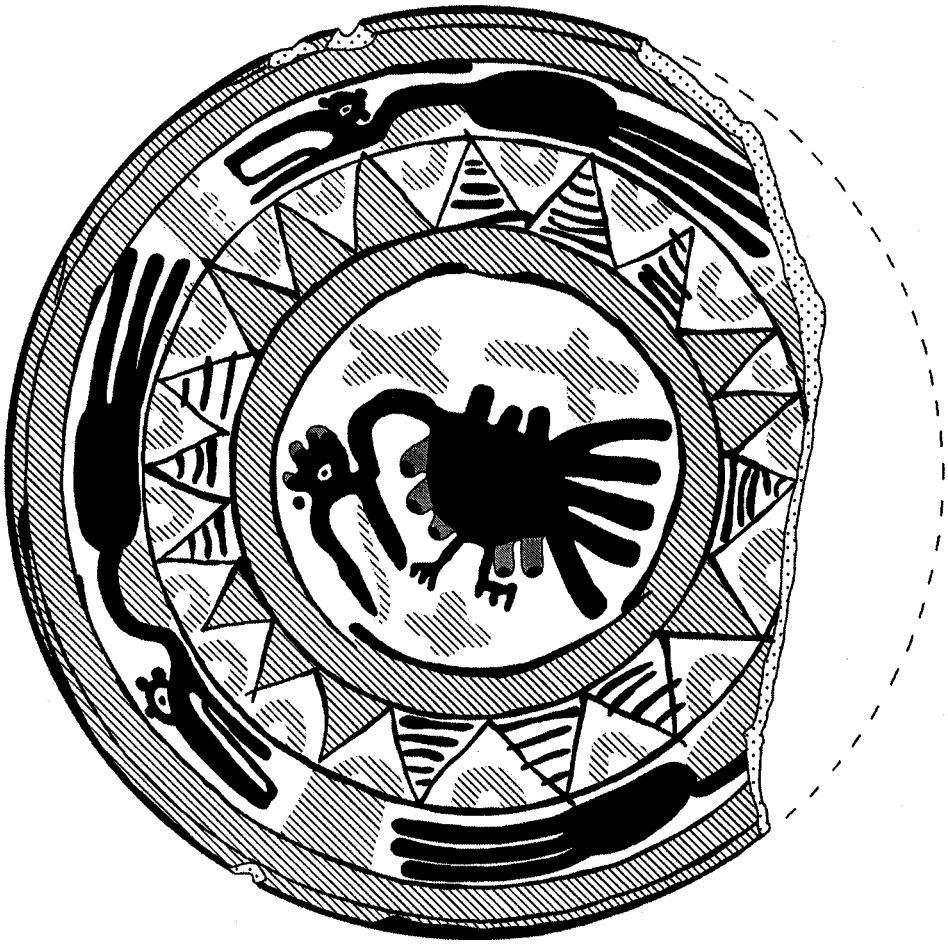
THE WESTERN BELIZE REGIONAL CAVE PROJECT
A REPORT OF THE 1998 FIELD SEASON



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JAIME J. AWE Durham, New Hampshire, 1999

A BRIEF NOTE ON THE ORTHOGRAPHY, MEANING, AND GRAMMAR OF ARCHAEOLOGICAL SITE NAMES IN WESTERN BELIZE AND THE MAYA AREA

Pierre Robert Colas
University of Hamburg

Christophe G. B. Helmke
McGill University

INTRODUCTION

Traditionally archaeological sites in the Maya area are given Yucatecan or Cholan Mayan names. The Western Belize Regional Cave Project (WBRCP) is discovering and investigating an increasingly larger number of sites, most of which were given Yucatecan or Cholan Mayan names. This report attempts to remedy a growing number of linguistic inconsistencies and discrepancies that are embodied in the names of sites. It is hoped that by formulating a formal report of the inaccuracies contained in site names that a series of standards can be adopted by the project prior to cementing erroneous names in irreversible publications. Although this report is aimed at addressing the names of sites that are being investigated by the WBRCP, the guidelines established herein can be applied to all archaeological sites of the Maya area. It is hoped that the standards will be employed systematically by a growing number of archaeologists.

ORTHOGRAPHIES: A SUMMARY

Orthographies outline a correspondence key between a given phoneme and a given written symbol that follow a standard usage. In this case "orthography" refers to a correspondence key between the particular phonemes of Mayan languages and their graphic representation in the Latin alphabet. Correspondence between the spoken Mayan languages and Latin characters has been a complicated matter since the first translation of the Bible into Yucatec by missionaries in the XVIth century.

Over the course of the last five centuries numerous orthographies have been developed that diversely record the subtleties of Mayan languages. This is compounded by the advent of diacritical signs and their graphic representations in phonetic orthographies (Moses 1964). These signs were developed by linguists to record differing pronunciations than those that are traditionally contained in written Latin characters. With the advent of these orthographies it is possible to write Mayan words in numerous ways. During the last century of archaeological investigations in the Maya area the Colonial Yucatec Orthography was used most extensively to write toponyms. This is best represented by the spelling of the names of such sites as Uaxactun, Tikal, Actun Balam, and Cahal Pech. The standardized orthography formulated with the cooperation of ethnic Maya linguists (ALM 1988; Raquec López 1989) arose after a century of creating toponyms with the colonial spellings. Unfortunately, the standardized orthography considerably alters the spelling of well-established colonial names. Due to their prevalence in the archaeological literature it is unlikely that the new spellings will be adopted. Consider for

example, the following changes: Waxak Tun, Ti'ik'al, Aktun Balam, and Kahal Pech. Consequently it is clear that many colonial spellings will remain in the archaeological literature.

Inconsistencies are apparent in the early usage of the colonial orthography in such important works as the Chilam Balam and the Popol Vuh (Tedlock 1996: 15-17 *passim*). Nevertheless, the Colonial Yucatec Orthography is still the most widely used in all Mayanist fields of study. This system is frequently modified in the finer details of particular applications (e.g. MacLeod 1990: 25-26; Coe 1992: 280-281). Additionally, the colonial orthography uses the Latin alphabet most extensively and is unencumbered by diacritical signs employed in linguistics.

THE COLONIAL ORTHOGRPAHY

Since the prototypes of this orthography were formulated by Spanish friars, the pronunciation of vowels follow the conventional pronunciations of Spanish. The matter is a bit more complicated when dealing with consonants since Mayan languages have a number of consonants that do not exist in European languages. Graphic representation of unique Mayan consonants thus follow a series of conventions that slightly alter the traditional values of the Latin alphabet.

General pronunciation rules can be summarized as follows: 1). The consonant /s/ is systematically replaced by /z/. 2) The letter /c/ bears both a fricative ("soft") and a plosive ("hard") value in European languages. Use of this letter in the Colonial Yucatec Orthography is invariant and read plosively.

Among the four notable consonants that exist in Mayan is the fricative */sh/*. It is represented by the letter /x/ since in XVIth century Spanish the letter bore a similar phonetic value as the Maya consonant. The consonant */ch/* is simply represented alphabetically. Another consonant is */tz/* which is also written alphabetically. The fourth consonant is a plosive articulation referred to as a glottal stop. In newer orthographies the glottal stop is represented by an apostrophic diacritical mark /'/. It follows all tense plosive consonants such as /p/, /t/, /c/, /ch/, and /tz/. The colonial orthography realized this distinction by replacing the glottalized version by another letter, adding an additional letter, or doubling the last letter of syllabic consonants. Thus glottalized tense plosive consonants were written as /th/, /k/, /chh/ (also /cÉ/), and /dz/. The glottalized /p/ was written in the Colonial dictionaries either as a doubled /p/ (/pp/) or as /p/ with a horizontal line through the vertical as in /cÉ/.

Table 1 summarizes the attributes of the orthographies. In this table the pure phonetic values are represented by the characters and diacritical signs used by linguists. The newer orthography of Mayan languages as it appears in the Cordemex (Barrera Vásquez 1980) is also represented for comparison to the Colonial Yucatec Orthography.

SCOPE OF THE ISSUE

Having presented a brief overview of orthographies and expressed our preference for the colonial orthography, we can now begin looking at the site names in question. Throughout the section that is to follow, site names in the colonial orthography are systematically used to minimize confusion as much as possible. Erroneous spellings are presented only when necessary for illustrative purposes.

Table 1: Correspondence set between orthographies.

Phonetic Alphabet	Cordemex Orthography	Colonial Orthography
	a	a
e	e	e
i	i	i
Ç	o	o
ÇÇ	u	u
	’	---
b	b	b
	ch	ch
	ch’	chh
h	h	h
k	k	c
k'	k’	k
l	l	l
m	m	m
n	n	n
p	p	p
p'	p’	pp
s	s	z
t	t	t
t'	t’	th
	ts	tz
	ts’	dz
w	w-	u-
š	x	x
y	y	y

Language

Since there are more than 30 Maya languages, the first obstacle to naming ancient sites is choosing the appropriate language. The WBRCP has selected Yucatec as the principal language used to name ancient sites. This decision is based on the likelihood that the Belize Valley was a language-area of Proto-Yucatecan rather than an area of the Hieroglyphic Proto-Cholan or Chorti languages. A few sites within the research area investigated by the WBRCP are, however, written in Cholan languages. This is the case with the name Actun Yaxteel Ahau. The word *yaxte* does not exist in Yucatec, and can only be translated in Chol, which means "Ceiba tree". The Yucatec cognate would be *yaxche*. As most of these Cholan names are well established, the WBRCP is not considering changing the language represented in such names.

Errors

Three types of errors have been discerned in the usage of Mayan names for archaeological sites: 1) meaning vs. translation; 2) mixed orthographies; and 3) grammatical errors. The nature of these errors and their proposed solutions will be discussed below.

Meaning Versus Translations

The most common error in site names is their failure to reflect their intended meaning. Good examples of these are Actun Yax Can and Actun Box Chhichh. The speleologists who discovered and explored these sites first gave them English names which they subsequently translated (to the best of their abilities) to Yucatec Maya. Unfortunately, many of the intended nuances of the English names were lost upon translation, since the names would have turned into long Maya sentences describing in detail what the English names meant. In the first instance the intended name was "Cave of the Amazing Green Snake" (Marochov & Williams 1992: 44). Failing to translate the adjective "amazing" to *kax than* (Barrera Vásquez 1980: 390) the name was left as "Green Snake Cave" or Actun Yax Can (Marochov & Williams 1992: 44). This name both fails to reflect the intended meaning and implies that Mayan languages cannot adequately transmit the same meaning as English can. The discrepancy between "Cave of the Amazing Green Snake" and Actun Yax Can was obviously caused by the translation, not by an inability of the Yucatec language. The same holds true for Actun Box Chhichh, whose intended name was "Cave of the Swifts" (Marochov & Williams 1992: 42, 46). Instead, the translated Yucatec name simply means "Black Bird Cave". The plural intended in English is also absent in the Maya name.

Another example is the name given to Handprint Cave. The four negative handprints discovered in the cave were intended to give the site its name. Actun Tuux Yan U Uayazba Camppel Kab (lit: "cave which has the marks of four hand") was initially suggested (Ramón Arzapalo Marin pers. comm. to Clemency Chase Coggins and Cameron Griffith 1996). Understandably, the name was considered to be too lengthy and unwieldy for a site name. Instead the name was abbreviated to Actun Uayazba Kab and serves as the published name of the site (Awe 1998; Griffith, this volume). Unfortunately, this abbreviated name does not adequately convey the intended meaning. Nevertheless, as the name has already appeared in print several times it cannot be altered significantly.

n	Site Code	Corrected Site Name	Translated Name	References
CAVE SITES				
1	ABC	Actun Box Chhichh	Black Bird Cave	Marochov & Williams 1992; Mirro et al. 1999
2	ACP	Actun Chapat	Centipede Cave	Awe 1998; Mirro et al. 1999
3	ACH	Actun Chechem Ha	Poison Wood Spring	Awe 1998
4	ACM	Actun Coo Mac	Crazy Pit Cave	Mirro et al. 1999
5	ANB	Actun Nak Beh	Road's End Cave	Awe & Helmke 1998; Mirro et al. 1999
6	ANU	Actun Nohoch Uinic	Old Man's Cave	Awe et al. 1998
7	ATM	Actun Tunchil Mucnal	Stone Sepulcher Cave	Miller 1989; Marochov & Williams 1992; Awe 1998; Awe et al. 1998
8	AUK	Actun Uayazba Kab	Handprint Cave	Awe 1998; Griffith 1998; 1999; Helmke 1998; Ferguson 1999; Mirro 1999
9	AYA	Actun Yaxteel Ahau	Ceiba Tree Lord Cave	Marochov & Williams 1992; Awe et al. 1998; Gibbs & Owen 1999; Mirro 1999
10	AYC	Actun Yax Can	Green Snake Cave	Marochov & Williams 1992; Mirro et al. 1999
11	AZC	Actun Zac Chho	White Rat Cave	Mirro et al. 1999
12	AZH	Actun Zodz Na	Bat House Cave	Marochov & Williams 1992
13	AZT	Actun Zac Thul	White Rabbit Cave	Mirro et al. 1999
14	BCC	Barton Creek Cave	---	Gibbs & Mirro 1999
15	CDC	Cueva del Camino	Cave of the Path	Helmke et al. 1999; Mirro et al. 1999
16	LTR	Laberinto de las Tarantulas	Laberinth of the Tarantulas	Awe et al. in press; Awe et al. 1998; Helmke, Griffith, & Mirro 1999
17	SCP	Son of Chapat	---	Mirro et al. 1999
18	SFC	Sunken Forest Cave	---	Marachov & Williams 1992
19	TWN 1	Twin Cave 1	---	Awe et al. 1998
20	TWN 2	Twin Cave 2	---	Awe et al. 1998
ROCKSHELTERS				
1	CCO	Chanchan Otot	Small House	Awe et al. 1998
2	UYN	Uayak Na	Dream House	Awe et al. 1998
3	ZHN	Zaatal Haa Nal	Place of Disappearing Water	Awe et al. 1998
4	???	Dave's Hethel Tunich	Dave's Crevasse	Mirro et al. 1999
5	???	Amelia's Homlil	Amelia's Chasm	Mirro et al. 1999
SURFACE SITES				
1	CCC	Cauac Che group	Mahogany	Mirro et al. 1999; Helmke et al. 1999
2	CMH	Chaac Mool Ha group	Roaring Water	Awe et al. 1998
3	CNO	Cunul Otot	Conjuring House	Awe et al. 1998
4	CUN	Cahal Uitz Na	Place of the Mountain Houses	Awe & Helmke 1998; Conlon et al. 1999
5	PKH	Pook's Hill group	---	Awe et al. 1998
6	PON	Ponces group	---	Awe pers. comm. 1997
7	SAL	Slate Altar group	---	Helmke et al. 1999
8	YHT	Yaxhal Tun group	Clear-water Stones	Awe et al. 1998
ARTIFACT SCATTERS				
1	KBH	Kan Bab Holol	Yellow Crab Springs	Mirro et al. 1999
2	ZNT	Zac Niix Tun	White Cliff	Awe et al. 1998

Table 2: Tabulation of sites investigated by the WBRCP. Corrected colonial spellings are presented.

Mixed Orthographies

As was mentioned above, the appearance of multiple orthographies enables one to write the same Maya word in several different ways (see Bevington 1995: 23-26). Unfortunately the meaning of words can change rather markedly when improperly rendered between one orthography and another. It is therefore imperative that each site name consistently employs the same orthography throughout. Hallmarks of the Colonial Yucatec Orthography are the presence of the letter /c/ and /z/. The former stands for a "hard" /c/ sound as an invariant unglottalized /k/ (Bevington 1995: 24). The latter replaces the fricative /s/ which is diagnostic of more recent orthographies.

