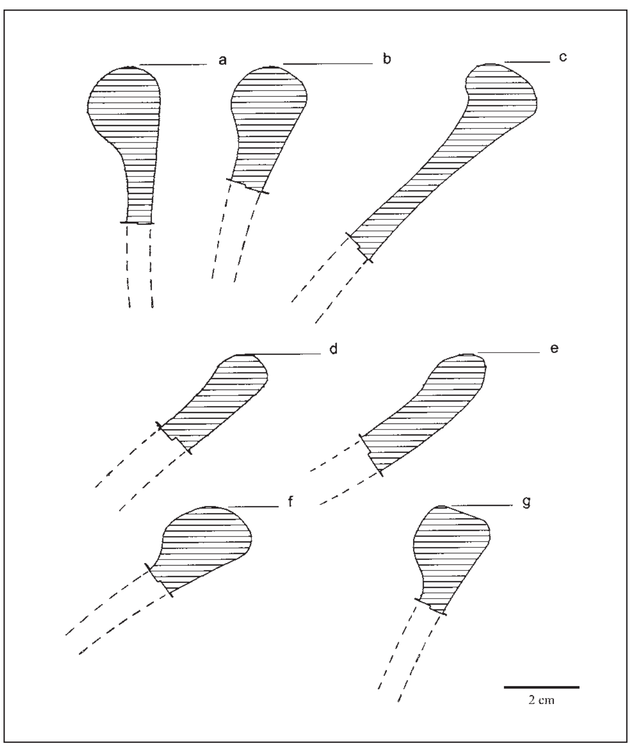


Figure 5.46. a–g. Cetelac Fiber-tempered: Cetelac.

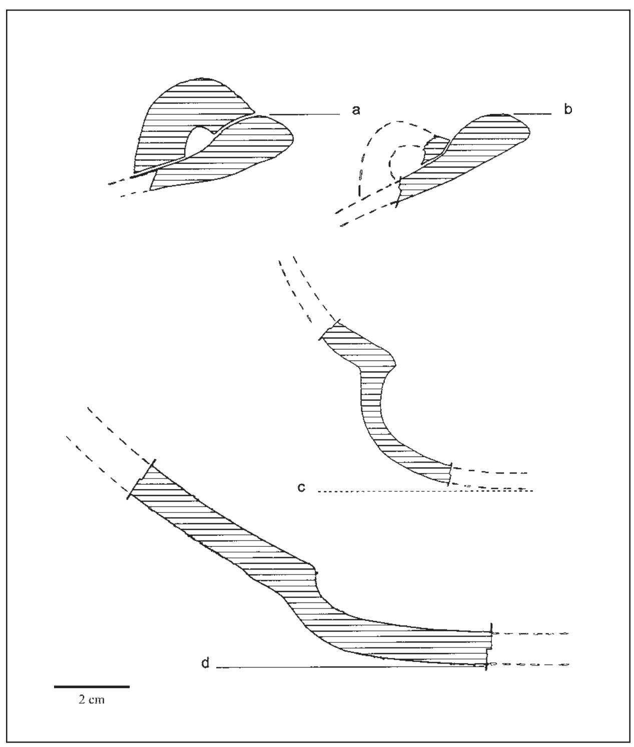


Figure 5.47. a–d. Cetelac Fiber-tempered: Cetelac.

Type Collection Reference: Cobá Q-5-5
Forms Present in Caves: Cajete
Illustrations: N/A

Lucha Incised: Unspecified
Group: Balanza
Established by: Smith and Gifford 1966:159
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:102–104)
Description: see Smith and Gifford 1966:159
Type Collection Reference: Cobá Q-5-5
Forms Present in Caves: Tecomate
Illustrations: N/A

Cetelac Fiber-tempered: Cetelac
Group: Cetelac
Established by: Smith 1971:133
Regional Inter-Cave Distribution and Frequency: Actun Toh 190, Actun Tacbi Ha 42, Actun Pech 2, Pak Ch'en 2
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Cobá (Robles Castellanos 1990:107–108); type at Ek Balam (Bey et al. 1998); El Meco (Andrews and Robles Castellanos 1986)
Description: see Smith 1971:133
Type Collection Reference: Cobá Q-5
Forms Present in Caves: Tecomate
Illustrations: 5.45, a–f; 5.46, a–g; 5.47, a–d

Cetelac Fiber-tempered: Xcán
Group: Cetelac
Established by: Schmidt (in Márquez de González et al. 1982:86–87)
Regional Inter-Cave Distribution and Frequency: Actun Toh 147, Pak Ch'en 2
Regional Intersite Distribution: T'isil (Ceja Acosta, personal communication)
Representative General Distribution: Gruta de Xcán (Márquez de González et al. 1982:86–87); Balankanché (collection by Shook and Smith 1954, classified by Boucher 1977)
Description: see Márquez de González et al. 1982:86–87
Type Collection Reference: Gruta de Xcan Y-41-10; Balankanché Y-13-4
Forms Present in Caves: Olla
Illustrations: 5.48, a–f; 5.49, a–f
Discussion: Rims from cave collection strongly resemble those from Balankanché.

Xoclan Trickle-on-red: Xoclan
Group: Unspecified
Established by: Ball 1977:53
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha N/A
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:112)
Description: see Ball 1977:53
Type Collection Reference: N/A
Forms Present in Caves: N/A
Illustrations: N/A

Dos Arroyos Orange Polychrome: Dos Arroyos
Group: Dos Arroyos
Established by: Smith and Gifford 1966:157
Regional Inter-Cave Distribution and Frequency: Actun Maas 1
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Cobá (Robles Castellanos 1990:114–116); type: Ek Balam (Bey et al. 1998)
Description: see Smith and Gifford 1966:157
Type Collection Reference:
Forms Present in Caves: Cajete
Illustrations: 5.50, a

Caldero Buff Polychrome: Unspecified
Group: Dos Arroyos
Established by: Smith and Gifford 1966:155
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:116–117); Yaxuna (Suhler et al. 1998:174).
Description: see Smith and Gifford 1966:155
Type Collection Reference: Cueva de Santa Isabel (*cajita* above Q-6)
Forms Present in Caves: Cajete
Illustrations: 5.50, b

San Blas Red-on-orange: Unspecified
Group: Dos Arroyos
Established by: Smith and Gifford 1966:162
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:119–121)
Description: see Smith and Gifford 1966:162
Type Collection Reference: Cobá Q-5-6

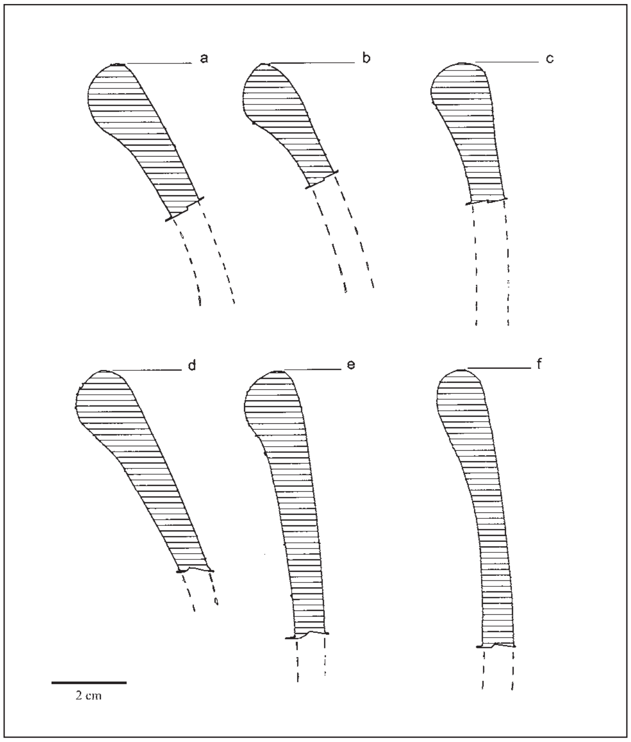


Figure 5.48. a–f. Cetelac Fiber-tempered: Xcán.

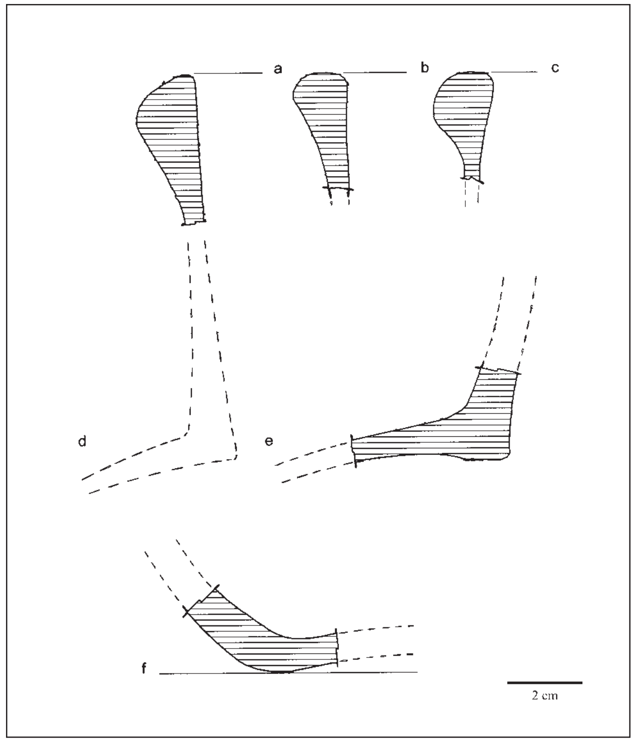


Figure 5.49. a–f. Cetelac Fiber-tempered: Xcán.

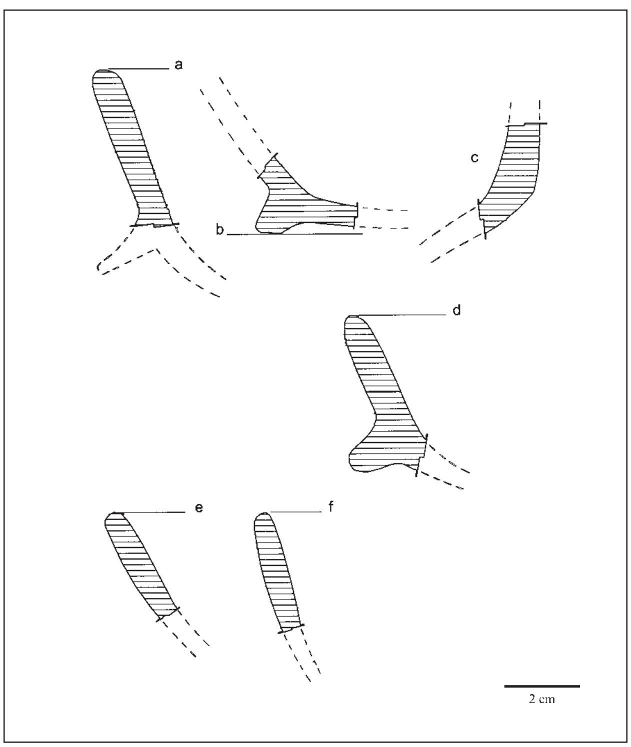


Figure 5.50. a. Dos Arroyos Orange Polychrome: Dos Arroyos. b. Caldero Buff Polychrome: Unspecified. c. Timucuy Orange Polychrome: Timucuy. d–f. Tituc Orange Polychrome: Camichín.

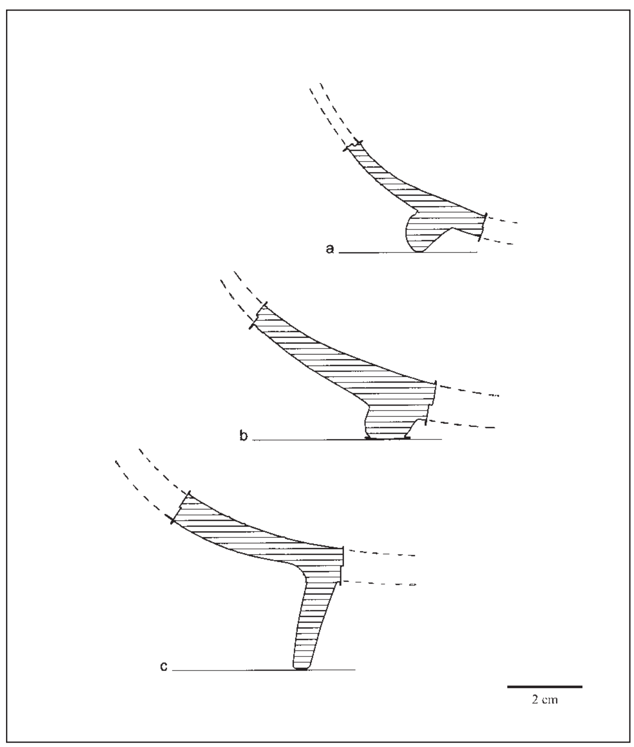


Figure 5.51. a–c. Tituc Orange Polychrome: Camichín.

Forms Present in Caves: N/A
Illustrations: N/A

Timucuy Orange Polychrome: Timucuy
Group: Timucuy
Established by: Smith 1971:31–32
Regional Inter-Cave Distribution and Frequency: Actun Tsub 2
Regional Intersite Distribution: Possibly at El Naranjal (personal observation)
Representative General Distribution: type at Ek Balam (Bey et al. 1998)
Description: see Smith 1971:31–32
Type Collection Reference: Oxkintok
Forms Present in Caves: Olla
Illustrations: 5.50, c

Tituc Orange Polychrome: Tituc
Group: Timucuy
Established by: Smith 1971:31–32
Regional Inter-Cave Distribution and Frequency: Actun Toh 10
Regional Intersite Distribution: N/R
Representative General Distribution: Gruta de Xcán (Márquez de González et al. 1982:88); possibly at Cobá (Robles Castellanos 1990:121–122); type at Ek Balam (Bey et al. 1998) and Yaxuna (Suhler et al. 1998:174).
Description: see Smith 1971:31–32
Type Collection Reference: Cobá Q-5
Forms Present in Caves: Cajete
Illustrations: N/A

Tituc Orange Polychrome: Banded
Group: Timucuy
Established by: Type: Smith 1971:31–32, Variety: Robles Castellanos 1990:122–123
Regional Inter-Cave Distribution and Frequency: Actun Toh 2
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:122–123)
Description: see Robles Castellanos 1990:122–123
Type Collection Reference: Cobá Q-5-7
Forms Present in Caves: Cajete
Illustrations: N/A

Tituc Orange Polychrome: Camichín
Group: Timucuy
Established by: Type: Smith 1971:31–32, Variety: Ball and Andrews V 1975:231–232
Regional Inter-Cave Distribution and Frequency: Actun Toh 2
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:123–125)
Description: see Ball and Andrews V 1975:231–232
Type Collection Reference: Cobá Q-5-7
Forms Present in Caves: annular-base Plate, basal-flange Cajete, possibly Olla
Illustrations: 5.50, d–f; 5.51, a–c

Tituc Orange Polychrome: Unspecified
Group: Timucuy
Established by: Type: Smith 1971:31–32
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha 13
Regional Intersite Distribution: N/R
Representative General Distribution: N/A
Description: Type: Smith 1971:31–32
Type Collection Reference: N/A
Forms Present in Caves: annular-base Cajete
Illustrations: N/A

Late Classic to Terminal Classic
AD 600 – AD 1200

Group	Type: Variety
Batres	Batres Red: Batres
Arena	Arena Red: Arena
Saxché	Saxché Orange Polychrome: Saxché
	Sibal Buff Polychrome: Unspecified
Petkanche	Petkanche Orange Polychrome: Unspecified
Sat	Chemax Black-on-preslate: Chemax
	Yaxuná Striated-preslip: Yaxuná
Chumul	Janan Orange Polychrome: Janan
	Janan Orange Polychrome Special
Vista Alegre	Vista Alegre Striated: Vista Alegre
	Vista Alegre Striated: Chen Río
	Vista Alegre Striated: Unspecified
Muna	Muna Slate: Muna
	Sacalum Black-on-slate: Sacalum
Teabo	Teabo Red: Teabo
	Tekax Black-on-red: Tekax

Batres Red: Batres
Group: Batres
Established by: Smith 1971:32
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:137–139); Ek Balam (Bey et al. 1998)

Description: see Smith 1971:32
Type Collection Reference: Cobá Q-5
Forms Present in Caves: N/A
Illustrations: N/A

Arena Red: Arena
Group: Arena
Established by: Robles Castellanos 1990:148–149
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha 1
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Cobá (Robles Castellanos 1990:148–149); type at Ek Balam (Bey et al. 1998) and Yaxuna (Suhler et al. 1998:177).
Description: see Robles Castellanos 1990:148–149
Type Collection Reference: N/A
Forms Present in Caves: N/A
Illustrations: N/A

Saxché Orange Polychrome: Saxché
Group: Saxché
Established by: Smith and Gifford 1966:162
Regional Inter-Cave Distribution and Frequency: Actun Toh 16
Regional Intersite Distribution: Possibly at El Naranjal (personal observation); Group: Vista Alegre (Romero R. and Gurrola B. 1995)
Representative General Distribution: Cobá (Robles Castellanos 1990:160–161); type at Ek Balam (Bey et al. 1998) and Yaxuna (Suhler et al. 1998:177); Altun Ha (Pendergast 1979).
Description: see Smith and Gifford 1966:162; see also Robles Castellanos 1990:160–161
Type Collection Reference: Cobá Q-6-3
Forms Present in Caves: Tecomate, Cuenco, Olla
Illustrations: 5.52, a–d; 5.53; 5.54, a–b; 5.55, a–d; 5.56, a–f
Discussion: There are essentially two kinds of Saxché Orange Polychrome present in the Actun Toh collection. One sherd is characterized by a fine, compact, and consistent paste. Calcite temper is fine and well sorted. Slip is extremely glossy. Body thickness varied from .22cm–.36cm. Overall, the sherd was characteristic of Petén examples (like those from Cobá). The remainder of the Saxché Orange Polychrome sherds are characterized by moderately compact, semi-fine paste. Temper is moderately well sorted, consisting of fine to medium size white and gray calcite particles. The occasional coarse particle is common, measuring up to .48cm in diameter. Paste color is 5YR 6/6. Of particular interest is the interior lip treatment on

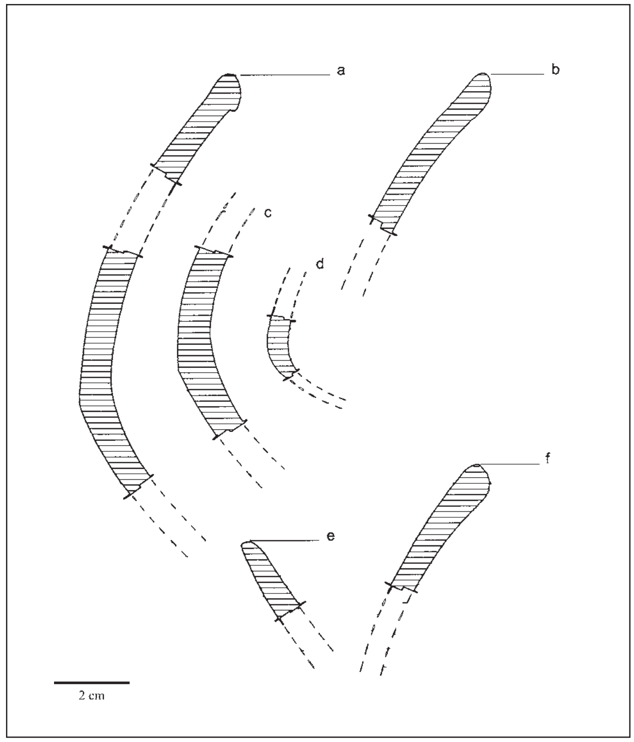


Figure 5.52. a–d. Saxché Orange Polychrome: Saxché. e–f. Sibal Buff Polychrome: Unspecified.

Figure 5.53. Saxché Orange Polychrome: Saxché.

restricted-orifice rim sherds. These rims are interior-thickened rather than pointed. At base of the interior lip is an irregular "flap" or fold that was not smoothed flush with the lip. Due to the restricted nature of these vessels, the imperfection would not have been visible. Ochoa R. suggests that the sherds from the cave collection might represent local copies of Petén styles. With respect to the tone and tempering of the paste, similar sherds are present in the Xelha collection (as Saxché: Unspecified, Q-13-4) and the Uaymil collection (Q-8-8). The tempering of the sherds in the latter collection is better sorted that the cave material, and contains tiny quartz and ferrous particles. Decoration consists of painted geometric designs. No glyphs are present. Fine painted lines are reddish brown (2.5YR 3/3) to dark reddish gray (10R 3/1). Broad painted bands are red (10R 4/8, 5/8). Underlying slip is reddish yellow (5YR 6/8).

Sibal Buff Polychrome: Unspecified
Group: Saxché
Established by: Smith and Gifford 1966:139
Regional Inter-Cave Distribution and Frequency: Actun Toh 2, Pak Ch'en 2
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:161–162)
Description: see Smith and Gifford 1966:139
Type Collection Reference: Cobá Q-6-3
Forms Present in Caves: Cuenco
Illustrations: 5.51, e–f

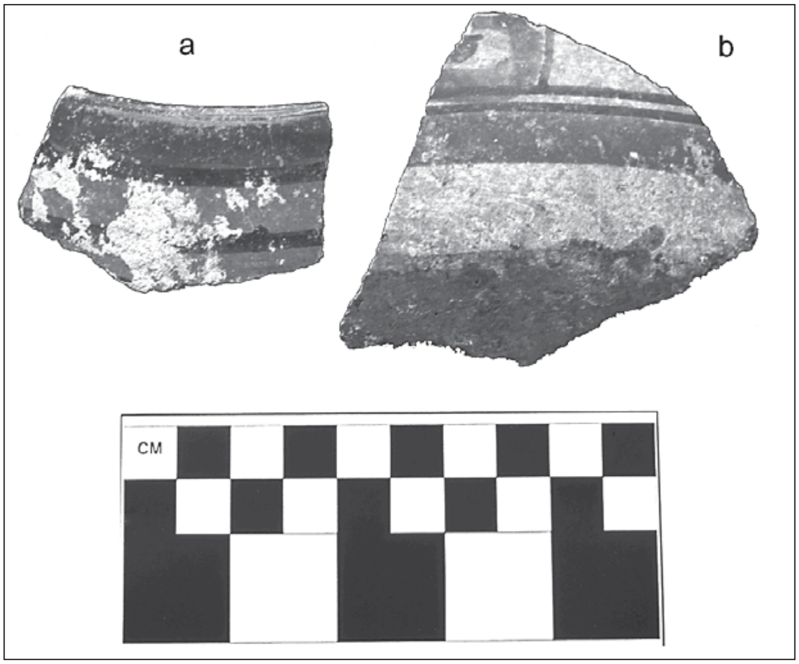
Petkanche Orange Polychrome: Unspecified
Group: Petkanche
Established by: Ball 1977:72
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha (whole vessel)
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:162–164); Tancah, Yaxuna, and Dzibilchaltun (Ball 1991); see also Reents-Budet (1994)
Description: See Ball 1977:72
Type Collection Reference: N/A
Forms Present in Caves: Vase
Illustrations: 5.57
Discussion: Scene on vessel depicts a water bird among other elements. The cream-colored body of the bird ranged from 10YR 8/3 to 8/4. Reddish portions of the beak, wing, and leg ranged from 5YR 7/8 to 10R 5/8.

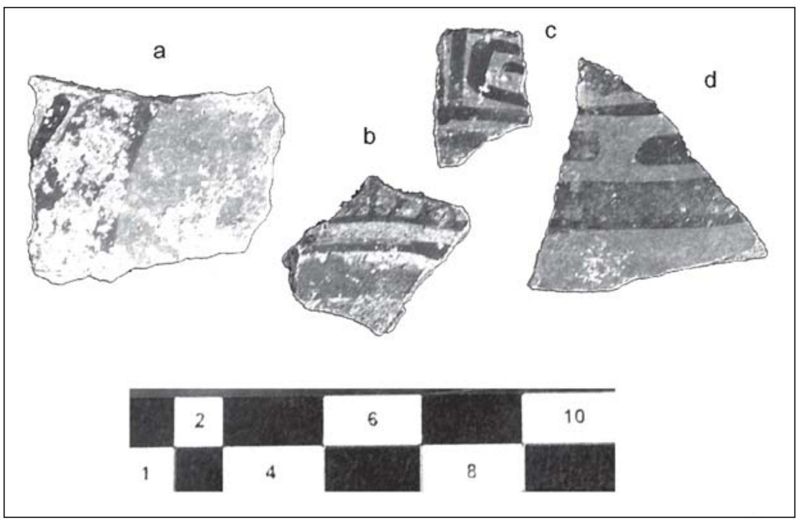
Chemax Black-on-preslate: Chemax
Group: Sat
Established by: Varela 1994
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha 1
Regional Intersite Distribution: N/R
Representative General Distribution: N/A
Description: see Varela 1994
Type Collection Reference: Oxkintok
Forms Present in Caves: N/A
Illustrations: N/A

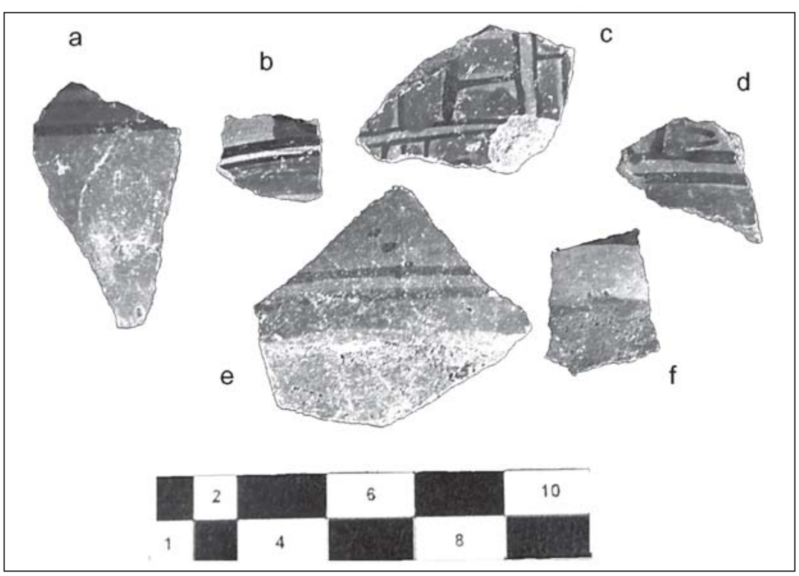
Yaxuna Striated-preslip: Yaxuna
Group: Sat
Established by: Varela 1994
Regional Inter-Cave Distribution and Frequency: Actun Maas 3
Regional Intersite Distribution: N/R
Representative General Distribution: N/A
Description: see Varela 1994
Type Collection Reference: Oxkintok Y-108-7
Forms Present in Caves: Cazuela
Illustrations: 5.58, a

Janan Orange Polychrome: Janan
Group: Chumul
Established by: Connor 1983:121–123
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Cozumel (Connor 1983:121–123), Xelha (Canche 1991)
Description: See Connor 1983:121–123
Type Collection Reference: San Gervasio Q-10-1
Forms Present in Caves: Cajete
Illustrations: 5.58, b–c
Discussion: Although solid tripod supports are common for this type, one sherd from the cave collection has a low ring base. A portion of its exterior is rough and unslipped. At least two sherds from Ball's Yucatan-Campeche Coast collection appear to correspond to Janan Orange Polychrome (labeled a "Unspecified Polychromes," Y-7-5).