The original spellings of Actun Yax Can, Actun Tunchil Mucnal, and Cahal Uitz Na all combined elements of the colonial orthographies as well as newer orthographies. The word *actun* with a /c/ is a colonial spelling. Newer orthographies write the word "cave" with a /k/ as *aktun*. The same holds true for the word "settlement" or "place" as *cahal*. Since the colonial spelling is used consistently throughout Belize to designate cave sites and many surface sites as well, the qualifiers of the names of sites must also be written according to the colonial orthography. Consequently when read using the colonial orthography the site of Actun Yax Kan (as originally spelled) meant "Green Yellow Cave". This is obviously far removed from the intended name of "Cave of the Amazing Green Snake". The reason for this confusion is due to the fact that the speleologists used the colonial spelling for the word "cave" but a newer orthography for the other elements of the name. As a result the spelling should be changed to Actun Yax Can, with a /c/ since we know that the intended name included the noun "snake". The word "sepulcher" of Actun Tunichil Muknal (as originally spelled) was also written with a /k/ although it should have been written *mucnal*. The same error thus occurs in both names. In the case of Cahal Witz Na (as originally spelled), *cahal* is written in colonial, but the word "mountain" was written combining both colonial and newer orthographic elements. To remedy this error the name should be written Cahal Uitz Na.

Grammatical Errors

One grammatical error occurs in the name of Actun Tunichil Muknal (as originally spelled). Here the Yucatecan derivational suffix *-il* was added to *tunich* which means "stonen" or "of stone". The presence of the vowel /i/ in the derivational suffix negates its presence in the word for "stone" as it is redundant. Therefore the /i/ in *tunich* should be omitted, leaving us with a corrected spelling of Actun Tunchil Mucnal.

CONCLUSION

In sum, several of the most salient orthographic and linguistic inconsistencies were reported and corrected above (see Table 2). The emphasis that is placed on the usage of the colonial orthography results from its historic use in Maya archaeology. Unlike the opinion held by some, the orthography that we are implementing is not "newer" or "better" and consequently is unaffected by advances made in the understanding of Mayan languages and the manner in which to record them. The consistent use of the colonial orthography simplifies the already complicated task of naming sites in a language that is foreign to western academics.

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THE WESTERN BELIZE REGIONAL CAVE PROJECT RECONNAISSANCE EXPEDITIONS: RESULTS OF THE 1998 FIELD SEASON

Michael J. Mirro
Radford University

Vanessa A. Owen
University of Western Ontario

Christophe G. B. Helmke
McGill University

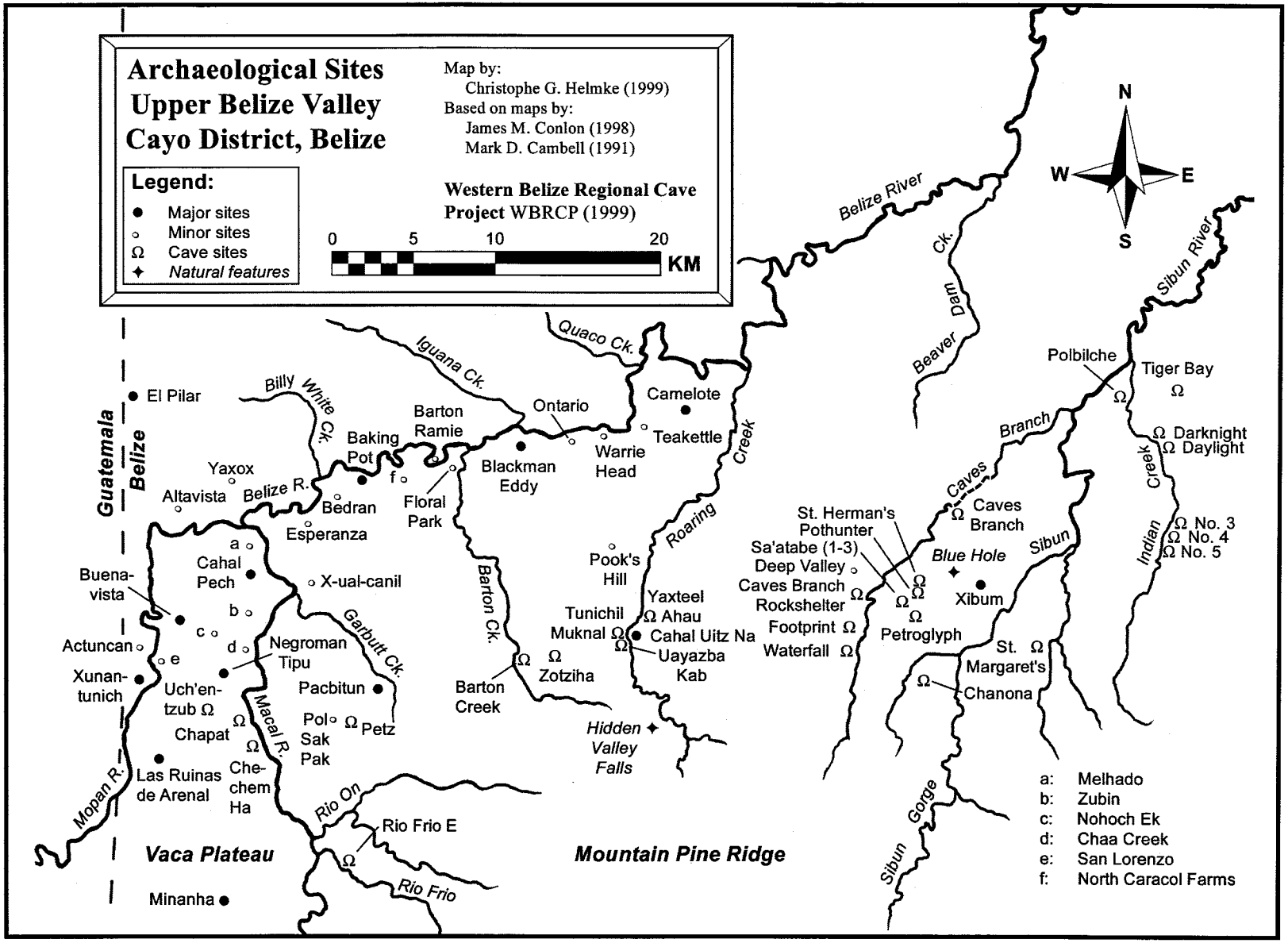
INTRODUCTION

During the 1998 field season the Western Belize Regional Cave Project (WBRCP) organized several reconnaissance expeditions to previously located, but superficially examined, cave sites. In addition to relocating the cave entrances, the purpose of these expeditions was to evaluate the potential for archaeological research at each site and to assess the amount of looting that had occurred since the time of discovery. Formal expeditions focused their efforts in the eastern perimeter of the Upper Roaring Creek Valley. Expeditions were also launched to Barton Creek Cave in the valley of the same name (Gibbs, Mirro and Awe 1999), and Actun Chapat (Awe 1998) in the Macal River Valley (Figure 1). Several caves relocated in 1996 and partially investigated in 1997 were also explored during the 1998 season. Additionally, during the course of these expeditions, several unrecorded sites were discovered. This report summarizes the explorations at these sites and all areas within caves that were explored or discovered in 1998.

STRUCTURE OF THE REPORT

This report serves as an update to the report of the reconnaissance expeditions of the 1997 field season (Awe et al. 1998). The 1997 report presented the sites discovered according to the type of site they represented. This report follows the same format, but a further distinction is made between formal reconnaissance expeditions and informal discoveries. Formal reconnaissance refers to expeditions organized for the sole purpose of relocating one or more sites. Expeditions undertaken specifically for the discovery of unrecorded sites are also considered under formal reconnaissance. Informal discoveries refer to the unplanned discovery of sites, resulting from exploration in the vicinity of known sites. A distinction is also made between reconnaissance expeditions on land and those that further explored the inside of caves.

A report is included in this volume for each site or sub-area of a site where intensive archaeological investigations were undertaken during the field season. Consequently, many of the sites mentioned in this article have a corresponding report in this volume, detailing the results of the investigations at each locus. The information provided for each site in this report is condensed to


Archaeological Sites
Upper Belize Valley
Cayo District, Belize
Map by:
Christophe G. Helmke (1999)
Based on maps by:
James M. Conlon (1998)
Mark D. Cambell (1991)
Western Belize Regional Cave Project WBRCP (1999)
Legend:
Major sites
Minor sites
Cave sites
Natural features
0 5 10 20 KM
N
W
E
S
Guatemala
Belize
Belize River
Iguana Ck.
Quaco Ck.
Billy White Ck.
Dami Ck.
Beaver Creek
Sibun River
El Pilar
Yaxox
Altavista
Belize R.
Baking Pot
Bedran
Esperanza
Barton Ramie
Floral Park
Blackman Eddy
Ontario
Warrie Head
Camelote
Teakettle
Roaring Creek
Barton Ck.
Barton Creek
Zotziha
Pook's Hill
Tunichil Muknal
Yaxteel Ahau
Cahal Uitz Na
Uayazba Kab
Hidden Valley Falls
Polbilche
Tiger Bay
Darknight
Daylight
Caves Branch
Caves Branch Creek
Indian Creek
No. 3
No. 4
No. 5
St. Herman's Pothunter
Sa'atabe (1-3)
Deep Valley
Caves Branch Rockshelter
Footprint
Waterfall
Blue Hole
Petroglyph
Xibum
Sibun
St. Margaret's
Chanona
Sibun Gorge
Cahal Pech
X-ual-canil
Buena-vista
Actuncan
Xunan-tunich
Uch'en-tzub
Chapat
Negroman Tipu
Garbutt Ck.
Pacbitun
Pol Sak Pak
Petz
Macal R.
Che-chem Ha
Las Ruinas de Arenal
Mopan R.
Rio On
Rio Frio E
Rio Frio
Minanha
Vaca Plateau
Mountain Pine Ridge
a: Melhado
b: Zubin
c: Nohoch Ek
d: Chaa Creek
e: San Lorenzo
f: North Caracol Farms

include the circumstances of the discovery, the location, and a general description of the site and associated artifacts. This reduces the amount of repetition in the overall series of reports. Sites are presented below each heading in their order of discovery.

FORMAL RECONNAISSANCE IN THE ROARING CREEK VALLEY

Formal reconnaissance expeditions in the Roaring Creek Valley (Figure 2) are those that set out to relocate cave sites that had been discovered and superficially documented by previous speleological expeditions. In addition, poorly documented areas of the Main Chamber in Actun Tunichil Muknal and Actun Yaxteel Ahau were explored. During a number of expeditions in search of the previously documented caves, several previously unrecorded rockshelters, caves, and mound groups were encountered. Results of these expeditions are discussed in this section.

ACTUN YAX CAN EXPEDITIONS

Actun Yax Can (Green Snake Cave)

Interest in Yax Can was stimulated by a previous report on the cave by Tomas Miller (1990; see also Marochov & Williams 1992). He described the site as having a 20m-deep vertical entrance followed by a downward sloping passage to a silted dry sump (Figure 3). Near the entrance pit there is a ledge upon which Maya artifacts lay exposed. The cave is located 2.5km southeast of Actun Tunichil Muknal in a ravine that drains off the Mountain Pine Ridge. Two expeditions were organized in an effort to relocate the entrance to Actun Yax Can.

Our initial attempt to find the cave proved to be unsuccessful due to a lack of time and familiarity with the terrain. This expedition was begun from the entrance of Actun Yaxteel Ahau (see Awe 1998; Awe et al. 1998) into the foothills to the southeast of Roaring Creek. While in search of the cave we noticed that the hills were being heavily logged for mahogany. Well-cleared dirt tracks, large enough to be travelled by heavy machinery, had been cut to follow most drainages and several abandoned logging camps were also encountered. Following these tracks indicates that they generally tend to reach towards the greater Roaring Creek Works to the north. The recent influx of loggers may account for an increase in looting observed at many of the sites in the area.

The second and final attempt to find Yax Can also proved to be unsuccessful, however, several interesting finds were discovered along the way. These included two rockshelters, a small spring cave, two patio groups, and a series of possible agricultural terraces. The second foray was begun further south, near the entrance to Actun Box Chhichh (see Marochov & Williams 1992: 42, 44). The aim was to climb the crest of hills surrounding Cahal Uitz Na and to descend the largest ravine to the east down to the entrance of Actun Yax Can. Cutting due east from the area surrounding Actun Box Chhichh, the summit of the hills was reached. Progress continued eastward along this ridge, as attempts were made to slowly descend closer to the head of the ravine in which Yax Can appears to be located. The tortuous karstic terrain considerably slowed our progress and short belays were used to descend some of the steeper limestone outcrops.