Janan Orange Polychrome Special
Group: Chumul
Established by: Type: Connor 1983:121–123
Regional Inter-Cave Distribution and Frequency: Actun Toh 1
Regional Intersite Distribution: N/R
Representative General Distribution:
Description: N/A







Top: Figure 5.54. a–b. Saxché Orange Polychrome: Saxché.

Middle: Figure 5.55. a–d. Saxché Orange Polychrome: Saxché.

Bottom: Figure 5.56. a–f. Saxché Orange Polychrome: Saxché.

Type Collection Reference: N/A
Forms Present in Caves: N/A
Illustrations: N/A

Vista Alegre Striated: Vista Alegre
Group: Vista Alegre
Established by: Sanders 1960:248
Regional Inter-Cave Distribution and Frequency: Actun Toh 7, Actun Tacbi Ha 58
Regional Intersite Distribution: El Naranjal (Boucher 1997); Vista Alegre, Chiquilá, El Diez, Monte Bravo (Sanders 1960)
Representative General Distribution: Cobá (Robles Castellanos 1990:178–179); type at Ek Balam (Bey et al. 1998); El Meco (Andrews and Robles Castellanos 1986)
Description: see Sanders 1960:248
Type Collection Reference: Cobá Q-6-5
Forms Present in Caves: Tecomate
Illustrations: 5.58, e

Vista Alegre Striated: Chen Río
Group: Vista Alegre
Established by: Type: Sanders 1960:248
Regional Inter-Cave Distribution and Frequency: Actun Toh 9
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Ek Balam (Bey et al. 1998)
Description: see Peraza Lope 1993
Type Collection Reference: San Gervasio Q-11-9
Forms Present in Caves: Olla
Illustrations: 5.58, d
Discussion: Variety more compact than Vista Alegre variety.

Vista Alegre Striated: Unspecified
Group: Vista Alegre
Established by: Type: Sanders 1960:248
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha N/A
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:179–181)
Description: for type see: Sanders 1960:248
Type Collection Reference: N/A
Forms Present in Caves: N/A
Illustrations: N/A

Muna Slate: Muna
Group: Muna
Established by: Smith 1971:28
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha N/A
Regional Intersite Distribution: El Naranjal (Boucher 1997); Group: Vista Alegre (Romero R. and Gurrola B. 1995)
Representative General Distribution: Cobá (Robles Castellanos 1990:182–194); Ek Balam (Bey et al. 1998) *Description:* see Smith 1971:28; Robles Castellanos 1990:182–194; see also Boucher 1989
Forms Present in Caves: N/A
Illustrations: N/A

Sacalum Black-on-slate: Sacalum
Group: Muna
Established by: Smith 1971:28
Regional Inter-Cave Distribution and Frequency: Actun Tacbi Ha N/A
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:195–196)
Description: see Smith 1971:28

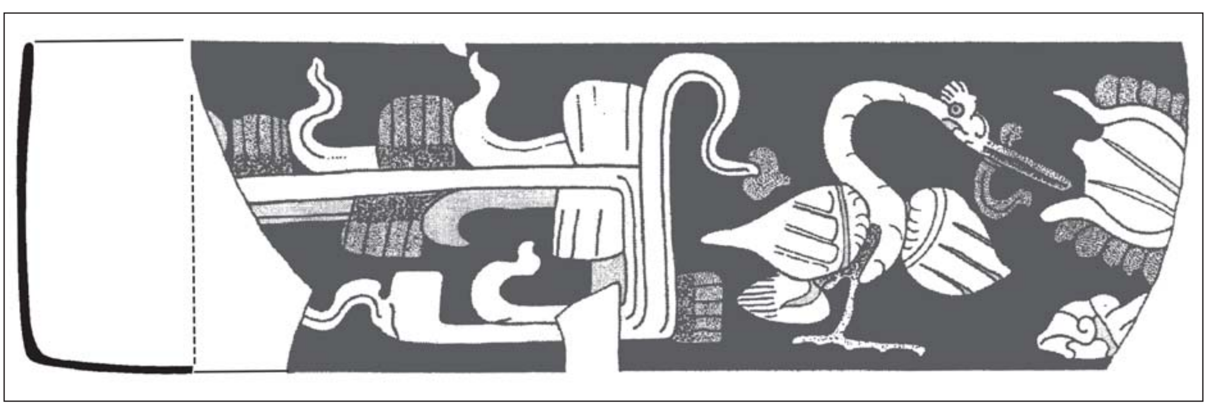


Figure 5.57. Petkanche Orange Polychrome: Petkanche. Three-eighths scale illustration adapted from roll-out drawing by Karl A. Taube.

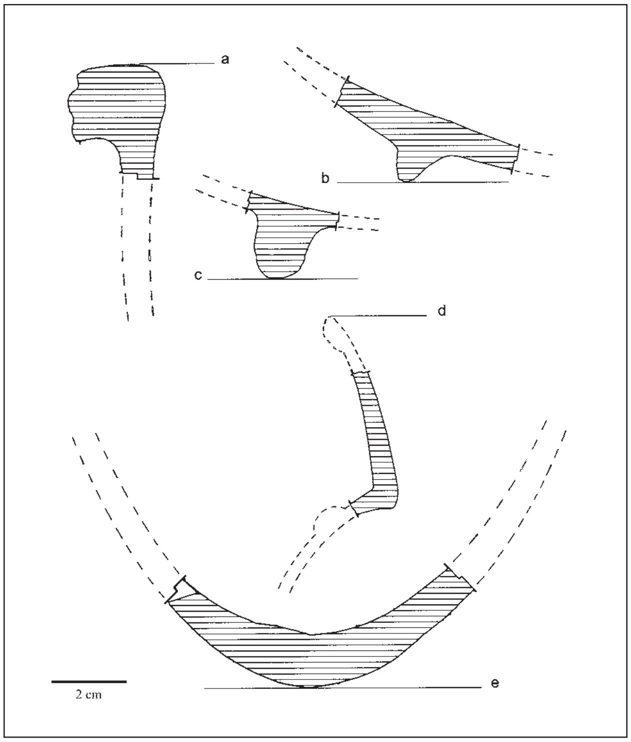


Figure 5.58. a. Yaxuná Striated-preslip: Yaxuná. b–c. Janan Orange Polychrome: Janan. d. Vista Alegre Striated: Chen Río. e. Vista Alegre Striated: Vista Alegre.

Forms Present in Caves: N/A
Illustrations: N/A

Teabo Red: Teabo
Group: Teabo
Established by: Smith 1971:27
Regional Inter-Cave Distribution and Frequency: Actun Xooch 1
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Cobá (Robles Castellanos 1990:201–202); type: Ek Balam (Bey et al. 1998)
Description: see Smith 1971:27
Type Collection Reference: Uxmal Y-20-4
Forms Present in Caves: Cajete
Illustrations: N/A

Tekax Black-on-red: Tekax
Group: Teabo
Established by: Smith 1971:27
Regional Inter-Cave Distribution and Frequency: Actun Maas 1
Regional Intersite Distribution: N/R
Representative General Distribution: type: Ek Balam (Bey et al. 1998)
Description: see Smith 1971:27
Type Collection Reference: Sayil Y-58-9
Forms Present in Caves: Olla
Illustrations: N/A

Postclassic
AD 1200 – AD 1600

Group	Type: Variety
Navulá	Chen Mul Modeled: Chen Mul
	Cehac Painted: Cehac
Mama	Mama Red: Cancún
	Mama Special

Chen Mul Modeled: Chen Mul
Group: Navulá
Established by: Smith 1971:24
Regional Inter-Cave Distribution and Frequency: Actun Maas 37, Actun Xooch 38
Regional Intersite Distribution: El Naranjal (Boucher 1997); T'isil (Ceja Acosta 2000); Group: Chiquilá (Romero R. and Gurrola B. 1995)
Representative General Distribution: Cobá (Robles Castellanos 1990:224–226); Ek Balam (Bey et al. 1998); Chikinchel region (Kepecs 1998); El Meco (Andrews and Robles Castellanos 1986)
Description: see Smith 1971:24
Type Collection Reference: N/A
Forms Present in Caves: Censer
Illustrations: 5.59, a–b; 5.60; 5.61, a–j; 5.62
Discussion: Censer fragments include a face, ear spool, and 3 cacao pods. The interior surfaces of a number of body sherds are coated with a layer of carbonized residue.

Cehac Painted: Cehac
Group: Navulá
Established by: Smith 1971:24
Regional Inter-Cave Distribution and Frequency: Actun Xooch 1
Regional Intersite Distribution: N/R
Representative General Distribution: Cobá (Robles Castellanos 1990:223–224)
Description: see Smith 1971:24
Type Collection Reference: Cobá Q-7-3
Forms Present in Caves: Miniature bi-conical cup (censer component)
Illustrations: 5.63
Discussion: Cup from cave collection similar to those found in the Cobá collection.

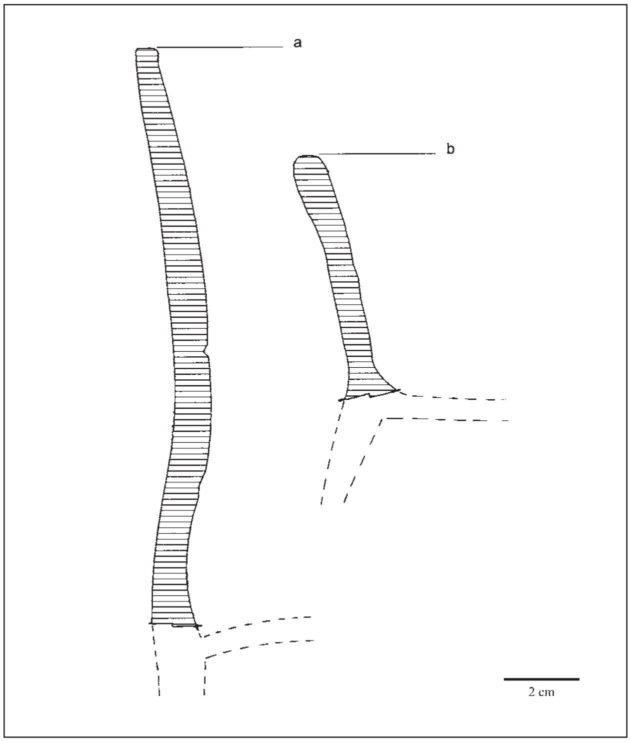


Figure 5.59. a–b. Chen Mul Modeled: Chen Mul.

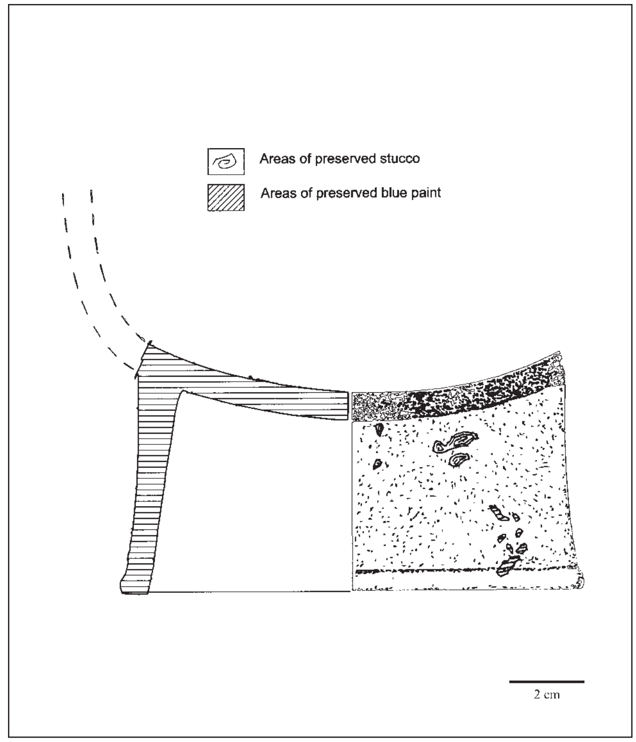


Figure 5.60. Chen Mul Modeled: Chen Mul.