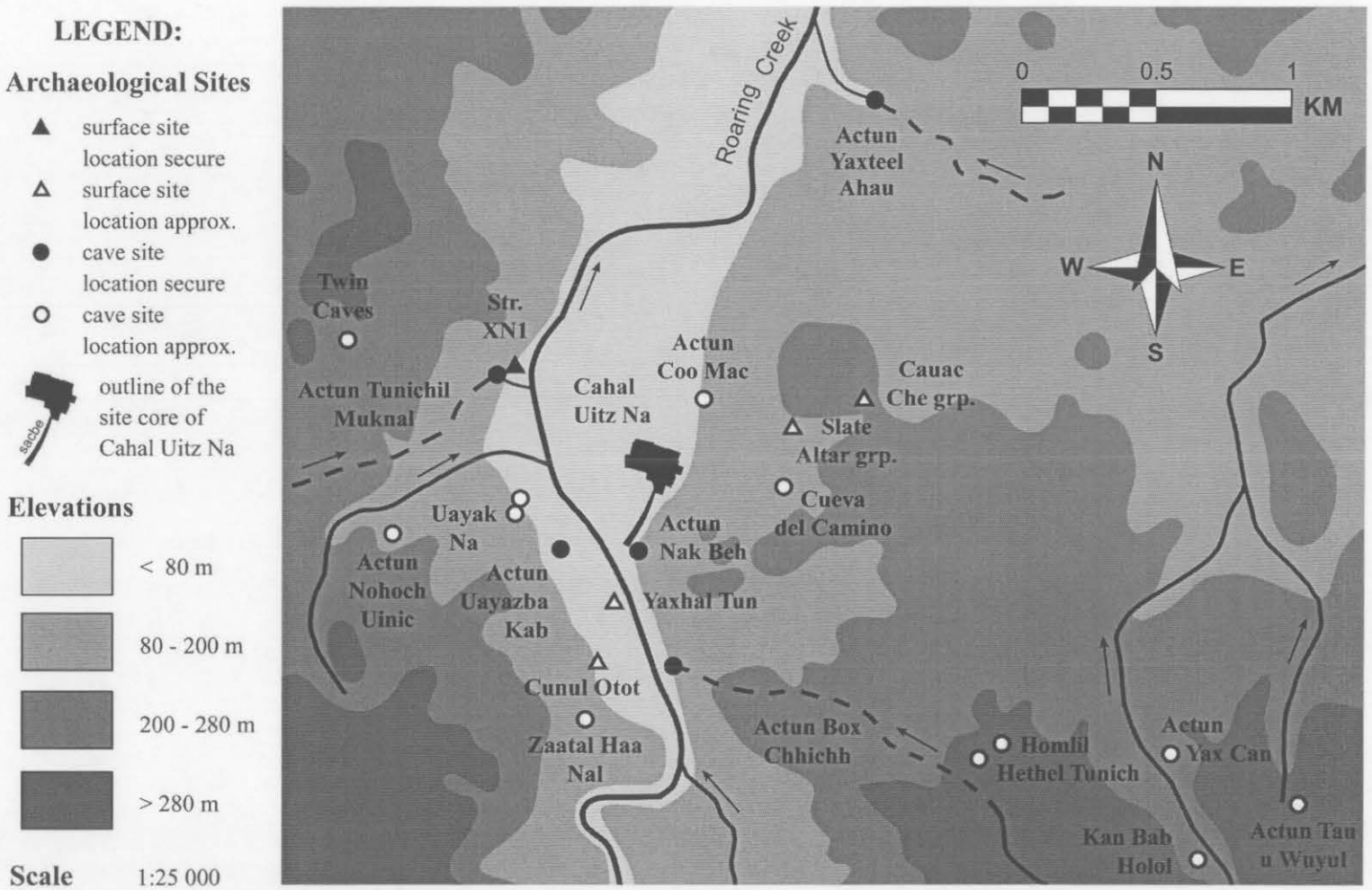
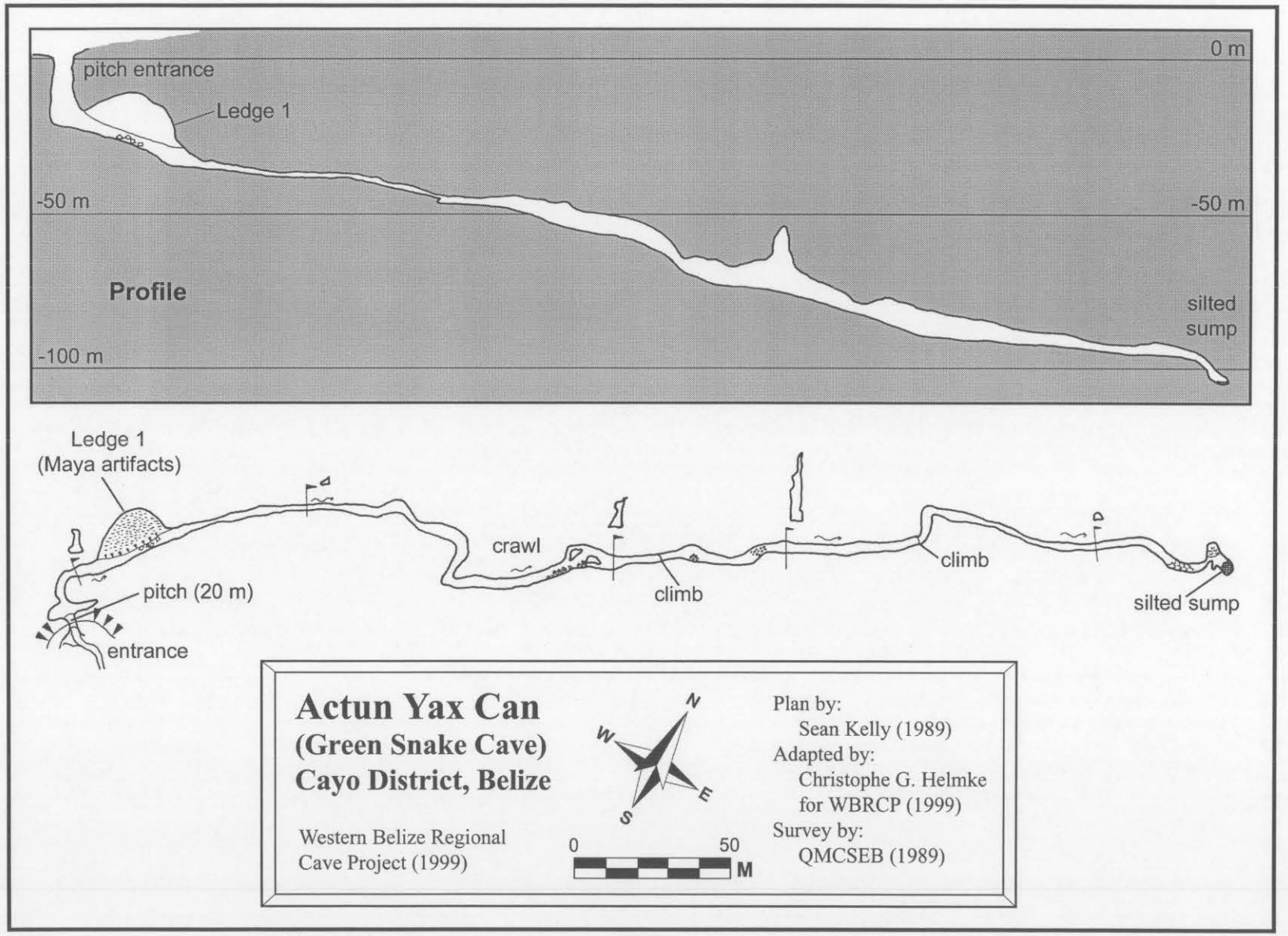


Figure 2: Archaeological sites of the Upper Roaring Creek Valley, Cayo, Belize.

(The Plan is oriented to UTM Grid Meridian North)


0 m
pitch entrance
Ledge 1
-50 m
-50 m
Profile
silted
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Ledge 1
(Maya artifacts)
crawl
climb
climb
pitch (20 m)
entrance
silted sump
Actun Yax Can
(Green Snake Cave)
Cayo District, Belize
Western Belize Regional
Cave Project (1999)
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Adapted by:
Christophe G. Helmke
for WBRCP (1999)
Survey by:
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Figure 3

Two rockshelters were located at the head of a ravine while descending the ridge of hills. Both lie on a bluff below the summit of the hills that rise east of Box Chhichh. This bluff lies east of the Roaring Creek river and is roughly 1.5 km southeast of the eastern entrance to Actun Tunichil Muknal. The first rockshelter is situated at the base of an outcrop that extends along the hillside. Outcrops continue to the east and northwest of the two rockshelters.

Cueva del Camino (Cave of the Path)

On the first reconnaissance trip in search of Actun Yax Can, a small cave was located on a path heading west, downhill to the surface site Cahal Uitz Na (Helmke et al. 1999), roughly 500m from the site. The cave consists of a small breakdown-filled passage that continues for approximately 10m. The passage becomes too constricted to allow passage beyond this point. Explored regions of the cave contained only one artifact. This single Middle Classic sherd (AD 600 - 700) (Gifford 1976: 193, 194; Helmke et al. 1999) was located near the entrance. Several areas of looter activity, in the form of disturbed rocks and excavated pits, were noted. The cave is located less than 100m from an abandoned logging camp.

Dave's Hethel Tunich (Dave's Crevasse)

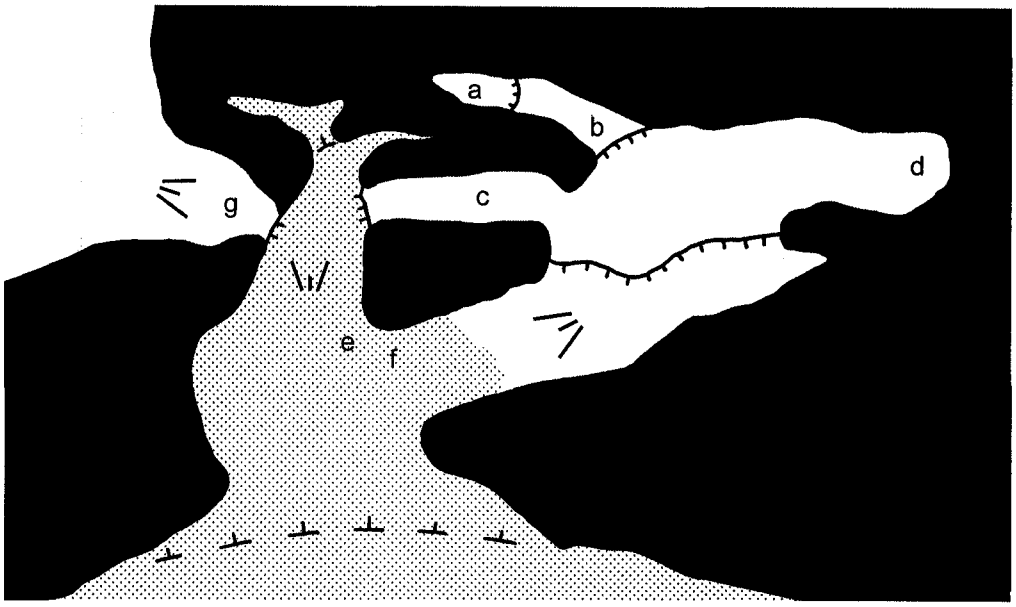
The cave consists of several meters of dead-end cave passage containing few formations (Figure 4). Ceiling height ranges between 1 and 2m. In the northeastern passage travertine formations cover the wall. No other indications of hydraulic activity were observed. No evidence of recent human entry or looting were observed. Archaeological material found within the rockshelter included ceramic sherds and a small concentration of jute shell. Two rim sherds were found near the entrance of the shelter and were identified as Garbutt Creek Red (Gifford 1976: 230-233) and Mount Maloney Black (Gifford 1976: 243-245). Both types date to the Late Classic (AD 700 - 900). Additionally, a dozen olla body sherds were seen within the deeper recesses of the cave. None of these sherds were identified in the field. The concentration of jute (*Pachychilus glaphyrus*) consisted of 5 to 6 shells. In comparison to other rockshelters and caves in the upper Roaring Creek Valley, relatively few artifacts were seen on the surface.

Amelia's Homlil (Amelia's Chasm)

This rockshelter was found less than 100m further southeast along the same outcrop. A small, unexplored passage was noted, and may indicate that this is a cave rather than a rockshelter. Near the entrance, in a small alcove, several sherds were seen but were not identified. No additional evidence of human activity was noted.

Kan Bab Holol (Yellow Crab Springs)

In the ravine in which Actun Yax Can may be located, a small stream was found flowing from a cave at the base of a cliff face. No exploration of the cave was made during this time but it was possible to visually determine that the passage was approximately 5m long before it turns. Unidentified and calcite-coated olla sherds were seen less than 10m from the cave entrance. This small cave may have been important in antiquity because it is located at a water source.



Legend:

a. sherds wedged between rocks
b. concentration of jute shells (5-6)
c. three striated olla body sherds
d. large body sherd (olla?)
e. Garbutt Creek Red rim sherd
f. Mount Maloney Black rim sherd
g. alternate entrance

Hethel Tunich
Roaring Creek Valley, Cayo District, Belize
Sketch map of rockshelter

Western Belize Regional Cave Project (WBRCP) 1999

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0 2 M

Plan by:
Christophe G. Helmke (1999)
Sketch by:
Michael J. Mirro (1998)

Revised: 00 / 00 / 0000

Figure 4

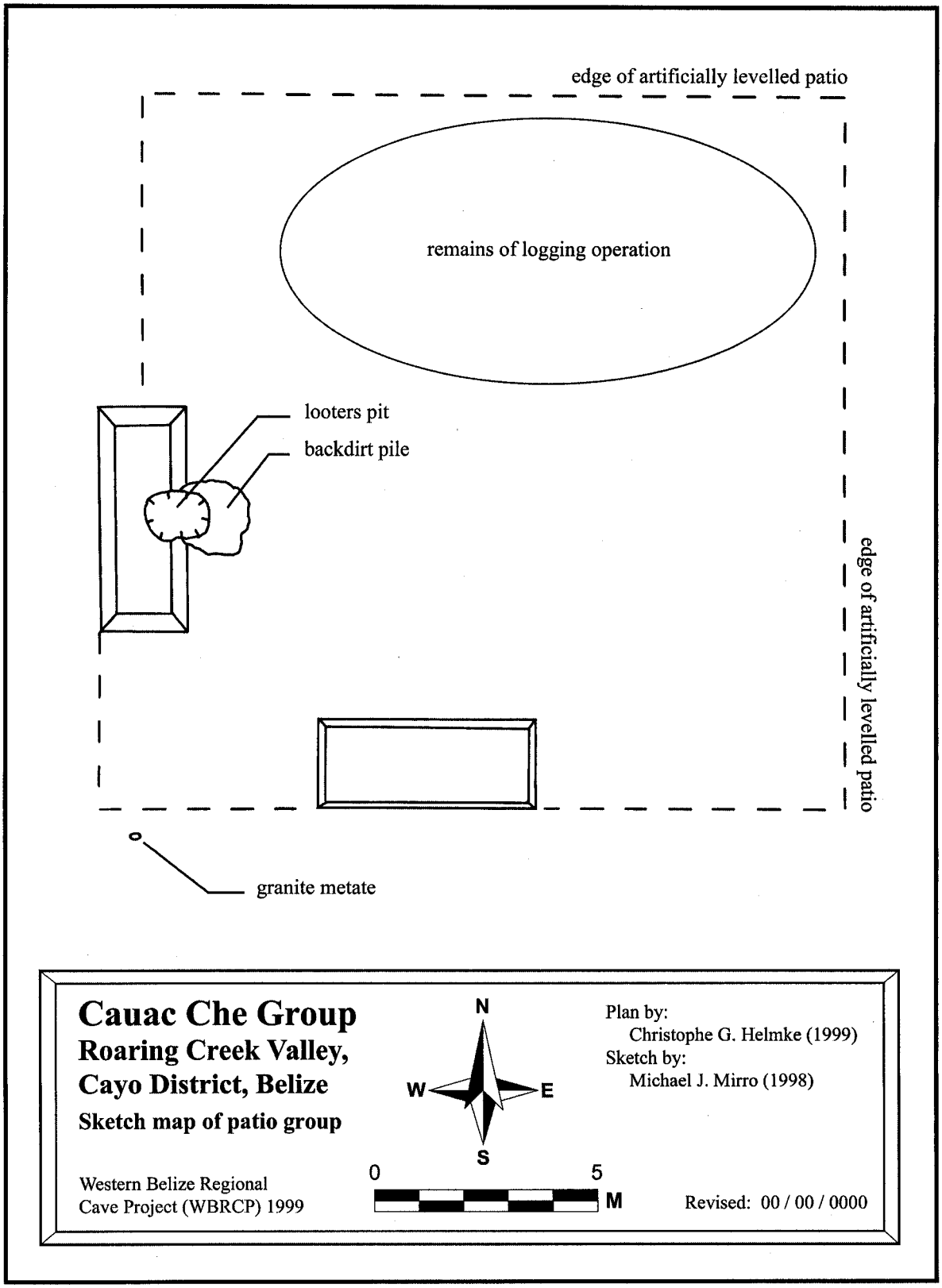
Cauac Che (Mahogany Group)

On a ridge overlooking Cahal Uitz Na (roughly 1km southeast), a plazuela group was encountered. It was named the Mahogany Group after the scatter of mahogany boards left behind by loggers. The presence of these boards and quantities of saw dust, indicated that this plazuela group had served as the location of a temporary sawing station. The group is located on a level area on the northern flank of the mountains to the south of Cahal Uitz Na. Karst outcrops are not present in the area but occur with frequency in the higher elevations to the south and east. To the north and northeast of the group, the terrain slopes downward toward the valley bottom. A shallow ravine cuts to the northwest. The Slate Altar Group (see Helmke et al., this volume) is located in this ravine approximately half-way between Cauac Che and Cahal Uitz Na.

The Cauac Che group consists of two structures on an artificially-leveled plaza (Figure 5). Despite the fact that the eastern and northern perimeters of the plaza are not defined by mounds, the edges of the leveled area are clearly discernable, suggesting that the plaza may have been plastered. The south side of the plaza is defined by a long, low, range structure that is approximately 0.30m high. The western structure rises approximately 1.50m above the ground surface. A leveled and elevated area extends to the west of that structure and may have formed another plaza. The western platform had been trenched by looters. This event appears to be roughly contemporaneous with the logging operation, as both the looters' pit and the mahogany boards are covered with similar quantities of foliage and fallen forest debris. The looters' pit penetrates axially into the eastern flank of the structure. It is nearly 1m wide (north-south) and approximately 1.5m long (east-west). The pit penetrates the entire height of the structure down to modern ground level, and appears to have cut through all construction phases. The backdirt was piled on the eastern end of the pit on the plaza floor. The backdirt contained a few small limestone rocks, was light brown in color and contained considerable quantities of saskab. This suggests that a plastered surface and construction fill were encountered during looting activity.

Approximately three meters south of the structures, a granite turtle back metate was seen lying on the forest floor. As the metate lies immediately adjacent to the trail that traverses the plazuela, it would appear that it is located in a secondary context. The backdirt from the looters pit was examined and several artifacts were identified. Archaeological material identified in the backdirt included 45 ceramic sherds and 3 lithics. The ceramic material included 2 Garbutt Creek Red bowl rims (Gifford 1976: 230-233), 1 Roaring Creek Red dish rim (Gifford 1976: 240-243), 1 Cayo Unslipped olla rim (Gifford 1976: 276-283), 1 Alexanders Unslipped olla rim (Gifford 1976: 283-286), and 1 Daylight Orange: Darknight Variety dish rim (Gifford 1976: 301-303). Additional material included 2 unslipped ring bases, 1 red slipped portion of a flat based cylindrical vase, 1 orange slipped body sherd of a vertically fluted cylindrical vase, 1 striated olla body sherd, and 32 unidentified body sherds. All the lithics are chert flakes, consisting of 1 tertiary flake, 1 tertiary retouched flake, and 1 primary cortical flake.