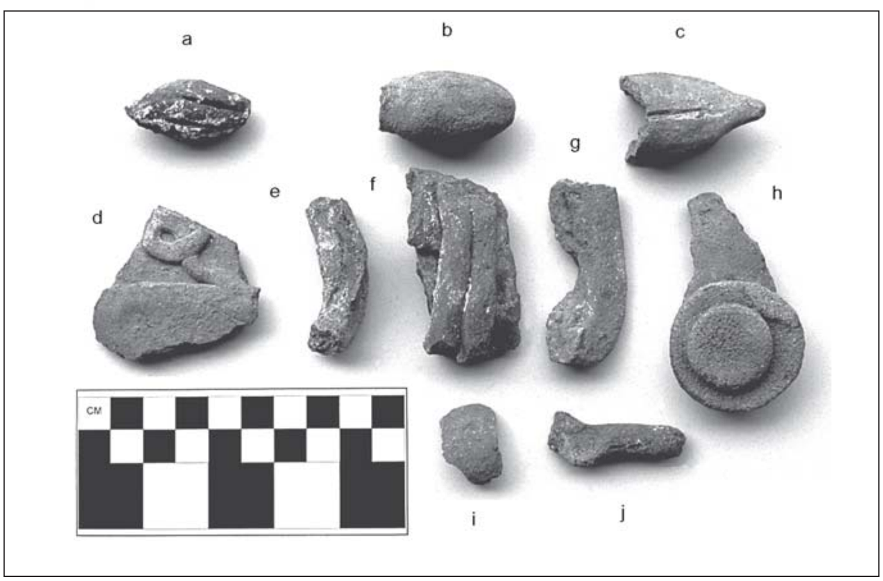


Figure 5.61. a–j. Chen Mul Modeled: Chen Mul.

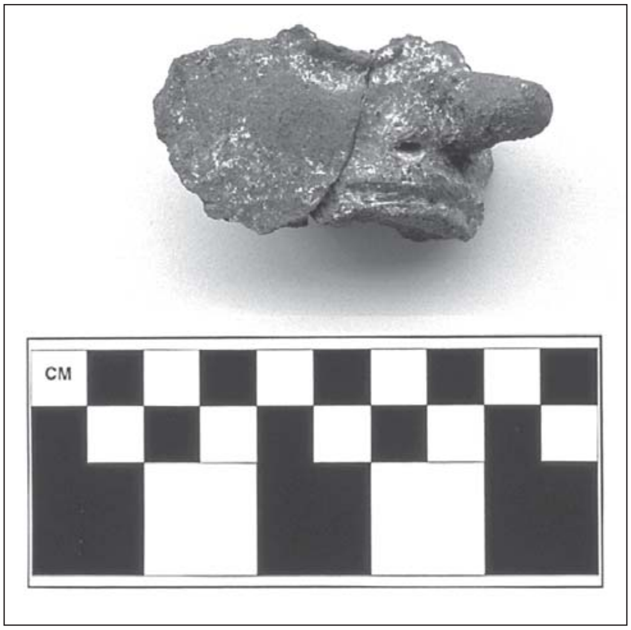


Figure 5.62. Chen Mul Modeled: Chen Mul.

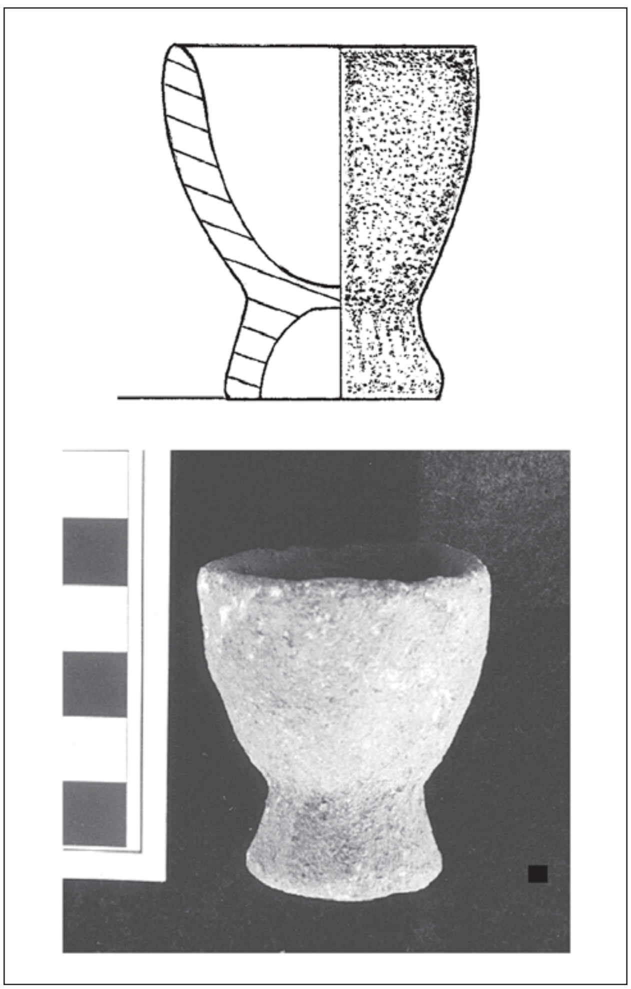


Figure 5.63. Cehac Painted: Cehac.

Mama Red: Cancún

Group: Mama
Established by: Type: Smith 1971:23
Regional Inter-Cave Distribution and Frequency: Actun Toh 2
Regional Intersite Distribution: El Naranjal (Boucher 1997)
Representative General Distribution: Xelha (Canché 1992); type at Ek Balam (Bey et al. 1998); type at San Gervasio (Peraza 1993); Group: Chiquilá, Vista Alegre (Romero R. and Gurrola B. 1995); El Meco (Andrews and Robles Castellanos 1986); for more on group see Ochoa R. (in press)
Description: see Peraza 1993
Type Collection Reference: San Gervasio Q-10-7
Forms Present in Caves: Olla
Illustrations: N/A

Mama Group Special

Group: Mama
Established by: Type: Smith 1971:23
Regional Inter-Cave Distribution and Frequency: Actun Toh 3
Regional Intersite Distribution: N/R
Forms Present in Caves: N/A
Illustrations: N/A

CHAPTER 6

NON-CERAMIC ARTIFACTS

Lithics

Figure 6.1.
a) [Lot SJ2O5-1] Quartzite flake
b) [Lot SJ2O5-4] Micrite flake
c) [Lot SJ2O5-4] Micrite flake
d) [Lot SJ2BV] Quartzite flake

Figure 6.2
[Lot SJ2O2-2] Low-silica chert core from Actun Toh

Faunal

Actun Pech

Cranial:

Cranial fragment with suture lines evident, indicating immature status. Non-human. No genus or species designation made. [Lot N6O2-2].

Cranial fragment with suture lines evident, indicating immature status. Non-human. No genus or species designation made. [N6O2-8].

Postcranial:

Rib fragment (midshaft). Human. Determination made by distinctive morphology as outlined in Gray (1997). [Lot N6O2-10].

Vertebral fragments, thoracic. Non-human. Likely to be from a large-bodied mammal such as deer or jaguar. [N6O2-10].

Actun Maas

Cranial:

None.

Postcranial:

Long bone midshaft fragment. Unable to determine human vs. non-human without destructive microscopic analysis. [Lot N701-1].

Long bone midshaft fragment. Non-human. [Lot N701-1].

Actun Toh

Cranial:

Temporal bone, nearly complete (figure 6.3). Human. The individual may have been immature, as the sutures had not yet joined (although in some rare individuals it does not join). This individual is robust as compared to other members of the local population (which generally indicates a male, particularly in light of its immature status). There is some porosity of the bone surrounding the external auditory meatus. This is evidence of porotic hyperostosis, which is the bony landmark of anemia (White 1991:346), common in immature individuals. [Lot SJ205-13].

Postcranial:

Long bone midshaft fragment. Unable to determine human vs. non-human without destructive microscopic analysis. [Lot SJ201-8].

Metacarpal/tarsal. The bone has undergone massive obliteration of features. It is consistent with a human metatarsal or metacarpal. It belongs to a large

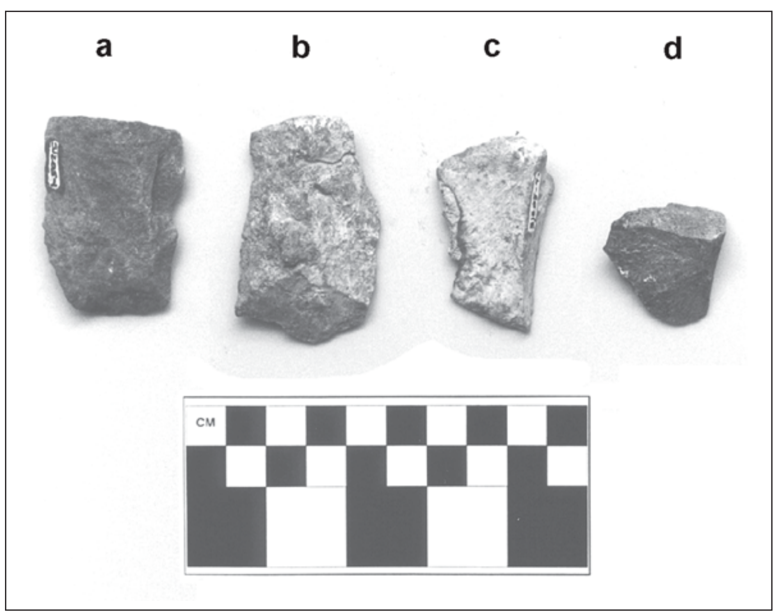
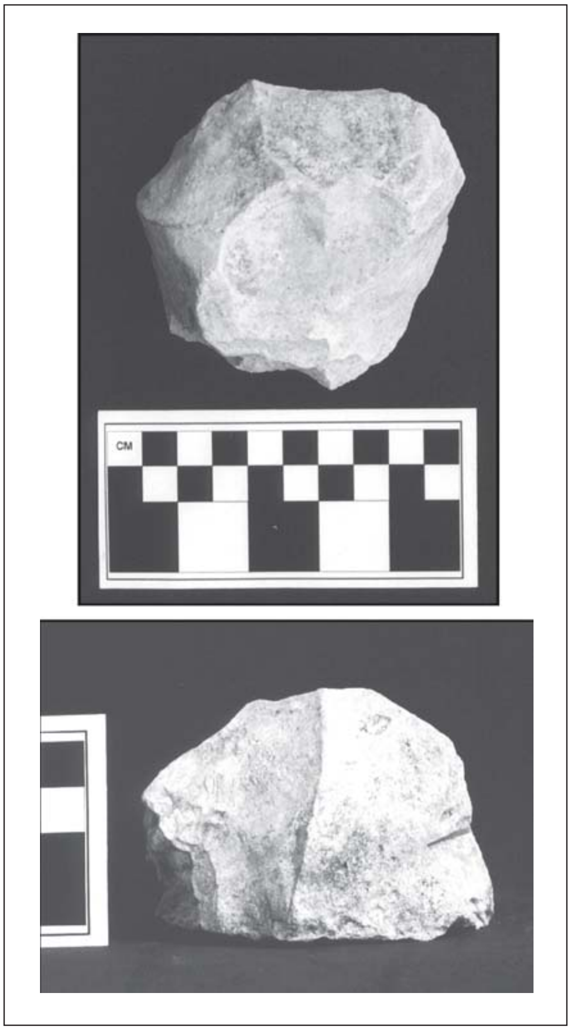


Figure 6.1. a–d. Hammerstone or tool spalls from Actun Toh (dorsal view).

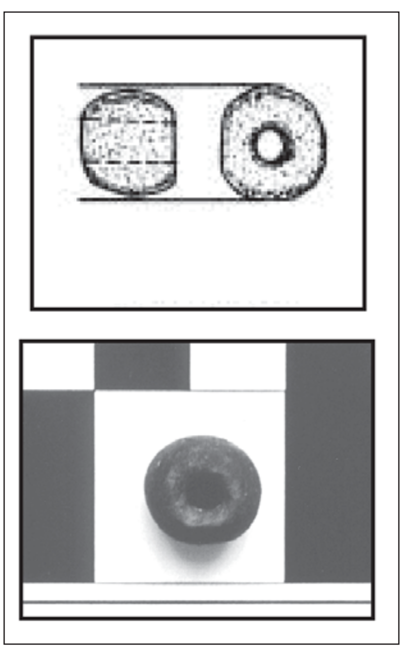


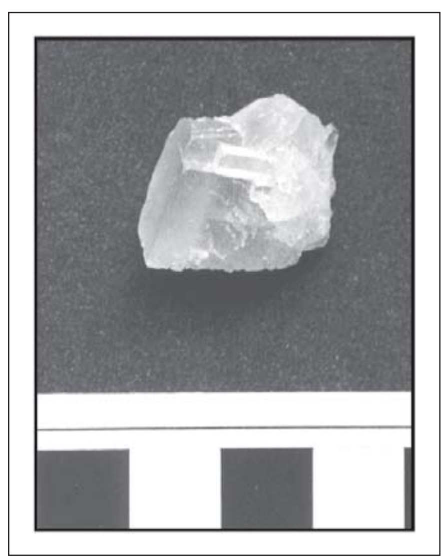
Upper left: Figure 6.2. Low-silica chert core from Actun Toh, top view above side view.

Upper right: Figure 6.3. Human temporal bone from Actun Toh.

Lower left: Figure 6.4. Drawing and photo of Jadeite bead from Actun Toh.

Lower right: Figure 6.5. Calcite crystal from Actun Toh.





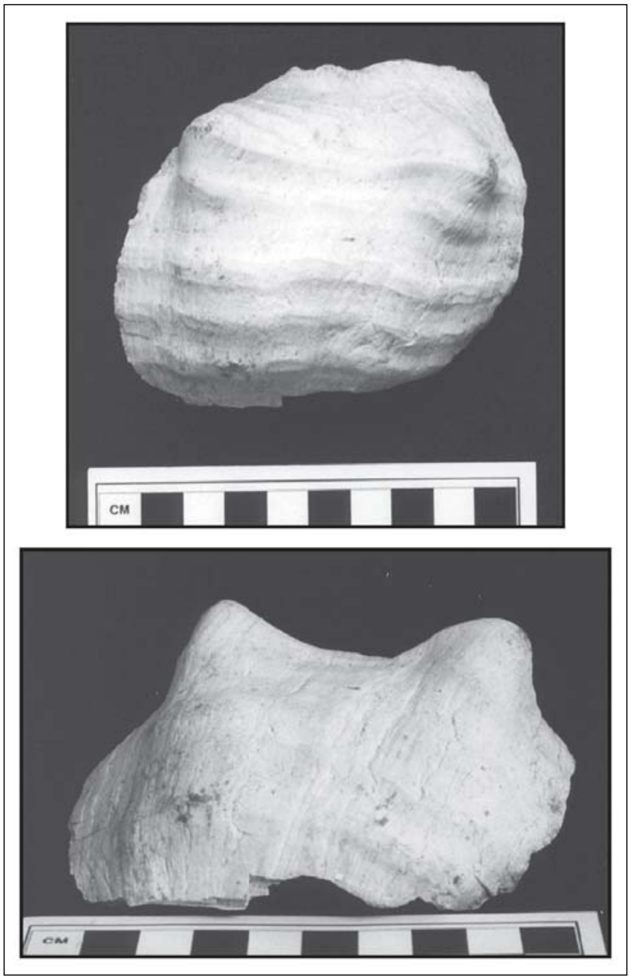


Figure 6.6. Conch shell fragment from Actun Toh, top view above side view.

bodied mammal that could include jaguar, as large bodied cats resemble humans in paw structure. [Lot SJ206-2].

Immature long bone. Non-human. Consistent with miniature deer. [Lot SJ201-15].

Unidentified bone fragment. Could be a rib head or possibly a vertebral fragment. Unable to determine human vs. non-human without destructive microscopic analysis. [Lot SJ2BIII].

Note: All faunal material analyzed by Alexis Gray.

Other

Figure 6.4
[Lot SJ2O5-2] Jadeite bead from Actun Toh.

Figure 6.5
[Lot SJ2O5-4] Calcite crystal from Actun Toh (recovered from possible cultural context).

Figure 6.6
[Lot SJ2O4-1] Conch shell fragment from Actun Toh.

CHAPTER 7

SYNTHESIS AND DISCUSSION

Introduction

While the Yalahau Archaeological Cave Survey was designed to address a wide range of topics, this chapter concentrates on two separate but related aspects of ancient Maya cave use. Firstly, a comparative study of the caves presented in this dissertation provides insights into the physical and cultural criteria for the selection and appropriation of specific caves for specific purposes, particularly the collection of sacred cave water. A cave's location relative to surface sites and topographic features as well as a cave's speleological characteristics profoundly influenced its use. This discussion will attempt to articulate the relationships between caves, surface sites, and natural features to better understand how the Maya conceptualized, transformed, and interacted with underground space. The second topic concerns the internal spatial organization of the cave environment. In the Yalahau region, spatial relationships between natural features, artifacts, and cultural modifications within the caves themselves appear to be deliberate and meaningful. By examining such patterns, it is possible to reconstruct the movements of the ancient Maya both to and through the region's caves.

Water and Caves in the Yalahau Region

As discussed in Chapter 2, the occurrence of surface water is rare in the karst terrain of the northern lowlands (see also Veni 1990). The cenotes of the northern lowlands often provided the only access to the water table. Morley (1947:12) summed up the implication for archaeological settlement patterns: "In a country devoid of surface water as northern Yucatan, these cenotes were the principal factor in determining the location of the ancient centers of population. Where there was a cenote, there, inevitably, a settlement grew up."

In the Puuc region of western Yucatán, when local aguadas and cisterns (*chultunob*) would dry up, the Maya were forced to procure drinking water from the many deep caves of the region—often at great effort (Andrews 1965; Mercer 1896:91–94; Stephens 1843:98–104; Thompson 1959:124; Zapata *et al.* 1991; see also Isphording 1975:246–247). This has seriously impacted archaeological thinking about caves and cenotes, which tend to be viewed exclusively as utilitarian water sources.

In the Yalahau region, by contrast, fresh water is abundant and readily available due to the presence of wetlands and natural micro-cenotes (see figure 7.1). Additionally, shallow wells, which were easily excavated, ensured reliable access to the water table (Winzler and Fedick 1995:105). Several such wells were recorded at El Naranjal (see figure 7.2). Caves are a common occurrence in the upland portions of the Yalahau region. However, access into many of the water-bearing caves is difficult—often requiring the negotiation of vertical drops and long crawl ways. It is important to note that these water-bearing caves are neither the only nor the easiest means of water collection in the region. This point is illustrated in the relationship between Actun Pech and its nearby wells. As described in Chapter 4.7, the entrance to the cave is a vertical-walled shaft. A long, narrow, horizontal tunnel extends from the bottom of the shaft to a small intermittent pool, 65 m into the passage. The section of tunnel leading to the pool is littered with pottery, and debris was piled along the walls to facilitate movement through the crawl way. The tiny ephemeral pool appears to have been the final destination of this arduous crawl as no evidence of cultural activity exists within the tunnel beyond the pool—save for the sherds of a cached vessel found in a small niche above and behind the pool.

Approximately 500 m from Actun Pech, is an ancient well that provides perennial access to the water table. Near this well, a cluster of residential mounds and an additional well were identified. It seems unlikely that the ancient Maya would have ventured into Actun Pech in search of drinking water when it could have been more easily and regularly procured from local wells. Rather, the water collected from Actun Pech and other caves discussed below, was likely valued for its remote and sacred origin; as Stone states "[t]he sanctity of space was proportional to its lack of accessibility . . ." (1995:239). The arduous passage

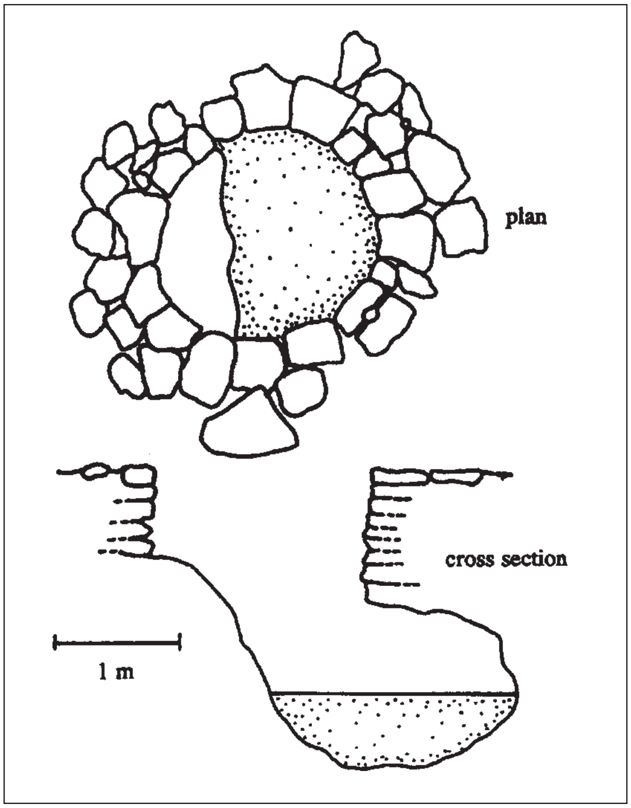


Figure 7.1. Modified micro-cenote, El Naranjal (after Winzler and Fedick 1995:fig. 6.7).

through Actun Pech is reminiscent of Chan Kom, where Redfield and Villa Rojas (1934:139) describe a cenote that ". . . can be reached only by crawling through a dark and slippery tunnel, about 30 m in length. The difficulty of entrance, and the snake-wise movement of the torch-lit procession, enhance the awesomeness of the ritual act."

In this respect, the situation in Actun Pech is fundamentally different than that described by Stephens at Bolonchen (1843:96–104), where drinking water was collected from the cave when all other means were exhausted. It suggests that the wetlands, open cenotes, and wells that surround caves such as Actun Pech served as the primary sources of drinking water, while the caves may have represented more restricted or sacred environments and were therefore reserved for ceremonial activities.

The importance of this fact cannot be stressed too strongly. Because caves in the Yalahau were not the only, indispensable water source, nor even the most accessible one, we would not expect evidence of cultural activity to be associated with simple utilitarian water collection. As already noted, archaeologists have tended to focus on caves/cenotes as water sources to the exclusion of all other functions. While it has been pointed out that cenotes used for drinking water are also important ritual features in the ethnographic literature (Brady 1997a:604), this point seems to have had little impact on archaeological thinking. The removal of the function as water source from the caves of the Yalahau region allows us to separate the ritual function from the utilitarian function. The ritual pattern isolated here allows us to identify the underlying meaning carried by these features. Those insights can then be applied to cave/cenotes throughout the peninsula to provide a more comprehensive appreciation of their multifaceted significance.

This, however, does not necessarily preclude the collection of drinking water from certain caves, which arguably could have been a ritualized, albeit routine, activity. Seasonal trips into the cave at Bolonchen, for example, were no casual affair but were marked by ceremonial activities in the nearby village. At the Gruta de Chac, the non-normal nature of the site was underscored by gender reversals in which men, as opposed to woman, did the actual water collection. John Lloyd Stephens (1843, II:16) observed "that there were no women, who, throughout Yucatán, are the drawers of water, and always seen around a well, but we were told that no woman ever enters the well of Chack; all the water for the rancho was procured by the men, which alone indicated that the well was of an extraordinary character."

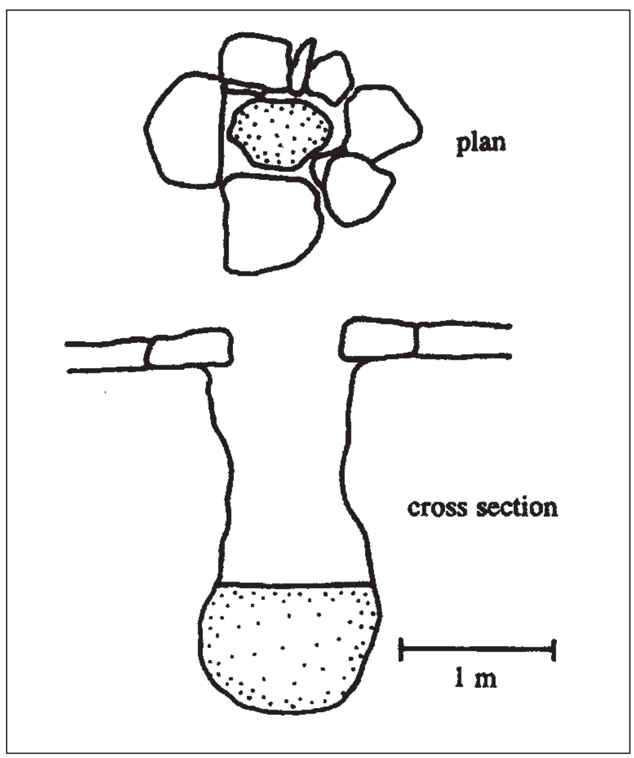


Figure 7.2. Excavated well, El Naranjal (after Winzler and Fedick 1995:fig. 6.3).

Although many of the features within the caves of the Yalahau region appear to focus attention on water, there is no reason to assume that the collection of virgin water, as described by Thompson (1975), singularly characterized ancient Maya cave use in the region. It is perhaps more reasonable—and consistent with our increased understanding of Maya cave use—to envision the presence water in caves as creating a sacred environment (see Brady and Stone 1986:22; Brady 1989:415 see also Brady 1997a) in which a range of religious activities was conducted.