The ceramics identified in the field date to the Terminal Classic (AD 800 - 900). These are the only data at the time that can be used to estimate the period of use of the plazuela group.


edge of artificially levelled patio
remains of logging operation
looters pit
backdirt pile
edge of artificially levelled patio
granite metate
Cauac Che Group
Roaring Creek Valley,
Cayo District, Belize
Sketch map of patio group
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Plan by:
Christophe G. Helmke (1999)
Sketch by:
Michael J. Mirro (1998)
Western Belize Regional
Cave Project (WBRCP) 1999
Revised: 00 / 00 / 0000

Figure 5

Slate Altar Group

A second group was discovered in a ravine to the east of Cahal Uitz Na. A wooden staff planted firmly by the side of the trail through the ravine may have served as a marker for the loggers. The Slate Altar Group was discovered several meters southwest of this marker. This group is situated approximately 500m from the Cauac Che group, 200m north of Cueva del Camino, and roughly 500m east of Cahal Uitz Na. A detailed report of the investigations carried out at this group is included in this volume (Helmke et al. 1999). Several looters' pits were seen throughout the group. One pile of looters' backdirt contained many fragments of human bone and ceramic remains. In the same ravine as the Slate Altar Group, several possible agricultural terraces were discovered set into the base of the ravine.

ACTUN BOX CHHICHH EXPEDITION

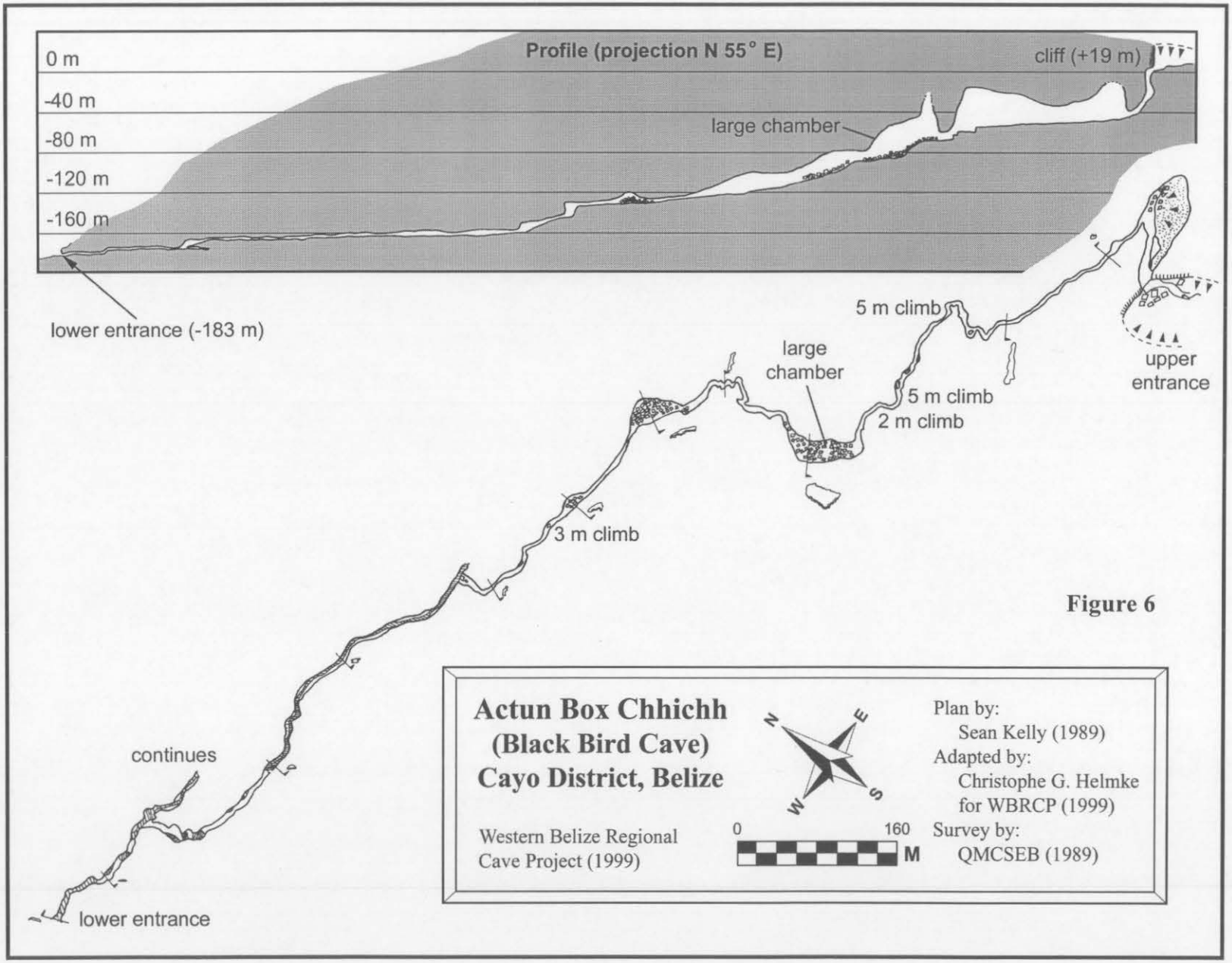
Actun Box Chhichh (Black Bird Cave)

Box Chhichh is a cave that was previously reported by Miller (1990) and by Marochov & Williams (1992: 42, 44, 46). The cave was described as a multi pitch cave with two entrances (Figure 6). The eastern or upper entrance is an insurgence draining a ravine, and a seasonally-active spring is associated with the lower entrance. The lower or western entrance was located along the cliffs to the east side of Roaring Creek about one kilometer south of Cahal Uitz Na. The western entrance to the cave is a low sandy crawl way. The cave, roughly 2km long, is predominantly a stream passage ranging from 0.5m to 2m in both height and width. In several areas formations abound.

We investigated the lower or western portion of the cave for approximately 700 meters. No cultural materials were encountered in the portion investigated in 1998. Previous speleological explorations of the eastern portion of the cave have noted the presence of a "small amount of broken Mayan pottery ... together with some dry stone wall terraces" (Marochov & Williams 1992: 42). None of the archaeological material reported by the cavers was relocated during the course of the 1998 WBRCP exploration. The presence of architecture in Actun Box Chhichh (Marochov & Williams 1992: 42), Tarantula Cave (Helmke, Griffith, & Mirro 1999), and Actun Chapat (Awe 1998), is evidence that architectural features in caves are more widespread in central Belize than previously noted.

Actun Zac Chho (White Rat Cave)

A small spring cave in the cliff face was found approximately 80m north of the entrance to Box Chhichh. The entrance is located at a dry arroyo. The cave was named Actun Zac Chho, or Cave of the White Rat, after an encounter with a large white rodent near the entrance of the cave. Zac Chho consists of one main passage ending in a sump and a small crawl on the southern side of the cave. The main passage is roughly 30m long and ends in a pool of water. The side passage is a small crawl that opens into a small chamber. The chamber contains two undiagnostic ceramic sherds. The passage continues through a small crack in the floor but was not large enough for exploration. This cave holds little if any potential for future work.


Profile (projection N 55° E)
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cliff (+19 m)
large chamber
lower entrance (-183 m)
5 m climb
large chamber
upper entrance
5 m climb
2 m climb
3 m climb
continues
lower entrance
Actun Box Chhichh
(Black Bird Cave)
Cayo District, Belize
Western Belize Regional Cave Project (1999)
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Plan by:
Sean Kelly (1989)
Adapted by:
Christophe G. Helmke for WBRCP (1999)
Survey by:
QMCSEB (1989)

Figure 6

AUXILIARY RECONNAISSANCE IN THE ROARING CREEK VALLEY

Actun Zac Thul (White Rabbit Cave)

This cave is located at the head of a small arroyo off the Roaring Creek. The cave is located 300-400m south of Uayazba Kab. At first glance, Zac Thul appears to be a small rockshelter, however, exploration revealed that it is possible to squeeze through boulders in the floor into a small passage leading downward. This passage opens into a much larger passage that continues south for several hundred meters. At this point the passage splits.

In our brief survey of the cave no cultural material was discovered. This may be due to the restricted entrance and the fact that the cave floods during the rainy season. Natural debris was observed in the upper regions and in most passages of the cave.

Rockshelters West of Actun Uayazba Kab

On the mountain slope above Uayazba Kab, several rockshelters were located in a maze of karstic outcrops. Long narrow towers of limestone rise from the ground, and narrow canyons lie between. The network of canyons forms a maze. Small rockshelters and caves were located at the base of many of these rock towers. Several sherds were noted inside almost every rockshelter that was discovered. Future investigations could shed light on the nature of Maya activities in these rockshelters.

Rockshelter Near the Entrance to Actun Tunichil Muknal

This rockshelter is a small recess underneath a large boulder, approximately 100m north of the eastern entrance of Actun Tunichil Muknal. The recess opens into a small chamber below the boulder. Inside and outside of this chamber several unidentified sherds were discovered. Modern refuse was also present inside the chamber.

Actun Coo Mac (Crazy Pit Cave)

Actun Coo Mac is a small cave located at the foot of the eastern hills of the Roaring Creek Valley. The cave is located to the northeast of the site center of Cahal Uitz Na, less than 200m north of the survey boundary established by the WBRCP in 1998. The trail leading to this cave passes over a short retaining wall that may be part of an unidentified structure or an agricultural terrace. Little exploration has been conducted within the cave. A brief visit identified a very short passage and a small ledge to the west with a small chamber. A low density of sherds covered the surface of the ledge. No ceramic examinations were undertaken at the time.

Two small rockshelters are adjacent to the entrance of the cave. These are located on the opposite sides of an east-west oriented limestone outcrop. Several hundred ceramic sherds littered the surface of both rockshelters. Looting or animal activity are indicated by small, shallow pits along the walls of both rockshelters. Future investigations may elucidate the relationship of ancient activities at this site to those at Cahal Uitz Na.

FORMAL RECONNAISSANCE WITHIN PREVIOUSLY LOCATED CAVES

Actun Yaxteel Ahau (Ceiba Tree Lord Cave)

With the onset of the 1998 season archaeological investigations began inside the cave site of Actun Yaxteel Ahau. During this time, examination of unexplored areas was undertaken, resulting in the discovery of two new ledges with cultural materials (Ledges 5 and 6), in addition to the first four discovered by Miller and Coons between 1986 and 1989 (Figure 7) (Miller 1989, 1990; Coons 1986; Roberts 1990). Ledge 3 was briefly inspected on two occasions at the beginning of the 1998 season and a preliminary survey was conducted by Jeff Ransom (Figure 8). Ledges 1 and 2 were the focus of WBRCP investigations in 1998 and are reported in two articles in this volume (Mirro and Awe; Owen and Gibbs, this volume).

Ledge 3 is located approximately 650m inside Actun Yaxteel Ahau on the southern side of the main streamway. The preliminary map reveals that the ledge is over 16m long (east-west) and ranges between 2m and 6m in width (north-south). A map of Yaxteel Ahau produced from a 1986 survey by Coons and Miller suggests that the ledge may be as much as 50m wide. Since the resolution and scale of the archaeological map and the speleological map differ greatly, the exact dimensions of the ledge can only be ascertained once the mapping operations are completed during the 1999 season.

A large fragment of a granite metate was found lying on the floor of the second landing of the ledge. Fragmentary remains of ollas were also seen on the first landing. Personal communications between Jaime Awe and Tom Miller notified us of the presence of complete and nearly complete ollas on the ledge in 1986 (Jaime Awe pers. comm. 1998). Exploration in the 1998 season revealed numerous large sherds of several ollas, however no complete vessels were encountered. Furthermore, several areas of disturbance in the sandy floor suggest looting activity. A large number of footprints in this area were also observed.

Ledge 4 lies further east and on the opposite side of the streamway as Ledge 3. The ledge has not been explored by members of the WBRCP. Visual inspection from Ledge 3 suggests the ledge is several meters higher and of similar dimensions. Additionally a small entrance was observed on the eastern side. Conversation between Miller and Awe suggested that the ledge has no archaeological material (Awe et al. 1998). Investigations on Ledge 4 are planned for the 1999 season.

Ledge 1 is located near the main entrance to the cave and extends for approximately 100 meters on the southern side of the streamway. During mapping operations of Ledge 1 a second entrance was noticed on the opposite (northern) side of the streamway. Several ceramic concentrations were noted in this northern area, designated Ledge 5. Sherds of Dos Arroyos Orange Polychrome (Gifford 1976:173-179) were noted. The deposits are similar in composition to those of Ledge 1. A pile of rocks with a slate cobble in the center are located on a small shelf above the river, at the west end of the ledge. Other features of a similar nature were discovered but apparently were disturbed by looter activity.

A steep-sided sinkhole lies outside of the entrance to Ledge 5. At the opposite end of the sinkhole is a third entrance to Yaxteel Ahau. This entrance is a large opening that narrows to a small

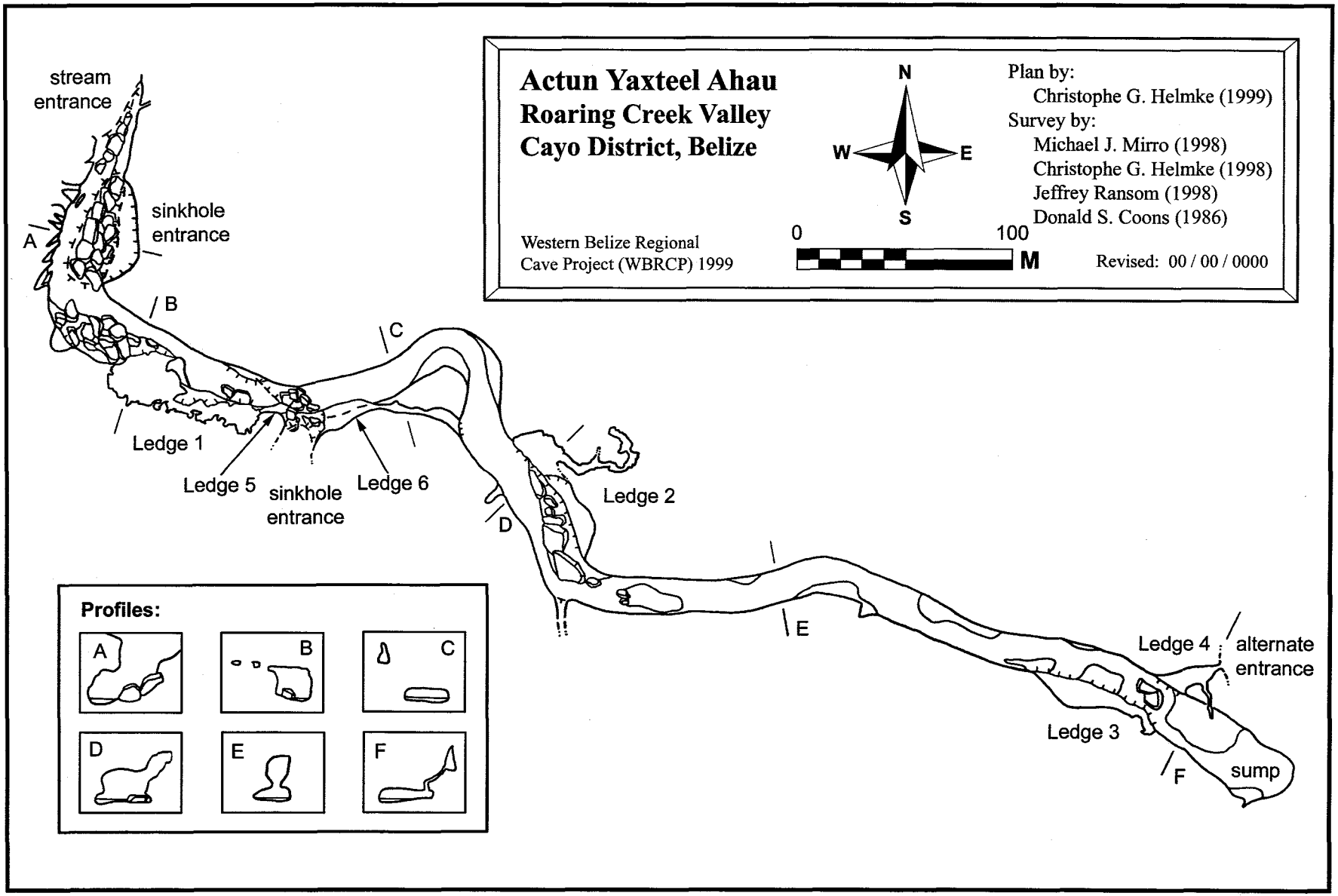


Figure 7: Map of Actun Yaxteel Ahau showing the location of areas with cultural deposits.

passage. In a small cavity in the rear of the entrance, a slate mirror backing was discovered. Several ceramic sherds were observed on the floor of the ledge, and in a small passage leading from the rear of the room. This passage leads down to the main streamway further into the cave. It appears that recent traffic has occurred inside this passage.