The Cultural Context of Caves in the Yalahau Region

The Yalahau Archaeological Cave Survey focused particular attention on the area surrounding the civic-ceremonial center of El Naranjal and the secondary center of San Cosmé, which are linked by a 3 km-long sacbe. These sites and their corresponding plaza groups and rural settlements, are located in the southernmost portion of the Yalahau region. The site core of El Naranjal, oriented along a roughly north-south axis, is 1.2 km in length, .4 km in width and contains 23 major structures (see Fedick and Taube 1995). Recent studies at El Naranjal suggest that the primary construction episode at the site, as well as its period of greatest occupation occurred during the Late Preclassic to Early Classic periods. This chronological assessment is based on the occurrence of early ceramic types, the results of radiocarbon assays of charcoal samples extracted from construction plaster (Mathews 1998), and the presence of the Megalithic architectural style (Mathews 1998; Taube 1995). A number of other sites throughout the Yalahau region also exhibit evidence of a strong Late Preclassic/Early Classic occupation (Mathews 1995; Rissolo 1998a; Taube 1995; see also Fedick et al. 2000). Ceramics dating to the same period were recovered from the Gruta de Xcan (Márquez de González et al. 1982). Located approximately 20 km west of El Naranjal in Yucatán, it is the only reported cave site in the vicinity of the Yalahau survey area. The center of El Naranjal, as well as sites throughout the region, appear to have been abandoned during the Early Classic and later reoccupied during the Late Postclassic (Fedick et al. 2000). This later phase is characterized, in part, by the construction of shrines and stairways on the ruined monumental architecture of the site (Lorenzen 1995; 1999).

By examining caves in-concert with regional archaeological investigations of surface sites and features, patterns of cave use and the ways in which the Maya interacted with the landscape can be revealed and more accurately portrayed. Simply stated, the wider natural and cultural systems within which caves exist provide clues as to the nature and meaning of cave activities, the status of the individuals involved, the origin of those individuals, and the period during which those activities took place. Conversely, chronological and functional data recovered from caves can be integral components in the reconstruction of the ancient social, political, economic, and ideological organization of surface sites.

This was amply demonstrated in the investigation of Actun Toh (see Chapter 4.1). Directly below the entrance shaft of this dome-shaped cave is a roughly pyramidal terraced structure. Although the structure is in an advanced state of disrepair, its well-dressed blocks clearly reflect the Megalithic construction style characteristic of the region's early occupation. The terraced slope of the structure in Actun Toh terminates at a crude altar and artificial floor. One of the pathways that lead away from this floor passes beneath a panel of simple carved faces, and down a stairway to a small, debris-filled pool. This pattern will be discussed in greater detail below.

Controlled test excavations were conducted in Actun Toh in order to determine the age of the floor. An analysis of the pottery from the deep but apparently homogenous sub-floor construction fill reveals the presence of such Late Preclassic groups as Tancah, Sierra, Nolo, and Xanabá. Protoclassic to Early Classic types include Carolina Bichrome Incised and Sabán Burdo. The fact that the basal riser of the pyramidal structure rests atop the floor, and given the structure's diagnostic stylistic attributes, it is likely that the architectonic modification of the cave occurred during the Early Classic. Additionally, the presence of chronologically sensitive types in the sub-floor fill such as Lituc Orange Polychrome and Cetelac Fiber-tempered further restrict the date to the middle part of the Early Classic (ca. A.D. 450–550, see Ball [1982:108]).

Mixed with this later material are sherds from the Dzudzuquil group. Middle Preclassic ceramics are all but absent in the northern portion of the peninsula, including nearby surface sites, but are commonly found on the floors of caves in the Yalahau region. Cave ceramics corresponding to the Nabanche complex (see Andrews V 1988) also include Achiote, Chunhinta, Joventud, and Kin. Their presence provides a unique opportunity to examine not only early cave use, but also the earliest of regional occupations.

Late Classic ceramics have yet to be identified in any significant quantity at surface sites, leading to the proposal that the region experienced a long hiatus

(Fedick et al. 2000; see also Fedick and Taube 1995:10; Mathews 1998:158–168). However, they appear quite frequently in the region's caves. In Actun Toh, a small but significant quantity of Late Classic Saxche Orange-polychrome sherds were recovered as well as numerous Late to Terminal Classic Vista Alegre Striated sherds. A nearly whole, Late Classic, Petkanche Orange Polychrome vase was found in Actun Tacbi Ha (see Chapter 4.2, see also figure 5.57). This cave also contained deposits of Terminal Classic Muna Slate and Sacalúm Black-on-slate.

The apparent discrepancy between cave pottery and our current model of regional occupation could be explained if caves, such as Actun Toh, were focal points of ceremonial activity within an area of non-nucleated Late Classic to Terminal Classic settlement. In other words, Late Classic period occupation of the southern Yalahau region might be more diffusely expressed across the surface landscape, whereas caves—as religious activity areas—tended to concentrate physical evidence of Classic Period ceremonial behavior. Such evidence underscores the importance of cave data for the reconstruction of surface patterns, but perhaps more importantly it emphasizes the magnetic effect caves had on Maya ceremonial behavior.

Another possibility is that the ceramics could have been deposited by a non-local population if the caves functioned as pilgrimage sites for Cobá during the Late Classic and/or Terminal Classic. No major ceremonial cave sites have yet been reported near the low-elevation site core of Cobá, and it is conceivable that residents of this Classic period urban center could have traveled 35 km northeast towards the Yalahau region in search of suitable caves.

With this in mind, it is apparent that a more complete story of the role of caves in Maya culture cannot be fully realized through archaeological cave investigations alone, and that the archaeology of surface sites cannot be ignored. Suffice it to say archaeological strategies necessary for the effective investigation of cultural process at surface sites should be carried into the cave environment as well.

Identification of Cultural Criteria for Cave Selection and Appropriation

It is a fact of nature that no two caves are physically identical, yet our use of the term "cave" to subsume all of these features suggests a rather monolithic relationship between the Maya and these subterranean environments. At a certain level, the generalized concept of cave is valid and has meaning; however, the Maya were no doubt acutely aware of both the dramatic and subtle physical attributes of different caves. Moreover, they were conscious of the distribution of different "types" of caves across the landscape as well as the caves' spatial relationships with local natural and cultural geography.

A common form of cave that develops in the horizontally-bedded limestone of northern Quintana Roo is the collapse dome. These caves are characterized by voluminous, dome-shaped chambers—the ceilings of which are sometimes breached in the center by narrow shafts leading up to the surface. A cave's opening to the outside not only provides access to its interior, but it functions as a symbolic interface between the subterranean and terrestrial worlds. Entrances can range from tiny holes, barely wide enough to penetrate, to gaping chasms. Three caves in the survey that exemplify the collapse dome form are Actun Toh, Actun Tacbi Ha, and Actun Tam Ha.

An additional broad, quasi-taxonomic factor to consider, especially in relation to collapse domes, is cave size. Stone (n.d.) mentions that caves were unique in ancient Mesoamerica in that they offered people exposure to large enclosed spaces, which essentially did not exist in their built environment. This observation has powerful implications in terms of the dramatic contrast between caves and the surface world as well as the unparalleled sensory effects that caves must have impressed upon those who visited them. There is little doubt that the expansive character of Actun Toh, for example, contributed to its apparent importance. The caves of the Yalahau region are quite small in comparison to the enormous caverns of the southern lowlands or the hills of western Yucatán. However, it is more meaningful to evaluate chamber size in relation to nearby caves so that relative grandeur is measured only within a regional context. Thus, Actun Toh, regardless of its absolute size, must be recognized as one of the grand caverns of the Yalahau region.

The interface between collapse domes and the surface is subtle and misleading in that the small entrances belie the enormity of the open space below. Needless to say, access to such caves was difficult and the ancient Maya were forced to span large vertical distances with ropes or wooden ladders. Just as buildings can serve as screens to control access to private plazas, challenging and naturally restrictive entrances limit casual interaction with certain caves. Thus, the same desire to conceal space in ceremonial architecture may have motivated the ancient Maya to select and appropriate such caves for restricted use.

Early on, J. Eric S. Thompson (1959:122) pointed out the significance of cave access but did not explore the aesthetic and symbolic qualities of cave entrances that appear to reflect (or complement) the Maya perception of space. As mentioned by Thompson (1959:122), the importance of restricted access is also evident in the artificial reduction of cave entrances. In Actun Haleb, a crude terrace was constructed at the mouth of the cave that effectively reduced the size of its entrance. Blom and La Farge also identified similar modifications in Zapo Cave (1926:156), as did Seler at Quen Santo (1901:162) and Carot in the Alta Verapaz (1989). Perhaps small, vertical portals like that of Actun Toh were especially valued for their natural ability to provide a sharp and dramatic transition between physical and ideological realms.

In their discussion of elite activities at Naj Tunich, Brady and Stone (1986:23) raise a relevant question. They ask why, if caves were such an important part of ancient Maya world-view, do so few caves exhibit the "formal vocabulary" of elites (1986:23). They suggest that by invoking the concept of the cave in site architecture, Maya elites did not consider it necessary to venture into the physical cave environment, thereby attributing evidence of extensive and intensive cave use to mostly non-elite individuals. Increased documentation of the relationship between caves and monumental architecture has altered this idea significantly (see Brady 1997a; Brady et al. 1997; Martos López 1997). In the Yalahau region, it is possible that the art, architecture, and offerings found in the caves might very well represent the "formal" or elite vocabulary of the ancient Maya of northern Quintana Roo. Moreover, the naturally restrictive and culturally restricted access to certain caves is suggestive of their exclusivity.

As in the case of Actun Toh, the presence of relatively sophisticated architectural modifications and a rich ceramic assemblage are likely a result of the special status ascribed to the cave's physiography. Therefore, it appears that in this instance, cave geomorphology determined the social aspects of cave utilization because it combined a number of features that were important to the ancient Maya. For example, all three collapse domes share the mound-stairway-pool configuration, which takes advantage of the caves' physical environment. Size cross-culturally connotes grandeur and power so it is noteworthy that the collapse domes also represented the largest enclosed spaces in the region. Finally, the entrances are naturally restrictive which lent themselves to further cultural restrictions. For all these reasons it appears that the elite specifically appropriated collapse domes, with physical and architectural modifications standing as a testimonial to this appropriation.

Rock Shelters as Caves

In attempting a study of ancient Maya cave use, it is important to mention that the geologic definition of "cave" (or "cenote" for that matter) has little meaning within the context of this discussion and can obfuscate our understanding of the Maya appropriation of underground spaces. Recent ethnolingustic studies have explored the emic classification of caves and related topographic features (e.g. Brady 1997a; Brady and Ashmore 1999; see Brown n.d.; see also Vogt and Stuart n.d.) and it is clear that the Maya concept of cave includes a number of features not included within our western concept of "cave." While semantic analyses among the modern Maya are important in steering the direction of research, it remains for archaeologists to document the palpable evidence of underground utilization in order to define the boundaries of the ancient Maya concept of cave.

At least in archaeology, caves and rockshelters tend to be dichotomized as geologically and functionally different types of sites. Straus (1990:256) states, "A closer look reveals that these two categories [caves and rockshelters] are quite different in terms of their formation and infilling, and that each of them in turn is made up of a wide variety of phenomena." Nevertheless, it must be recognized that the Maya emic classification of these features might be quite different. Unfortunately, the linguistic data from modern Maya groups is not clear on whether rockshelters were consistently classified and used as caves (Brady 1997a:603). The Yalahau Archaeological Cave Survey attempted to address this issue directly by investigating five rockshelters within the study area.

Architectural features were identified in each of the five rockshelters included in the survey. Actun Xooch, the most intensively modified rockshelter in the survey, is essentially a large sinkhole with a semicircular alcove along its periphery. A crudely terraced slope leads down to the floor of the sinkhole. Extending from the base of the slope is a raised causeway or floor that supports a low offertory platform. This rectangular platform, which consists of two courses of roughly dressed blocks, is connected to the back wall of the alcove and is positioned beneath a narrow shaft leading to the surface. Items found at the base of the offertory platform include a tiny unslipped biconical cup and fragments of a Postclassic Chen Mul *incensario*—including what appear to be modeled ceramic cacao pods. In Actun Maas, a small rockshelter located southeast of El Naranjal, *incensario* fragments were found adjacent to a crude stone altar that was placed beneath a prominent flowstone formation.

Clearly, rockshelters were fully incorporated into a generalized emic concept of cave—even in a region where deeper and darker caves exist. The inclusion of rockshelters into the classification of caves rests not only on the similarities between their material remains and those of other cave sites, but also on the recognition of physical similarities between rockshelters and caves. In addition to their shared trait as openings in the earth's surface, both rockshelters and caves contain natural phenomena, particularly speleothems, which do not exist elsewhere in the natural world. In other words, rockshelters were perceived as having more in common with caves than with other natural features. Furthermore, my data suggest that the ancient Maya did not rely solely upon such traits as darkness, complete enclosure, and remoteness in their appropriation of underground spaces. However, the naturally extroverted configuration of rockshelters, their smaller size, and their lack of water may have resulted in a more non-elite type of ritual use.

By certain measures, a rockshelter like Actun Maas and a collapse dome like Actun Toh represent opposite ends of a morphological cave continuum in the Yalahau region. The shape of a cave and the way in which it presents itself to the surface are highly variable. Rather than attempt to quantitatively classify or define caves, it seems more reasonable to apply an anthropocentric approach to our evaluation of underground spaces. In doing so, we can appreciate the complex nature of human interaction with these environments.

Be that as it may, the sacredness of a cave was not necessarily determined by its size. The narrow, artificial caves at Utatlan in highland Guatemala (Brady 1991; Brady and Veni 1992) and the shallow Dzibichen in eastern Yucatán (Stone 1995:74–86) attest to this fact and are considered to be sacred places today. The massive volume of enclosed space characteristic of a number of caves in the Yalahau region may have indeed been a factor in their selection for a particular type of elaboration, but this does not exclude smaller caves from intensive ceremonial use. For example: the shallowest, brightest, driest rock shelter and the deepest, darkest, wettest cavern both share powerful ideological associations regardless of their disparate physiographical characteristics. First and foremost, both function as "entry points" into the subsurface world (Brady 1997a:603). It has been demonstrated that even human-made caves (found in both karstic and non-karstic regions) belonged to this sacred realm (Brady and Veni 1992; see also Barba P. et al. 1990; Heyden 1975, 1981).

Cave Resources

Water Collection

In addition to a cave's dimensional and locational attributes, the presence of extractable resources was no doubt a factor in both its selection and the nature and degree of its utilization. Paramount among these material criteria was water. The relative abundance of surface water in the Yalahau region notwithstanding, the preoccupation with this scarce resource among the Maya of Yucatán and northern Quintana Roo has left an indelible mark on secular and religious tradition over the course of generations and across the peninsula. The wealth of ethnohistorical and ethnographic evidence that attests to the ubiquity and importance of the cave-dwelling Yucatec rain deities (*Chaaks*) and cave-related fertility ceremonies need not be reviewed here. There is little doubt, however, that the enduring prominence of Chaak in the northern lowlands is likely a result of regional geographic and climatic conditions. Since caves in general are strongly associated with rain and fertility (see Brady 1989:42–53), and the preciousness of water is so heavily emphasized in the northern lowlands, then clearly one would expect there to be a special relationship with those caves that contain water.

The signs of human activity present in each of the water-bearing caves in the survey suggest that pools were a major focus of attention. The spatial relationships between cultural features and pools are discussed in the following section. The physical dimensions of pools do not appear to have been an important concern to the ancient Maya and there does not seem to be a correlation between pool size and degree of cultural activity. Even among the modern Maya of the Yalahau region, a cave need only provide access to the water table (via the smallest of pools) in order to be classified as a *ch'en* or *ts'onot* and to receive the special attention befitting a watery place.

Simply the presence of water in a cave was important, as well as the process of its extraction. In addition to leaving behind offerings and rock art, which marked wet caves as sacred spaces, the ancient Maya of the Yalahau were involved in activities that ensured the continued availability of cave water. Surrounding the small pool in Actun Toh is a mound of debris that represents successive pool-maintenance episodes. As rainwater would wash into this portion of the cave during heavy storms, the pool would become fouled with rocks and soil. The Maya would then excavate the material (which included pottery sherds) and stack it around the periphery of the small chamber. This practice has long since been abandoned in Actun Toh and upon recent examination, the pool appeared to be nonexistent (leading to the original assumption that the cave was dry). An archaeological excavation of the accumulated debris revealed the water table below. This practice of ancient cave maintenance was also identified in Actun Pak Ch'en, where the periodic removal of debris continues today.

As with the drawing of water from the Gruta de Chac, the maintenance activities noted above might have been highly ritualized affairs judging from the description of similar activities in Zinacantan. Springs, often located in caves, are vital water sources around which social groups form. Lineages take their names from their water holes and myths tell how the group received access to the water in exchange for cleaning and caring for the spring (Vogt 1976:99). While water holes are generally the domain of women, the cleaning is done exclusively by men and no women are present (Vogt 1976:102). The cleaning crews include *mayordomos*, shamans, and musicians that play during the work. Bricker (1973:114) has recorded some of the ritual humor that accompanies the cleaning. Once again, the gender inversion noted by both Stephens and Vogt attests to the non-quotidian aspects of water source maintenance.

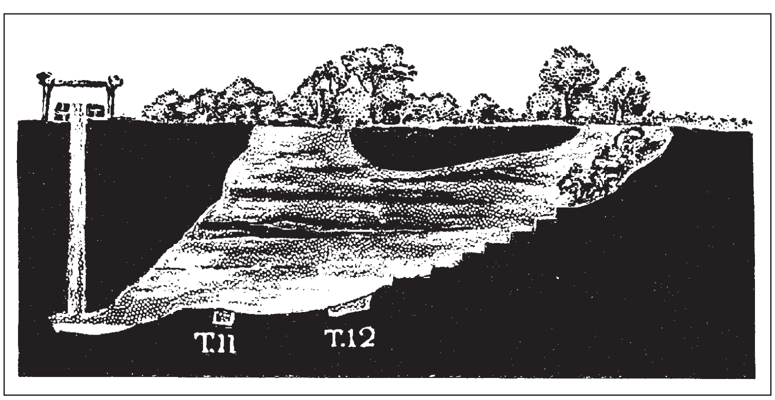
In Actun Tsub, a natural aperture in the cave-floor reveals a large pool eight meters below. This opening was artificially augmented to facilitate a rope-and-bucket retrieval method. Additionally, a second vertical entrance to the cave was chipped through the bedrock directly above the enlarged mouth of the well so that water could be easily procured from the surface. Such evidence is a clear indication of the importance of cave water collection—perhaps more so than broken pottery vessels, whose presence can be explained in other ways.

As mentioned in the chapter on Actun Tsub (4.8), the cave has two entrances— both of which appear to have been in use. This arrangement is similar to the cenotes at Telchaquillo and Mani, as illustrated by Brainerd (1958: maps 9 and 12, respectively). The pools in both cenotes can either be accessed from the surface via vertical shafts (marked by collars), or by descending into the cave itself via secondary entrances (see figures 7.3 and 7.4). Thompson (1975:xxi) provides an ethnographic description that appears to relate to this in noting, "the holy water used in baptism by the Maya of Quintana Roo is fetched from a secluded opening to the town cenote to which women never come." This suggests that some cenotes had both private and public (sacred and profane) aspects. Redfield and Villa Rojas describe how the pursuit of remote and sacred cave water is the task of men (1934:139), while "the rim of the cenote is a woman's precinct" (1934:70). The use of two different routes for the same water source may have been divided along gender lines. Interestingly, in the ethnographic cases, both women and men used the same water source, but the manner in which the water was collected affected its perceived qualities.

Ancient mounds are located in the immediate vicinity of seven of the eight water-bearing caves in the survey. It appears that wet caves were important landmarks in the cultural geography of the region and were likely the focus of territorial organization and control. This is well illustrated by an unnamed cave north of Actun Toh (SJ-1) whose vertical entrance lies within the midst of a small plaza. Actun Tsub, Actun Pech, and Actun Toh all appear to be directly related to surface structures.

A cave need not possess a pool to be a site of water collection. Two of the shallow, dry rockshelters in the survey contain *haltunes*, which were placed beneath the drip-line. These stone troughs were reported early on by Mercer (1896: fig. 5, fig. 39) and are quite common in caves across the northern lowlands. Ceramic vessels positioned beneath dripping stalactites have been reported in deeper caves throughout the Maya area (see McNatt 1996:85–86; see also Thompson 1975: xvxxii). J. Eric S. Thompson (1975:xx; see also 1959:125) rightly asserts that such vessels were likely intended to collect water (*suhuy ha*) for ritual purposes rather than for drinking. He mentions the site of Las Cuevas in Belize (1975:xviii–xix), where the stream outside a cave would have been a more practical source of drinking water than the dripping stalactites located deep within the cave's interior. The availability of non-cave water in the

Figure 7.3. Telchaquillo Cenote (after Brainerd 1958:map 9).



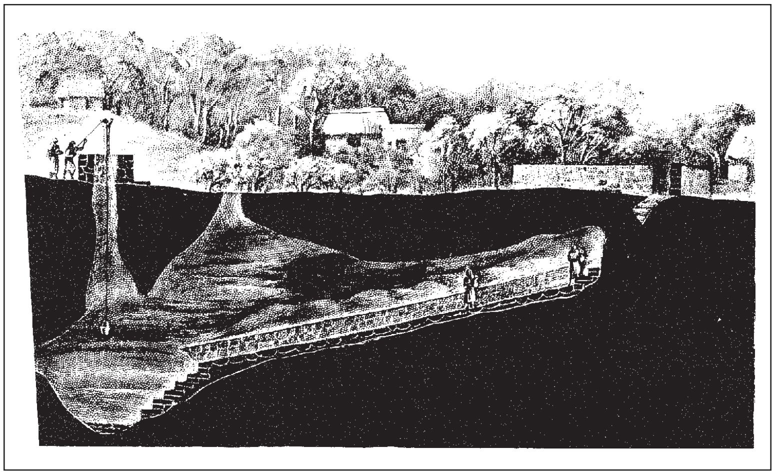


Figure 7.4. Mani Cenote (after Brainerd 1958:map 12a).

Yalahau region presents an analogous situation and serves as an eloquent statement regarding the preciousness of cave water.

Speleothem Breakage and Removal

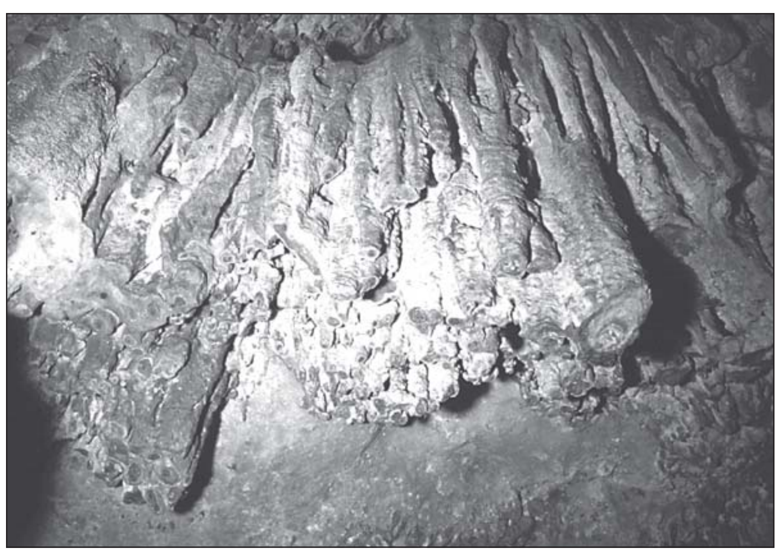
The breakage and manipulation of speleothems has received increased attention from archaeologists and is the focus of a detailed review and study by Brady et al. (1997). Stalactites and stalagmites, which have been erected as monuments outside of caves, cached at surface sites, and used in altar construction within caves themselves, were imbued with sacred qualities and likely functioned as portable symbols of the caves' power (Brady et al. 1997).

The practice of speleothem removal and breakage was identified in nearly every cave in the survey (see figure 4.8.4 and 4.8.5; see also figure 7.5 for an example from a nearby cave in Yucatán). Contrary to the findings of Brady et al. (1997), intensive breakage was recorded both near and far from cave entrances. It should be noted, however, that the caves in the Yalahau region are typically single-chambered affairs and the entrance is usually visible from all areas of the cave. Nevertheless, a number of caves, such as Actun Tsub, have been almost completely denuded and soda straws can be seen hanging from the stumps of earlier stalactites (which, incidentally, were removed from the cave). Quite often, even the smallest of speleothems in the most inaccessible of alcoves have been removed. This latter discovery lends support to the ceremonial value of more remote speleothems suggested by Brady et al. (1997:727–728).

The most compelling evidence for the sacred nature of speleothems is their inclusion in ceremonial contexts (see Brady et al. 1997:736–740). At El Naranjal (figure 7.6), a stalactite was found inside a Postclassic shrine (Lorenzen 1995:60) and recent excavations at the site have recovered a number of small speleothems from offertory contexts (Karl James Lorenzen, personal communication 2000). There is little doubt that additional excavations associated with both civic-ceremonial and domestic structures throughout the region (combined with a watchful eye) will establish the practice of speleothem caching as a common cave-related tradition.

It is unclear whether or not utilitarian activities account for at least some percentage of the speleothems removed from caves in the Yalahau region. Certainly, their apparent "harvesting" from several caves begs for a satisfactory explanation. Even though speleothems represent a finite resource, their use as a source of calcite temper for pottery manufacture (also discussed but not endorsed by Brady et al. [1997]) cannot be entirely ruled-out without further investigation. However, the economic need for calcite (in lieu of pedogenic sources) would not explain the massive speleothem fragments lying on the floor of Actun Tacbi Ha. Also of interest in Actun Tacbi Ha is the use of speleothems for the construction of a stairway in the cave (Rissolo 1995). Such a use, however, should not be considered utilitarian in nature, as the stairway was apparently used for the ritual procurement of water from a small cave pool. Not all caves in the Yalahau

Figure 7.5. Xca'ca' Ch'en. Evidence of speleothem breakage.



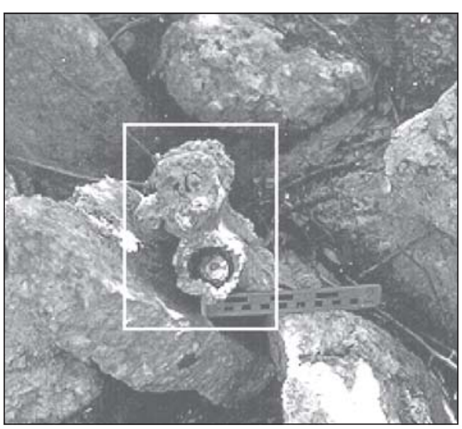
region are (or were) rich in speleothems. Certain rockshelters, such as Actun Maas, would not have been favored speleothem gathering sites and no stalactites or stalagmites (or even evidence of their former presence) were observed in Actun Pech.