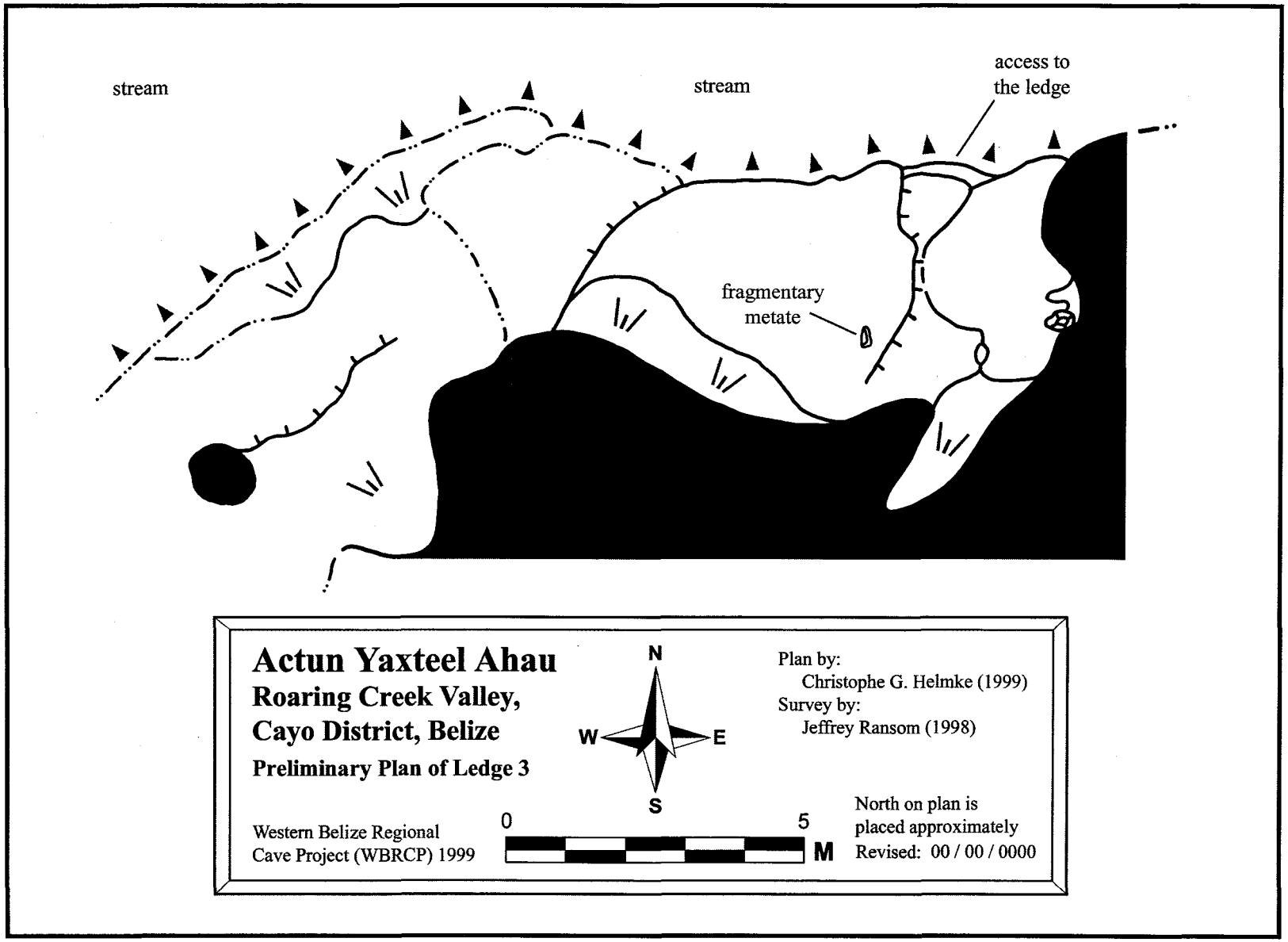
On top of a small climb another ledge was discovered containing a number of ceramic sherds. This area was designated as Ledge 6. The ledge does not appear to have been visited in recent years since no signs of footsteps or muddied formations were observed.

Ledge 6 is long, narrow, and rises approximately 15m above the river. The surface of the ledge slopes steeply down toward the river. In one area a passage leads north, away from the river, along a fracture. Several artifacts were discovered on this ledge. A number of sherds lie on the surface of the ledge. In a small niche defined by stalagmitic columns, a third of a bowl with a basal flange was discovered resting on crystalline flowstone. The exterior of this bowl is decorated with horizontal polychrome stripes above the basal flange. This vessel was determined to be of the Early Classic (AD 300 - 600) Yaloche Cream-Polychrome type (Joseph Ball pers. comm. 1998; Gifford 1976: 181-182), although the exterior linear decoration is more common on Dos Arroyos Orange-Polychrome bowls in the Roaring Creek Valley. The vessel was placed in an area of pristine white flowstone although the bowl was coated with a thin layer of clay. This suggests that the bowl was brought to its present location after being deposited in an unknown previous context. Since no signs of looting or modern disturbance were noted in the area, it is possible that the ancient Maya were responsible for the redeposition of the bowl. Other artifacts include a red-slipped pedestal base at least 10cm high and several concentrations of sherds from another vessel.

Actun Tunichil Muknal (Stone Sepulcher Cave)

In 1998 an exploratory trip was made into the western end of the Main Chamber beyond the Western Wall and the Sepulcher (see Moyes & Awe 1998). Archaeological investigations in 1996 and 1997 focused on the eastern half of the Main Chamber. The Western Wall forms the western boundary of the 1996-1997 survey operations. The remaining western extent of the Main Chamber was only briefly explored in 1997. This exploration suggested that the survey boundary did not need to be extended further as only minimal archaeological materials were seen west of the survey boundary. Speleological maps published by Miller suggested that artifacts were located to the west of the survey boundary (Miller 1990; Marochov & Williams 1992). These maps indicated that the farthest artifact within the Main Chamber was located 175m west of the survey boundary. The 1997 exploration was able to locate three ceramic vessels, but did not uncover any additional evidence of prehistoric use. The purpose of the 1998 trip was to substantiate the number of vessels, to record contextual data, to generate descriptions of all vessels, and to further assess the archaeological potential of this area. The 1998 exploration confirmed that the farthest artifact within the Main Chamber was that indicated on the speleological map and was indeed located under 200m west of the survey boundary (Figure 9).

Beyond the Western Wall of the Main Chamber the passage narrows to roughly 10m wide by 2m high. A small dry stream bed cuts through the mud in the floor and appears to be active during the rainy season. Flecks of charcoal are scattered across the muddy floor. The passage narrows down to a rift between two large breakdown boulders which then opens into a chamber over 100m at its widest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Roaring Creek Valley,
Cayo District, Belize
Preliminary Plan of Ledge 3
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Figure 8

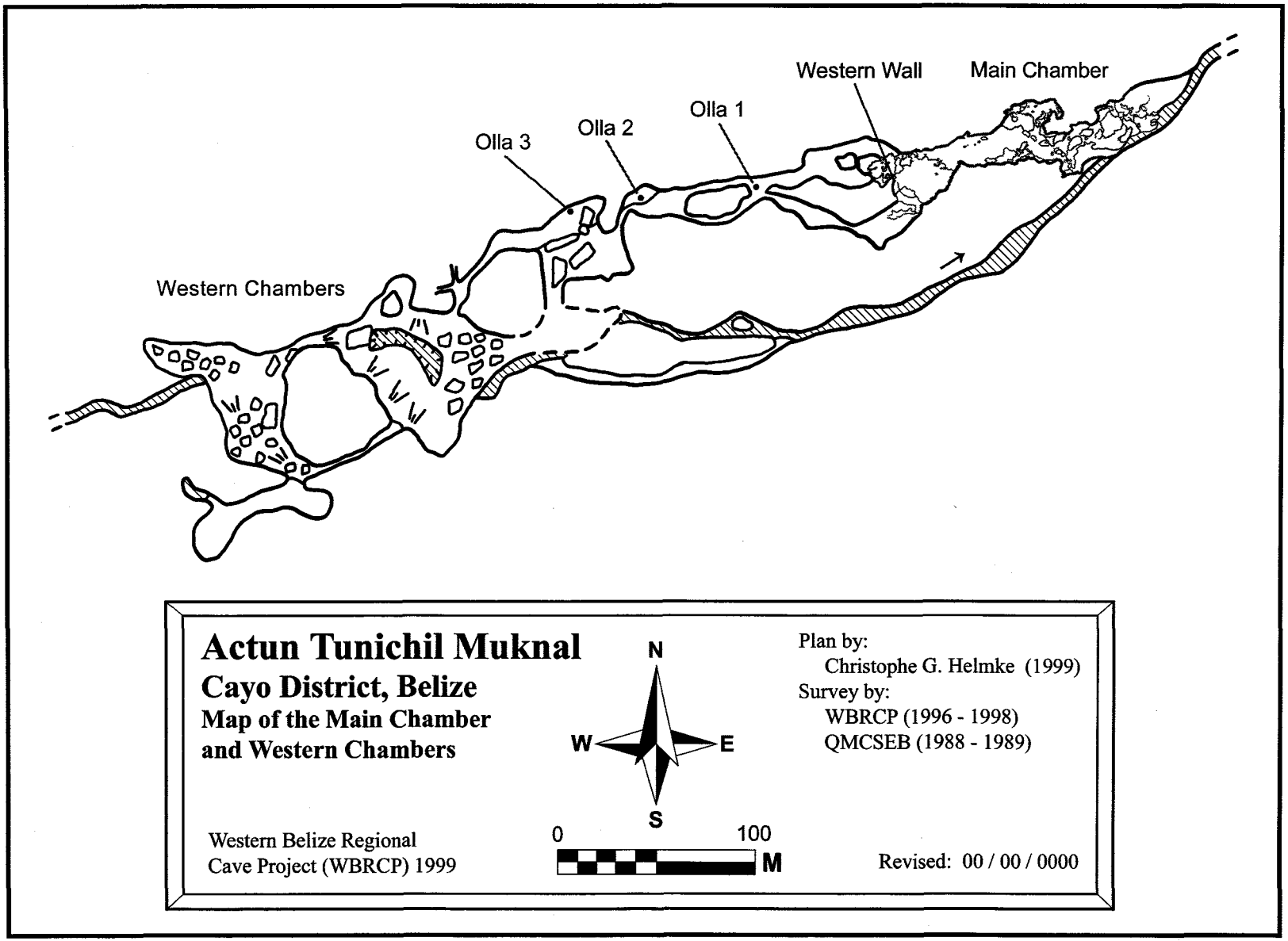


Figure 9: Plan showing the location of the ollas encountered during reconnaissance. Note that their location is approximate and is based on descriptions made in the field.

(north-south) and between 200m and 300m long (east-west). Several other large chambers can be accessed through small passages off the side of this chamber. The chamber consists of an open sandy floor, with calcitic columns at the edges of the room. The western end of the chamber was explored up to a large cavity that drops down to the river.

The three ceramic vessels were relocated in 1998 and their provenience is consistent with the data presented by Miller, as well as the results of the 1997 exploration. These consisted of three concentrations of olla fragments. Olla 1, represented by 5 sherds, was located in the first constriction of the passage over 50m west of the Sepulcher. The floor of this area is characterized by a clayey matrix with a seasonally active stream. The largest sherd represents the upper half of an olla with the basal portion missing. Another smaller sherd rests atop the larger sherd. Three additional sherds were seen lying just to the east. Rim diameter could be reconstructed to 21cm and maximum body diameter was determined to be 26.5cm. The olla has unslipped interior and exterior surfaces and has a striated exterior. A small speleothem cluster is located just south of the olla.

Olla 2 is located 40m west of Olla 1. The vessel is fragmentary and represents approximately half of an olla. Several fragments of charcoal are located inside the olla. This olla rests upon a small clay mound, south of a small stream bed. Olla 2 has a rim diameter of 23cm, a maximum body diameter of 24.5cm, and a height of 29cm. Average wall thickness of the olla is 0.5 cm. Both interior and exterior surfaces are unslipped. The exterior surface is striated.

Olla 3 is represented by two sherds. One sherd was found lying on the northern side of a small stream bed, while the other was found south of the stream bed. Although the two sherds do not conjoin they are probably from the same vessel. Both are unslipped and have striated exterior surfaces. A complete olla was seen in 1997, but may not have been relocated in 1998.

The western portion of the Main Chamber, explored in 1997 and 1998, is larger than the eastern portion, investigated in great detail between 1996 and 1998. The distribution of artifacts in both areas is dissimilar. The quantity of artifactual and osteological remains that were discovered in the eastern portion of the Main Chamber (see Moyes & Awe 1998; Gibbs 1997, 1998) is much larger and more varied than the cultural material in the west. This difference in distribution is reflected in the morphology of the Main Chamber. The eastern section is approximately level, and easily accessible from the main streamway. In contrast, the western section is a high ledge approximately 15m above the chamber floor, with more difficult access. Hence, most of the cultural material was deposited in the most accessible part of the Main Chamber.

Actun Nak Beh (Road's End Cave)

Actun Nak Beh was first discovered and explored on a reconnaissance trip by Griffith in 1996. In a subsequent exploration of the valley in 1997, the cave entrance was relocated (Awe & Helmke 1998). In 1998, during the survey of Cahal Uitz Na, the exact location of the entrance and its relationship with the sacbe that leads to the cave was established (Conlon & Ehret 1999). During the same field season the cave was explored more thoroughly than had previously been possible.

The main entrance of the cave is a small key hole-shaped passage leading out of the extremity of a rockshelter. The portion of the cave entrance that forms a rockshelter has been used in past years

as a temporary encampment for hunters, loggers and possibly looters. This is evidenced by the accumulation of garbage. Among the refuse are plastic wrappers, punctured rubber boots, shotgun shells, tin cans, and cigarette packs.