Mining

An additional extractive activity, which has been identified at two caves in the Yalahau region, is mining. This activity is currently the topic of a more in-depth study; however, the preliminary assessment of the cave mines is noteworthy. Three mining areas were identified in Actun Toh—each reached by a clearly marked path. The largest of these is an enclosed room, which is separated from the main chamber by a low passage. Visible in the walls of the room are interbedded strata of poorly-lithified dolomite and more resistant limestone layers. The soft, white dolomitic powder was easily mined and removed while the subsequently protruding limestone shelves were broken-off and piled along the sides of the room's entrance path. Pits in the floor suggest that the room's expansion was vertical as well as horizontal. It appears as if the room itself (measuring roughly 4 m in diameter and 2 m high) was artificially created by this process. If so, as much as seventeen cubic meters of material was removed.

While it appears that a considerable proportion of the cavities created by mining activities in Actun Toh are ancient, evidence of more recent mining is clear. Visible on the walls of the largest mining pit are the unmistakable scars of a modern steel pick. When I consulted with my local guide on the matter, he was unable to offer an explanation but simply confirmed the obvious: that if the material was mined and removed for use as *sasca*b, the miner would have saved himself trouble and effort by simply making use of one of the many nearby *sacaberas* at the surface. The

Figure 7.6. Stalactite from shrine at El Naranjal.



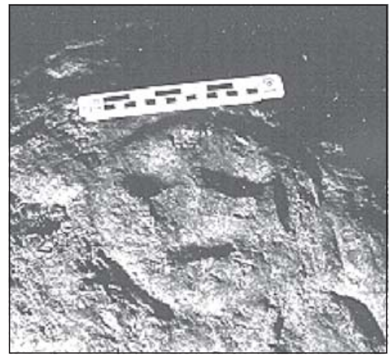


Figure 7.7. Xca'ca' Ch'en. Simple carved face.

guide's reaction is equally telling of what an impractical and economically inefficient source for *sascab* the cave might have been in antiquity. A yet to be revealed ceremonial use seems a more likely explanation and perhaps such a line of inquiry might be pursued in future research.

By examining activities such as speleothem removal, mining, or water collection from an intra-regional perspective, it becomes clear that the ancient Maya ventured into different caves for a variety of reasons. Just as the region's ancient inhabitants were aware of unique ecological zones (i.e. areas of deep or fertile soil, natural *bajos*, well-drained uplands etc.), they were likely knowledgeable of the individual physical characteristics of each cave. To some degree, each cave (as a natural entity) represented a unique place, which both intersected and aligned with the system of meanings thrust upon it by the ancient Maya.

Spatial Organization of the Cave Environment

I have discussed the importance of pools in caves and have introduced their association with subsurface architectural constructions in the Yalahau region, yet we have not fully explored the patterned spatial relationships between natural and cultural features in caves. In all of the water-bearing caves in the survey, the pools appear to have structured the nature of human activity between the entrance and the pool itself. Furthermore, the natural layout of caves has directed or channeled human interaction with cave space. This pattern is then reinforced by cultural modifications to cave environments.

If one descends into Actun Toh, a stairway guides the individual down the pyramidal structure and into an enclosed natural room (from which there is a single exit). A continuing series of short stairways and landings guides the visitor beneath a panel of carved faces and ultimately arrives at the pool. An identical arrangement was observed in Xca'ca' Ch'en, which is an unreported cave just over the border in Yucatán. Here, a beautifully constructed stairway leads past similar faces (figure 7.7) and terminates at the entrance to a well, deep within the cave (figure 7.8). Such stairways are also present in the cenotes of Mayapan (see Smith 1953; see also Brown n.d.) and in caves along the Quintana Roo coast (see Martos López 1994a).

Perhaps the most impressive expression of this pattern in the Yalahau region can be found at Pak Ch'en, where a stairway descends into the cave and guides the visitor along an extensive panel of carved images (see Chapter 4). Located on a boulder adjacent to the path is a profile of a figure that has been identified by Karl Taube as that of God C. Taube's description of God C (1992:30) suggests that the presence of his image in Pak Ch'en may have been intended to designate the cave as a sacred place. The appearance of God C on vessels, as seen on page 100d of the Madrid Codex, might designate the contents as *suhuy ha* (Karl Taube, personal communication 2001). Nearby is a figure that appears to exhibit both Chaak and Tlaloc features, which Taube describes as a common Late Postclassic development in rain god imagery (1992:133–136).

Surrounding this figure are at least nine distinct vulva motifs. The depiction of female genitalia often appears at rock art sites throughout Mesoamerica (see Apostolides 1987:175–177; Stone 1995:74–86; Strecker 1987; Velázquez Morlet 1988:82; see also Brady 1989:42–53). Rands (1955:343–344) notes that water is conceptually associated with the genital area. The association of rain god imagery with vulva motifs is also found in Dzibichen (Stone 1995:74–86), which contains a similar stairway-pool arrangement. Here, vulva motifs, lightning serpents, and a codex-style depiction of Chaak appear together on the cave wall. In Pak Ch'en, the pathway terminates at a small pool. Located directly above the pool is a strikingly realistic rendering of a vagina that no doubt marks the spot as a watery, womb-like, and fertile place—the sacred epicenter of the cave.

The use of space inside a cave, for the purpose of focusing attention on water, reflects a degree of specialized effort that supersedes the strictly utilitarian exploitation of this important resource. This is evident not only in the deliberate positioning of stairways and rock art, but also in the creation of relatively sophisticated architectural features. Ceremonial architecture is not uncommon in caves in the Maya area. The platform in Cenote X-Coton (Smith 1953) and the miniature temples in the Cueva de Satachannah (Martos López 1994a:77) and Aktun Na Kan (Leira Guillermo and Terrones González 1986) are telling examples of the transposition of ceremonial architecture into the cave environment as well as the very system of meanings attached to such an activity.

A close evaluation of the terraced structure in Actun Toh reveals that it is, in fact, a pyramid. Though it makes use of a natural slope and only appears to be pyramidal from a limited range of view, the mound's terraced façade sufficiently represents the power inherent in such a structure. I would argue that the presence of the pyramid in Actun Toh is significant for two related reasons. Firstly, the structure complements the sanctity of this grand underground chamber. Secondly, it harnesses the potency of the humanly controlled, built environment. Just as Stone (1992) describes the "capturing" of natural forces through the construction of ceremonial architecture, in Actun Toh we see the symbolic expression of human authority over the natural environment. Perhaps in this conceptual inversion, the cave/temple within the mountain/pyramid becomes the mountain/pyramid within the cave/temple.

I have no doubt that the replication of "cognized spatial models" (Stone 2001) aptly characterizes the positioning of cultural features within caves (see also Moyes and Awe 1998, 1999). The arrangement of structures, pathways, altars, and imagery, as well as the placement of votive offerings in caves of the Yalahau region is noticeably patterned and deliberate. However, I would stress that due to the physically bounded nature of caves, the imposition or mediation of spatial order is, at some level, categorically different

Figure 7.8. Xca'ca' Ch'en. Masonry stairway leading to pool.

than at the surface. Irrespective of the generalized concept of "cave" alluded to earlier, caves do not provide their human agents with a clean slate or an empty canvas on which to transcribe cosmic order. More so than in the less-bounded spaces of the surface world, the physiography or natural layout of a cave will significantly influence, if not dictate spatial ordering. The discretionary reading of caves in some way accounts for the architectural alteration of water-bearing caves like Actun Toh but also the placement of shrines or offerings near prominent speleothems in the region's caves. If to some degree function follows form, then the imposition of spatial models as described by Stone (n.d.) is no less meaningful or impacting, but rather more fluid in nature.

Perhaps the ancient Maya perceived an inherent natural order in caves. In other words, the cave may have served as a metaphor for the built environment, just as we believe certain ceremonial buildings functioned as metaphorical caves. This can best be understood in terms of the reciprocal nature of metaphors as described by Houston, which ". . . allows us to resolve such questions by acknowledging the indissoluble, almost playful associations between semantic domains" (1998:355). The semiotics of modern Western speleological terminology can be revealing and provide a structuralist conceptual framework in which to examine the relationships between the ancient Maya and the cave environment. Our lexicon makes use of such architectural terms as walls, ceilings, terraces, balconies, columns, shelves, or alcoves to describe natural cave features. This may reveal an anthropocentric tendency to define space on a human scale, wherein flat places become floors, enclosed spaces become rooms, and constricted spaces become entryways. Furthermore, our use of such terminology is suggestive of an impulse to cognize caves as both otherworldly *and* familiar, or perhaps to reconcile the disparity between realms by finding the familiar *in* the otherworldly. Certainly, the architectural enclosure of natural "rooms," which can be seen in the caves of the Alta Verapaz (Carot 1989), in Actun Balam (Pendergast 1969), and in Naj Tunich (Brady 1989), indicates that such spaces were at least perceived as inherently room-like in some way.

The question emerges of whether caves represent the order of "community" or the chaos of "wilderness" (Stone 1995:15–18). Stone skillfully negotiates the literature on Mesoamerican sacred geography, and attempts to find the placement of caves within binary models of reality. She offers as an example (1995:16) the Yucatecan concepts of *kaah* "town or inhabited space" and *k'aax* "forest" (as described by Hanks 1990:306). It would appear that the essentially dichotomous spatial mapping of Maya reality assigns caves to the realm of wild and disordered space. Stone's evaluation is compelling and well-supported ethnographically; nevertheless, I would argue that caves should not necessarily be considered contradictory or antithetical to ordered space, as Stone suggests (1995:16). I have no doubt that caves were, to a significant degree, considered wild places, which were subjected to the reactive imposition of spatial models (as described by Stone n.d.). However, the Maya recognition and appropriation of a cave's natural ability to mimic the built environment suggests that the notion of teleologically conceived space coexisted (but was not necessarily congruent) with the perception of cave as wilderness.

I should stress that these interpretations are based on a comparative study in an area that is relatively new to cave archaeology. The proposal of a more flexible model with respect to the conception of cave space is essentially the result of observations conducted in caves within this region.

Closing Remarks

To better understand the relationships between caves and the ancient Maya, it is necessary to look beyond a single cave and to evaluate a range of natural and cultural features both within caves and across the landscape. Emerging patterns of cave use revealed by research in the Yalahau region underscore the importance of caves as sacred space. This is particularly noteworthy in northern Yucatan where attention tends to focus on cave/cenotes as utilitarian water sources. The high water table in the Yalahau region, which allowed shallow natural and artificial wells to replace the role of the cenote as the critical water source, enabled the project to isolate the ritual function of caves and separate it from the function as a water source. The extensive utilization of the caves for ceremonial purposes documents the fundamental ritual importance of these landmarks. The findings suggest that similar patterns of ritual use should be present in caves in other areas as well.

While cave water sources do not appear to have been critical to the maintenance of human life, the Yalahau survey demonstrates that the presence of water in a cave was a matter of paramount importance. Water sources were the focus of ritual activity even where long arduous crawls were required to reach very modest sized pools. In some caves, evidence of regular maintenance was recorded and many of the pools are marked by the presence of rock art. Thus, the region's ancient inhabitants were clearly intent on locating, marking, and transforming water sources. These findings provide convincing evidence for the cosmological significance of water.

Despite their individual morphologies, all caves appear to have embodied part of a widespread system of cultural meanings. However, research in the Yalahau region demonstrates that natural characteristics such as entrance shape, the presence of water, and cavern size appear to have been factors in the selection and appropriation of certain subterranean spaces for particular uses. The size of three of the most voluminous collapse domes in the study area appears to have been one of the principal factors in the selection of these caves for substantial elaboration. Entrance form was clearly significant as well. Narrow, vertical portals like that of Actun Tacbi Ha concealed and controlled entry into these massive chambers.

The investigation of a large number of caves within a single region is important in presenting a range of cave morphologies that provide insights into ancient emic categories. Archaeologists typically make a distinction between caves and rockshelters but the evidence suggests that the latter were fully integrated into the Maya concept of "cave." All rockshelters contained architectural modifications, several contained *incensario* fragments and evidence of speleothem breakage and removal. While they functioned as more open and accessible sacred places, rockshelters were clearly perceived as caves.

Viewing a large number of caves also suggests new interpretations of the interplay between the subsurface replication of terrestrial domains and the inclusion of caves into the controlled realm of the built environment. Clearly, architectural modifications on the scale of Actun Toh make strong political and social statements as to the cave's relative importance and its specialized and restricted use. Perhaps more importantly, these investigations provide compelling evidence for the conceptual and physical transfiguration of caves into ordered environments.

It was also noted that the Maya were extracting resources from caves. However, the principles of economic efficiency do not adequately fit the cases of cave mining, speleothem extraction, or water drawing to make a plausible case that these were utilitarian activities. Once again, the sacred origin of these objects or materials transcends their physical properties.

The study of caves within their greater regional context, which includes surface sites and all cave-like topographic features, facilitates the identification of such cultural patterning across time and space. Moreover, caves can be exposed as diverse in their physiography and use, yet retain their place in the unifying concept of sacred underground domains. Through research in the Yalahau region, caves are realized as geographically and ideologically integrated environments that are linked physically and symbolically to the cosmic and terrestrial realms of the ancient Maya.

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