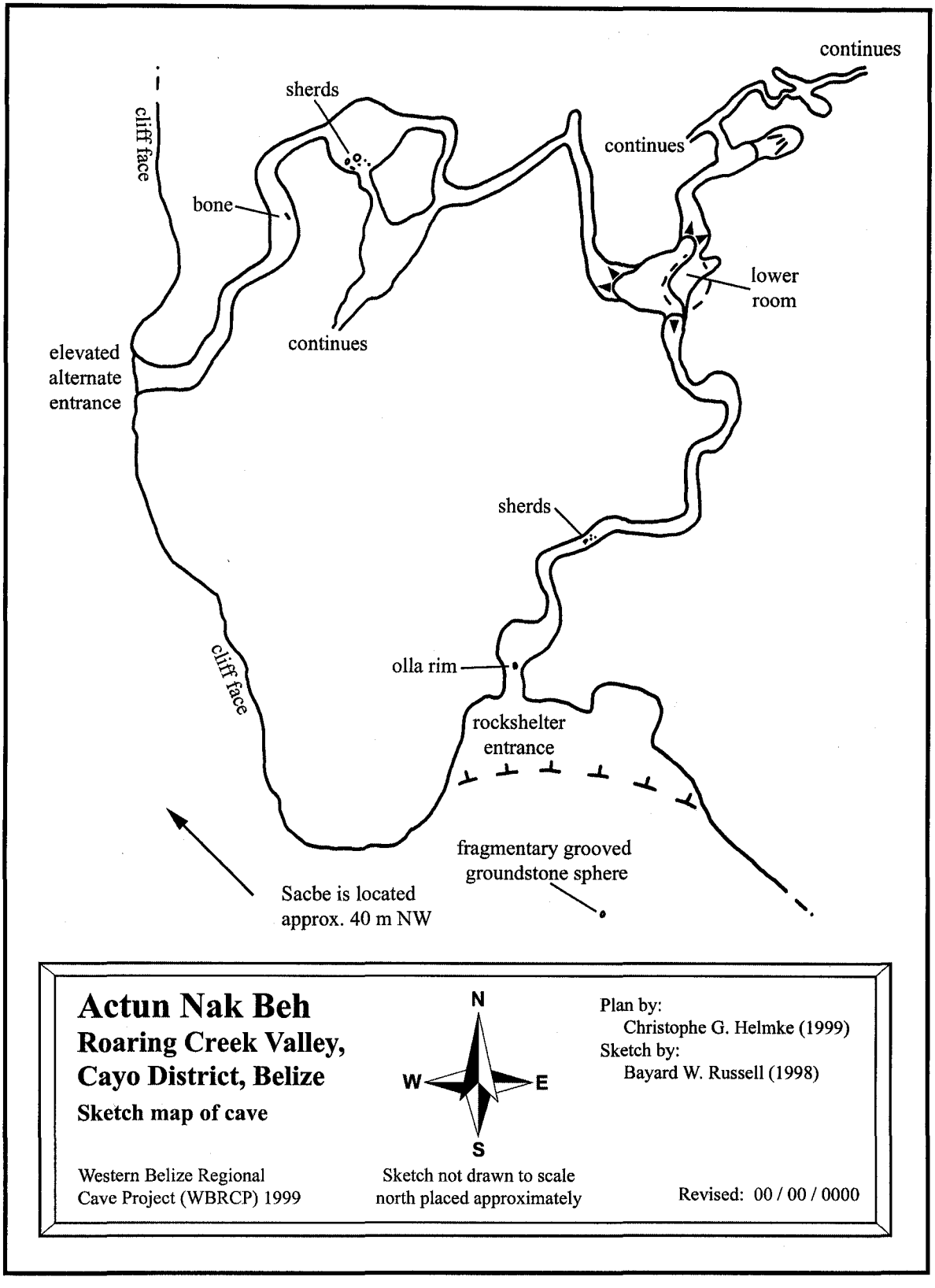
The cave is between 80m and 120m long and has two entrances (Figure 10). The second entrance is located about 30 meters southwest along the cliff face from the main entrance. Most of the cave passage is of standing height except for some branches in the rear. Several climbs are necessary to continue along some of the deeper passages. The cave has been heavily looted. Almost every portion of the cave shows signs of recent activity, ranging from footsteps to small looter pits. Few signs of Maya activity are currently present in the cave. Beyond the main entrance in a low section is a collection of stones which encloses a decomposed bone fragment, an animal tooth, and a ceramic sherd. Further down the passage in a larger room is a small cluster of sherds, some of which exhibit basal flanges. Various other sherds were encountered near the other entrance to the cave. The presence of sherds with basal flanges indicates Early Classic (AD 300 - 600) use of the cave. Based on the presence of Late Classic (AD 700 - 900) olla rim sherds and a fragmentary grooved ground stone sphere at the entrance to the cave (Awe & Helmke 1998), it can be concluded that the cave was used during the Early Classic and the Late Classic from AD 300 to AD 900.

As has been noted by Conlon and Ehret (1999), Actun Nak Beh is one of the most "innocuous" of the caves in the Roaring Creek valley. Despite its relatively small size, the importance of the cave is attested to by the presence of an imposing sacbe leading to its entrance from the site core of Cahal Uitz Na. It seems clear that the artifacts presently contained within the cave do not corroborate the cave's ancient importance. There is little doubt that the intensity of looting activities accounts for the paucity of cultural remains in Actun Nak Beh. One climb within the cave was left unexplored due to technical difficulty. If an undisturbed area is to be located in the cave it would probably be at the top of this climb. Recovery of artifacts from an unlooted context within Nak Beh may reveal the importance of the cave to the ancient Maya of Cahal Uitz Na.

FORMAL RECONNAISSANCE OUTSIDE OF THE ROARING CREEK VALLEY

Actun Chapat is one of the sites included in the research objectives of the WBRCP (Awe 1998). In the 1980s the DOA briefly visited the site in response to reports of looting, and a salvage operation was performed in 1982. Despite this initial expedition no formal archaeological investigations have previously been conducted at the site. Exploration of the cave was undertaken in 1998 as part of preparation for investigation of the site in 1999.

Upon the request of John Morris, the Acting Commissioner of Belize's Department of Archaeology, Barton Creek Cave was visited by WBRCP personnel in 1998. The purpose of this expedition was to assess the amount of damage and disturbance that has resulted from tourism and looting since discovery of the site. Particular attention was paid to the state of preservation of the archaeological materials within the cave.


continues
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bone
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alternate
entrance
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cliff face
olla rim
rockshelter
entrance
fragmentary grooved
groundstone sphere
Sacbe is located
approx. 40 m NW
Actun Nak Beh
Roaring Creek Valley,
Cayo District, Belize
Sketch map of cave
N
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Plan by:
Christophe G. Helmke (1999)
Sketch by:
Bayard W. Russell (1998)
Western Belize Regional
Cave Project (WBRCP) 1999
Sketch not drawn to scale
north placed approximately
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Figure 10

BARTON CREEK CAVE EXPEDITION

A brief reconnaissance trip was organized to Barton Creek Cave, located in the drainage basin of the same name, west of the Roaring Creek Valley. Early explorations of Barton Creek Cave include those of Barbara MacLeod in the mid 1970s, visits by Tomas Miller between 1985 and 1988, and the 1988 Queen Mary College Speleological Expedition to Belize (Marochov & Williams 1992: 33-34). As the 1998 expedition is reported in detail in a separate report (Gibbs, Mirro and Awe1999) only a summary is provided here. Three areas with cultural materials were discovered this year. The first area is located near the entrance, where several sherds were observed on ledges and shelves above the river. The second area consists of a ledge approximately 200 m from the entrance. It contains human remains, two complete ollas, and several potsherds. Area 3 is represented by a bridge of flowstone that reaches over the river. Skeletal remains of several individuals were found at this area.

ACTUN CHAPAT EXPEDITION

Actun Chapat (Centipede Cave)

Actun Chapat was first explored in 1982 by members of the DOA, headed by Jaime Awe, John Morris and Allan Moore (Jaime Awe pers. comm. 1998). At the time the only known access to the cave system was a sinkhole entrance which was descended with the aid of a crude log ladder. During the 1998 field season, Actun Chapat was entered through another principal entrance. The walls of this eastern entrance are covered with recently incised and painted graffiti. Modern hearths are also present in the areas illuminated by daylight. A preliminary survey established that the cave is oriented principally on an east-west axis. The sinkhole was identified as the western entrance to the cave system. This survey of the main passages also determined that the cave is 435m long from Entrance 1 to Entrance 2. In addition to the main passages, another main branch, several side passages, and an unexplored river passage all contain evidence of ancient Maya use.

Evidence of looting activities was observed during the first visit by Awe and Morris in 1982. During this visit several important artifacts were discovered and removed for safekeeping and curation. The artifacts removed are: one Late Classic (AD 700 - 900) Zacatel Cream-Polychrome vase (known as the "Cacao Vase"), a fragmentary Protoclassic (AD 100 - 250) Metapa Trichrome vase (see Adams 1971: 28, Fig. 22cd; and Carot 1989: 39, Fig. 22f), one fragment of a wooden torch, one mirror backing of wood that was carved with hieroglyphs and showed traces of red hematite, and a sample of sherds collected from the looter pits. All artifacts of wood are currently stored at the Royal Ontario Museum, Toronto, Canada. During the 1998 visit it was apparent that looting had continued steadily over the past years. No additional artifacts were removed in 1998.

Below the sinkhole entrance are a series of terraced platforms constructed of dry-laid retaining walls. These platforms are built into the base of an inclined slope that rises to meet the wall of the chamber that opens onto the sinkhole. One terrace was found to have partially collapsed since 1982. No evidence of looting activity was observed on the terraces. Many broken ceramic sherds were noted in the sinkhole area. Several of these sherds were placed on a large boulder, suggesting the possibility of recent looting activity. One large wide-necked olla situated in a small antechamber above the terraces was seen complete in 1982 but was discovered smashed in 1998 (Awe 1998 pers. comm.).

In the central passages of Chapat a chamber with two originally walled-in entrances was discovered in 1982. This chamber was relocated in 1998. At this time it was observed that the second walled-in entrance had been partially dismantled in addition to the first, that was broken through previous to 1982. These walls were constructed of limestone cobbles. Access to the chamber was possible due to the destruction of one of these walls. Within the chamber it was observed that numerous looter pits were present throughout. Observed in the backdirt of the looter pits were several fragments of human bone, fragments of charcoal, and many wide necked olla rims as well as other ceramic remains.

Outside of the entrance of the above mentioned chamber, in the main passage of the cave, a number of travertine pools have been disturbed by looting activity. Dozens of ceramic sherds were unearthed by looters and litter the floor and the travertine dams. Less than 100m away, a complete red-ware dish was found in an elevated niche in a passage linking the sinkhole and the walled-in chamber. The dish is either of the Mountain Pine Red (Gifford 1976: 193-195) or of Vaca Falls Red ceramic type (Gifford 1976: 235-237).

A large passage branches from the main passage of the cave. This branch continues south for several hundred meters and meets with a pool of water, the end of which was not reached or explored in either the 1982 or 1998 reconnaissance trips. In the upper sections of this passage (explored during both expeditions) human remains were observed as a wide surface scatter exposed by water activity. The quantity of human bone fragments has decreased substantially since the 1982 visit (Jaime Awe pers. comm. 1998).

A smaller passage is located near the northern end of the large branch passage. This passage is populated by many bats. William Gonzalez of Chechem Ha has remarked that a metate is located at the rear of the passage. Future work in this passage will be limited to archaeological exploration, since the large number of bats inhabiting the area poses a health concern.

Son of Chapat

The Son of Chapat is a smaller cave located in the same valley as Chapat. This cave is located several kilometers east down an arroyo forming the base of the valley. A concrete stairway has recently been built up the entrance to facilitate access to the cave by a local tour guide.

Less than 150m of cave was explored in 1998. Most of the passage is of walking height except the rear. Here it is necessary to squeeze between flowstone formations constricting the passage. Beyond this point is a small chamber narrowing into a wet crawl. About halfway between the entrance and the rear of the main passage is a branch that was left unexplored. Our guide, William Gonzalez of Chechem Ha, informed us of a continuing passage with artifacts.

Evidence of looting is widespread throughout the cave. Looter pits and broken ceramic sherds are concentrated at the entrance to the cave. A number of small sherds were noticed throughout the site. Many of these are concentrated in the entrance area as small piles. A lower concentration of sherds is scattered in the main passage.

Future work at this cave may be limited to a small scale map, and field examination of the artifacts visible on the surface. The extensive looting precludes more intensive investigations.

CONCLUSION

The principal goal of the 1998 reconnaissance expeditions was to locate previously know cave sites, assess the damage incurred by looting, and determine the archaeological potential of each site. The results of this season's reconnaissance greatly surpassed our expectations. A significant number of new sites were discovered during the expeditions to previously known sites. One of the most distressing finds was the amount of destruction that has occurred at many of these sites as a result of looting. The wide scale looting of many sites in the Roaring Creek valley may be attributable to the increase in logging in the region. The importance of reconnaissance trips lies in the amount of data that can be collected over short periods of time before valuable information is lost to looting.

Another important discovery that has emerged from our reconnaissance is an awareness of the widespread extent of ancient Maya presence in the hills to the east of the Roaring Creek. Even though we never reached our goal of locating Yax Can, en route we discovered a number of important sites in an area assumed to be uninhabited due to lack of water and inhospitable terrain. These discoveries provide us with a different outlook on the mountainous terrain surrounding the Roaring Creek.

Reconnaissance in 1999 will include the reinvestigation of some of the sites listed above and is expected to lead to the discovery of additional archaeological sites. The WBRCP plans to continue the search for Yan Kan in order to investigate that site in great detail. The data obtained from this site will be informative with regards to the intra-regional variation of Maya cave usage. This season's reconnaissance provided us with many new and exciting leads to investigate and further assess the diverse cultural history of the Roaring Creek Valley.

Acknowledgments

We would like to thank all the people who have participated in this year's arduous reconnaissance expeditions. These include: Bayard Russel, Amelia Jacobs, David Cruz, Jeff Ransom, Cameron Griffith, Jaime Awe, Catlin O'Grady, Sherry Gibbs, Holley Moyes, Peter and Ted of PACZ Tours, and William Morales of Che Chem Hah Cottages. We thank our project director Jaime Awe for encouraging our spirit of exploration and allowing us to pursue research in unchartered terrains. Thanks are also extended to John Morris, the Commissioner of the Department of Archaeology, for providing us with the possibility to explore some of the most interesting sites of Belize. A final thanks to all the people who made the project work efficiently.

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SURVEY AT THE MAJOR CENTER OF CAHAL UITZ NA, CAYO DISTRICT, BELIZE

James M. Conlon
University College London

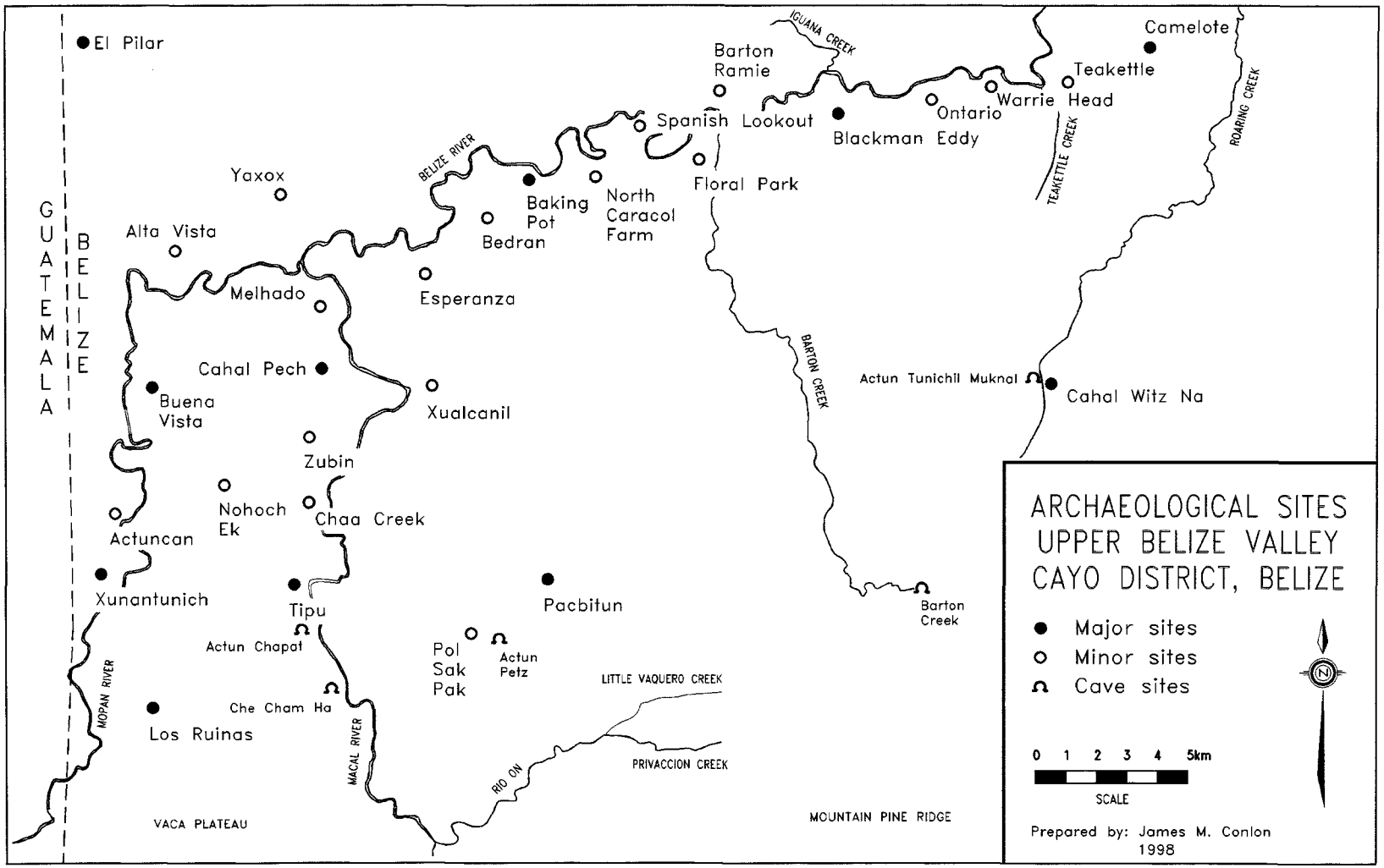
Jennifer J. Ehret
University of Pennsylvania

INTRODUCTION

Mapping the large surface site of Cahal Uitz Na to determine its relationship with cave sites in the Roaring Creek Valley was one of the primary objectives of the 1998 field season of the Western Belize Regional Cave Project (Figure 1). The center was first explored and reported by members of the WBRCP during the course of initial exploration at the cave sites in 1996 (Awe and Helmke 1998). Christopher Helmke prepared the original pace and compass map of the majority of the site core in 1997 that greatly aided in the 1998 survey program. The goals of the 1998 field season reported on here were to record site core mounds, determine the location of the site in relation to the caves, and provide a site description. A concurrent plaza excavation program was run in order to provide a basis for initial chronological assessment of the site and allow for assessing potential associations with the cave material remains (see Ehret and Conlon, this volume). The following are the results of the survey program and some preliminary analysis and observations.

LOCATION

The timetable given for recording the caves and site core of Cahal Uitz Na meant that purposeful (direct) transects needed to be employed. One transect, surveyed by Conlon with a theodolite, ran east from Actun Tunichil Muknal to Cahal Uitz Na. Ehret, using a Brunton and tape, ran one transect south from Cahal Uitz Na to Actun Nakbe, and one other southerly transect from Actun Tunichil Muknal to Actun Uayazbacab. Recording settlement outside of the site core of Cahal Uitz Na consisted of fortuitous events of random encounters along these transects and was limited by visibility of vegetation coverage (Figure 2). West of the Roaring Creek river is predominantly primary forest and easily surveyed. Hence a more visible settlement component is easily recognized than around Cahal Uitz Na. The majority of mounds cluster near the mouth of the Actun Tunichil Muknal on the highest river terrace. East of Roaring Creek river is some primary forest but is predominantly secondary growth, or *wamil*, thus, not easily reconnoitered. Because the primary purpose of the transects was to integrate the site core with the cave sites, they are not considered suitable for estimating settlement density at this time. More stringent transect survey to record settlement needs to be performed before such an analysis can be attempted. However, general reconnaissance presently indicates that a major portion of Cahal Uitz Na's support population was located in the broad alluvial valley approximately 3 kilometers to the north. The potential for recording most of this settlement data has been seriously hampered by large scale modern agricultural use and the recent practice of removing limestone from the fields to avoid plough damage.


El Pilar
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Cahal Pech
Buena Vista
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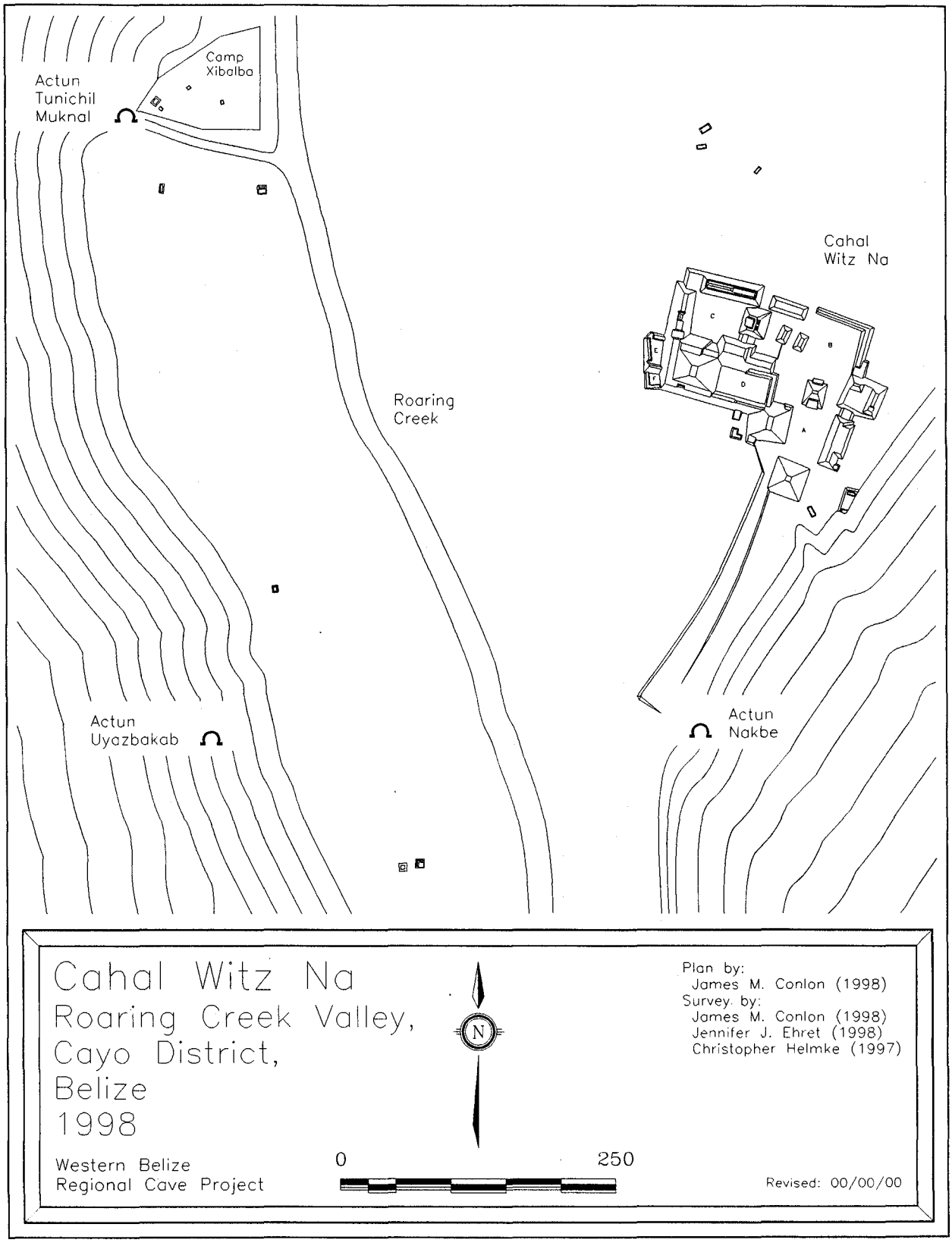
Zubin
Nohoch Ek
Chaa Creek
Actuncan
Xunantunich
Tipu
Actun Chapat
Che Cham Ha
Los Ruinas
MOPAN RIVER
MACAL RIVER
VACA PLATEAU
Pacbitun
Pol Sak Pak
Actun Petz
LITTLE VAQUERO CREEK
PRIVACCION CREEK
RIO ON
MOUNTAIN PINE RIDGE
BELIZE RIVER
Baking Pot
Bedran
North Caracol Farm
Esperanza
Spanish Lookout
Floral Park
Barton Ramie
IGUANA CREEK
Blackman Eddy
Ontario
Warrie Head
Teakettle
Camelote
TEAKETTLE CREEK
ROARING CREEK
BARTON CREEK
Barton Creek
Actun Tunichil Muknal
Cahal Witz Na
ARCHAEOLOGICAL SITES
UPPER BELIZE VALLEY
CAYO DISTRICT, BELIZE
Major sites
Minor sites
Cave sites
0 1 2 3 4 5km
SCALE
Prepared by: James M. Conlon
1998

Figure 1


Actun
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Muknal
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Xibalba
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Cahal
Witz Na
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Nakbe
Cahal Witz Na
Roaring Creek Valley,
Cayo District,
Belize
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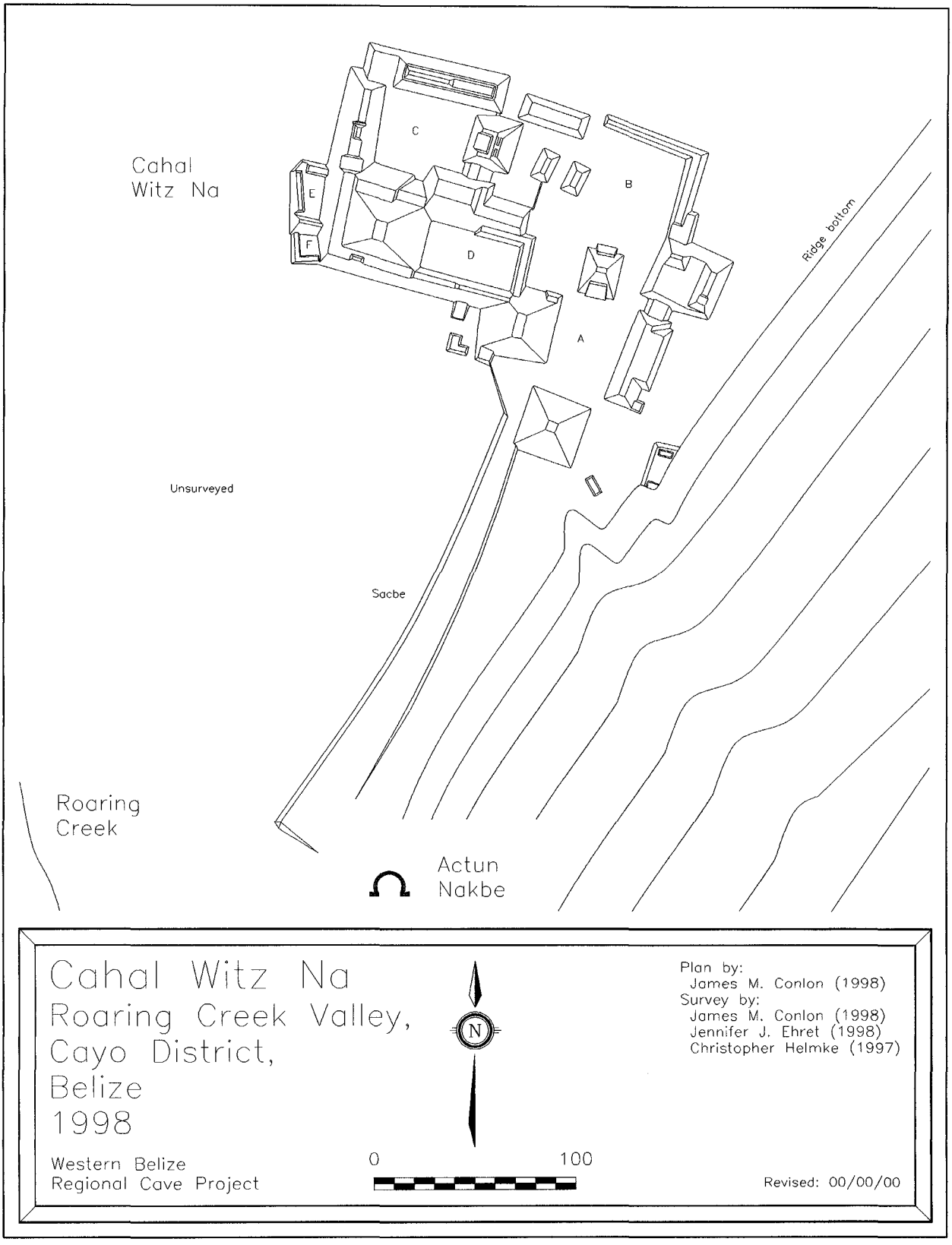
Plan by:
James M. Conlon (1998)
Survey by:
James M. Conlon (1998)
Jennifer J. Ehret (1998)
Christopher Helmke (1997)
Revised: 00/00/00

Figure 2

	Witz Na, Plaza A	Tunichil Muknal	Uayazbacab	Nakbe
Tunichil Muknal	673		565	757
Uayazbacab	605	565		443
Nakbe	287	757	443	

Table 1: Distances from Witz Na core to caves, and between caves (in meters).


Cahal
Witz Na
C
B
E
F
D
A
Ridge bottom
Unsurveyed
Sacbe
Roaring
Creek
Actun
Nakbe
Cahal Witz Na
Roaring Creek Valley,
Cayo District,
Belize
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Plan by:
James M. Conlon (1998)
Survey by:
James M. Conlon (1998)
Jennifer J. Ehret (1998)
Christopher Helmke (1997)
Revised: 00/00/00

Figure 3

In order to better understand the various cave assemblages it was determined that the surface site of Cahal Uitz Na would have been the most logical locale of the ancient inhabitants who utilized the caves. This assumption is based not only upon proximity, but also the similarity in iconography found in Actun Uayazbacab and that of Stela 8 of Cahal Uitz Na. The first goal of the 1998 field season was to incorporate Cahal Uitz Na into the survey with the several caves in the area. Direct line distances from the center of Plaza A of Cahal Uitz Na to the three main nearby caves are provided in Table 1. Actun Nakbe is the closest cave to Cahal Uitz Na and physically integrated with it via a *sacbe* which terminates near its entrance (Figure 3). Strangely, while physically integrated with Cahal Uitz Na, Actun Nakbe is the most inconspicuous of the three caves, lacking both the iconography of Actun Uayazbacab and the rich cultural remians of Actun Tunichil Muknal. Both of the latter caves are located roughly equidistant from Cahal Uitz Na. Together with the site core they form what might be considered a rough representation of quadrilateral symbolism of the four corners of the ancient Maya world, or more cogently, along with Cahal Uitz Na's ball court, the underworld (Jaime Awe, personal communication; see also Ashmore 1991 and Coggins 1980).

SITE DESCRIPTION AND PRELIMINARY ANALYSIS

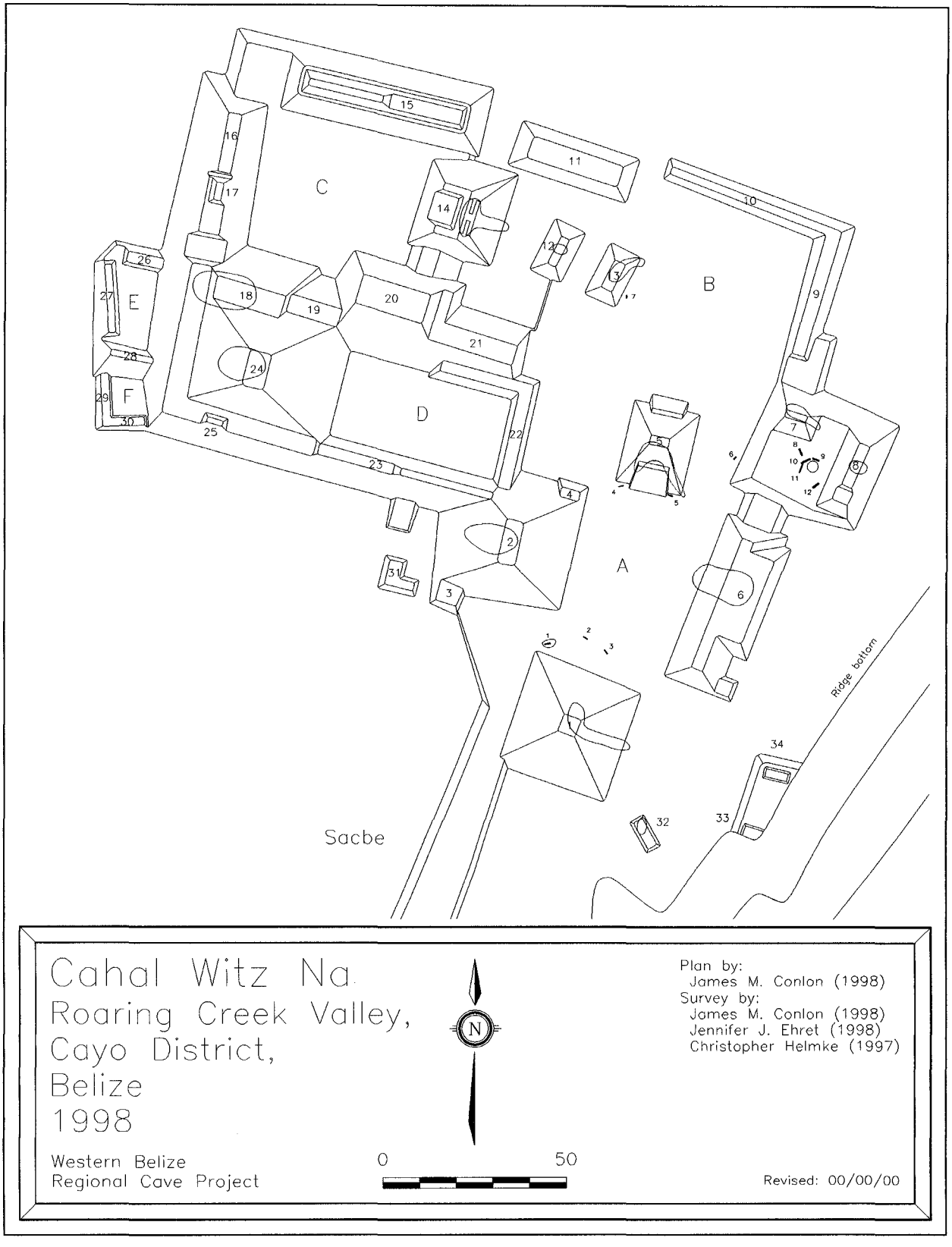
The central core of Cahal Uitz Na is made up of six plazas covering an area of 22,482 square meters. Plaza elevations (Table 2), taken relative to 0.00 meters in Roaring Creek near Actun Tunichil Muknal, suggest Cahal Uitz Na could have been susceptible to seasonal flooding of the river. Plaza C is somewhat protected by its height and Plaza D, being enclosed, was likely protected by the structures defining it. All other Plazas (A, B, E, and F) were most prone to being affected by flooding. A river rise of just under six meters would likely inundate these plazas. However, it is not clear to what degree the arroyo system (unsurveyed) that roughly parallels the Roaring Creek river would have acted to alleviate the civic center from high seasonal floodwaters. As with future settlement survey, a more stringent recording of arroyos would aid to answer this question.

In terms of access, and public or private areas of the civic center, the raw data presented here is relatively ambiguous. Plaza A's public nature is displayed in its accessibility from all four corners, including the sacbe in the southwest. It also possesses some of the largest monumental architecture, as well as five of the twelve recorded stelae at the site (Figure 4), and adjoins Plaza B (sharing Stela 6 with it), the largest plaza at Cahal Uitz Na. Plaza B also must be considered public domain based on its very large areal extent, predominance of low to medium-sized range structures, a monument (Stela 7) and the inclusion of the ball court. Plazas E and F, although small in size, are easily accessible, and along with their "exposure" on the western exterior of the site core, suggest a publicly accessible area. Both Plaza C and D are configured such that access was restricted, and, next to Plaza A, possess some of the largest mounds in the core.

Overall the site core is comprised of thirty designated mounds, some of which are shared between the various plazas, and four other smaller mounds (31 to 34) that, owing to their proximity to the site core, likely played as much a role in defining the core as do the mounds from Plazas E and F (Table 3). Eleven of the thirty mounds in the core are pyramidal (36.67 percent) and 19 are range type mounds (63.33 percent). Comparatively, while accounting for over one-third of the number of structures at Cahal Uitz Na, the pyramidal mounds comprise just under one-quarter (23.75 percent) of the total estimated volume of mounds at the site. Apparently more effort was expended in building

	Plaza	Elevation (relative)	Area	
	A	6.30	1877	
	B	5.71	5076	
	C	7.27	1697	
	D	5.92	1031	**Total**
	E	5.79	199	**Area**
	F	4.95	86	**(P and S)**
Sum	6	35.94	9966	22482
Average		5.99	1661	
STD		0.77	1829	

Table 2: Plaza elevations and area, Cahal Witz Na.


Cahal Witz Na
Roaring Creek Valley,
Cayo District,
Belize
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Plan by:
James M. Conlon (1998)
Survey by:
James M. Conlon (1998)
Jennifer J. Ehret (1998)
Christopher Helmke (1997)
Revised: 00/00/00
Sacbe
Ridge bottom
A
B
C
D
E
F

Figure 4

Structure	Type (P/R)	Elevation (relative)	Height (above plaza)	Long base	Short base	Pyramidal volume	Range volume	Area (basal)
1	P	19.85	13.55	32.30	31.44	688		1016
2	P	20.04	13.74	38.82	35.36	943		1373
3	P	8.17	1.87	9.48	7.53	7		71
4	P	8.05	1.75	7.87	5.51	4		43
5	P	12.61	6.31	24.23	17.97	137		435
6	R	10.96	4.66	46.25	20.06		3243	928
7	P	14.14	4.54	12.61	10.33	30		130
8	R	12.94	3.34	25.46	9.86		629	251
9	R	7.02	1.31	35.66	9.34		327	333
10	R	6.52	0.81	49.51	6.51		196	322
11	R	8.53	2.82	33.29	12.47		878	415
12	R	8.49	2.78	15.48	9.30		300	144
13	R	8.35	2.64	15.72	8.72		271	137
14	P	12.80	5.53	26.95	23.51	175		634
15	R	12.94	5.67	55.33	19.09		4492	1056
16	R	10.91	3.64	45.03	20.44		2513	920
17	R	13.29	6.02	7.02	4.47		142	31
18	P	14.47	7.20	20.47	20.12	148		412
19	P	11.92	4.65	15.80	15.61	57		247
20	P	12.50	5.23	30.24	26.28	208		795
21	R	8.97	3.05	24.80	17.33		983	430
22	R	8.97	3.05	31.11	6.09		433	189
23	R	9.72	3.80	46.99	11.51		1541	541
24	P	15.47	9.55	43.05	28.02	576		1206
25	R	7.75	1.00	6.91	3.42		18	24
26	R	6.27	0.48	11.52	5.47		23	63
27	R	6.19	0.40	20.57	6.69		41	138
28	R	7.78	1.99	16.17	8.49		205	137
29	R	5.38	0.43	13.09	4.39		19	57
30	R	5.64	0.69	10.24	3.59		19	37
Sum		316.64	122.50	771.97	408.92	2973	16272	12516
Average		10.55	4.08	25.73	13.63	270	856	417
STD		3.83	3.43	14.29	8.84	318	1250	394

Table 3: Areal and volumetric results for structures at Cahal Witz Na.

	Cahal Witz Na
Blackman Eddy	11.46
Camelote	11.67
Pacbitun	17.71
Baking Pot	18.54
Cahal Pech	23.96
Tipu	25.63
Xunantunich	31.88
Caledonia	48.00
Mountain Cow	56.44
Caracol	64.44

Tabel 4: Distances to major centers from Cahal Witz Na (kilometers

volumetrically large range structures at Cahal Uitz Na. The extent of looting activity cannot be fully appreciated from the plan presented here (see Figure 4). Though looting appears to be restricted to a relatively small number of mounds (10 of 30, or 33.33 percent) most of these of have been gutted intensively so that only their shell remains. As with the loss of data in the fields to the north of Cahal Uitz Na it is apparent there has been a great loss of potential data from the core itself.

OBSERVATIONS

While the main goal of the 1998 field season was to incorporate Cahal Uitz Na into the cave sites locale it would be neglectful not to include a brief discussion of some initial observations regarding the broader context of the site. In terms of overall location its nearest neighbors are Blackman Eddy and Camalote of the Belize Valley (Table 4). Pacbitun and Baking Pot represent sites in the next distant potential interaction sphere. All of these sites should be used in comparing future settlement and excavation results from Cahal Uitz Na. While sites further west and south do not appear to be of great influence, wider reconnaissance should be undertaken, particularly in the area to the south, to determine what link, if any, there may have been between the Belize Valley, Cahal Uitz Na, and Caracol. Investigations in adjacent valleys to the southeast (Caves Branch area) would also be worthwhile given similarities in topography, ecology, and the presence of numerous caves in that area.

CONCLUSION

The 1998 field season was successful in incorporating Cahal Uitz Na with the cave sites. Future research needs to expand the settlement survey in the immediate environs and increase excavation data to more accurately assess both Cahal Uitz Na's role in the cave assemblages, and regionally with the Belize Valley to the northwest, the Caves Branch Valley to the south east and the Mountain Pine Ridge to the south.

Acknowledgments

We would like to thank Commissioner John Morris for granting the research permit for Cahal Uitz Na. Our survey was facilitated by various types of contributions from Cameron Griffith, Christopher Helmke, Gyles Iannone, and John Weeks. The Cahal Uitz Na crew, Valentin Cu, Ventura Chi, Alfredo Puc, and Feliz Uck helped to make our efforts more effortless and Jose Mai provided us with exceptional fuel to complete our task. Finally, we would like to thank Jaime Awe for developing and managing the project and seeing it through yet another year.

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SALVAGE EXCAVATIONS OF THE BALLCOURT AT CAHAL UITZ NA

Josalyn Ferguson
State University of New York at Albany

INTRODUCTION

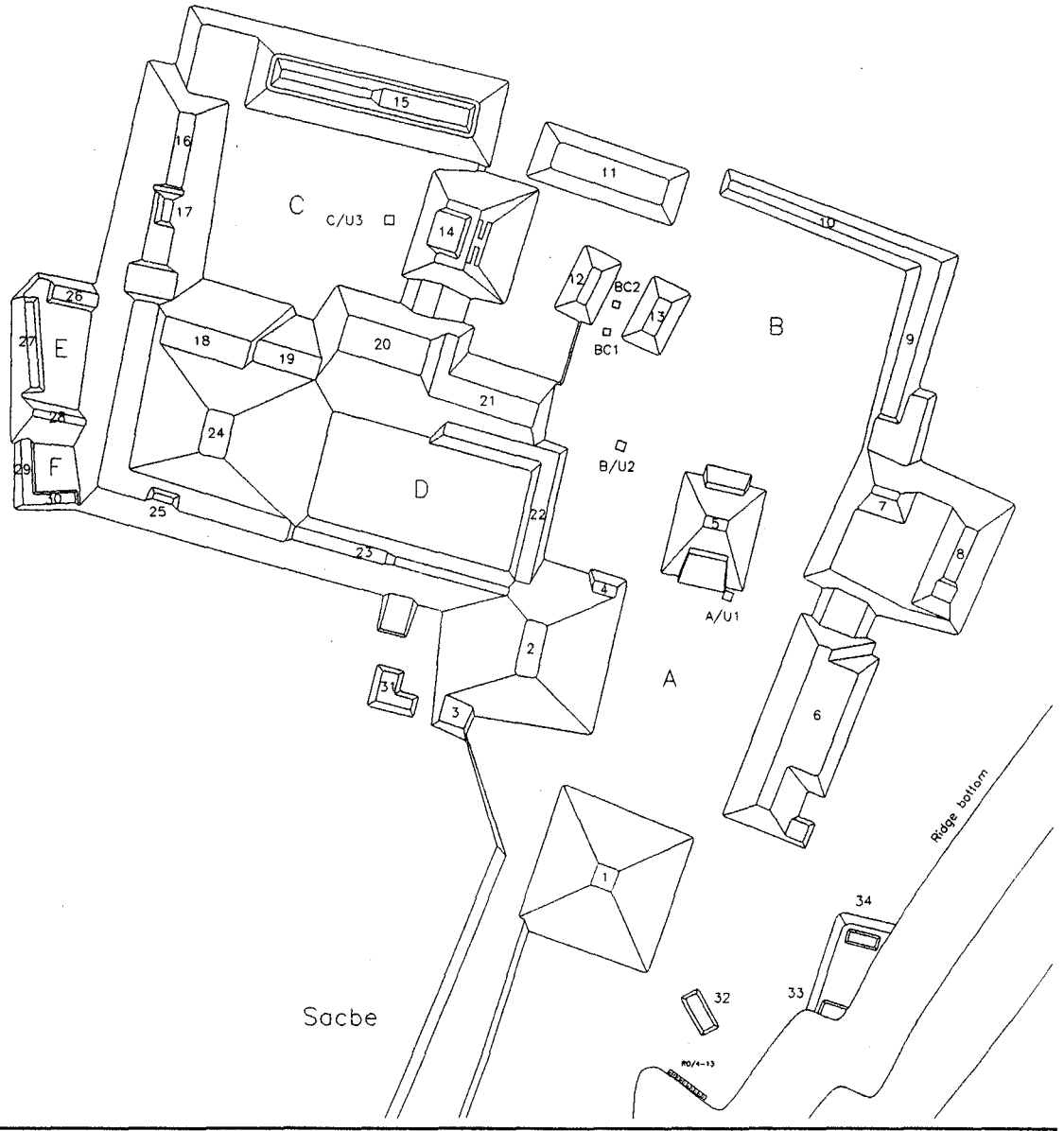
One of the objectives of the WBRCP is to determine the temporal and spatial relationship between surface settlements and subterranean sites in the Roaring Creek Valley. In an effort to address this goal, investigations during the 1998 field season included the mapping of Cahal Uitz Na and the excavation of several test units at the site. Because of extensive looting of the center, other excavations served as salvage operations designed to recover information from severely damaged architecture. This paper reports on operations which focused on the ballcourt.

THE BALLCOURT

The Cahal Uitz Na ballcourt is located within the site core, on the north side of Plaza 2 (Figure 1). The identification of a ballcourt at the site was based on such characteristic features as the association of two opposing range structures of similar size and height (Structures 7 and 8), which border a central playing alley; its location within the site core proper; as well as the north-south orientation of the architecture (Clune 1963:90). There are no end structures associated with the ballcourt, however, a one course stone wall leading south from the centre of Structure 7 may represent the western limit of an "I" shaped playing alley. Similar walls, however, were not identified at the north end of Structure 7, or at all with Structure 8.

Since both Structures 7 and 8 have been heavily damaged by looting, much of the ballcourts structural composition has been disturbed if not destroyed. Additionally, much of the looter's backdirt was "dumped" in the alley. Estimates of alley width and length, and structure length are therefore not necessarily accurate. Confidence in estimates for structure length (13.5 m)and alley width (5.7-6 m) are, however, believed to be fairly precise, based on the identification of exposed architectural features at the base and ends of the structures, particularly that of Structure 8. The orientation (magnetic) of the structure is 7 degrees east of north, based on the alignment of the bench face wall exposed through excavations and that exposed at surface level at the southern end of Structure 8.

To the west of Structure 7 is an additional mound (Structure 9) which is separated from Structure 7 by an open space. This additional structure and associated "alley" may indicate that the complex was in fact a double ballcourt. Structure 9 is much larger than the other two in terms of height and mass, and the "alleyway" in between Structures 7 and 9 is much wider than that between Structures 7 and 8. Jim Conlon (WBRCP surveyor) believes that Structure 9 may also have been vaulted. These differences do not necessarily negate this hypothesis, as other ballcourt complexes in the Belize Valley region have structures of varying sizes, heights and designs, and structures which are adjoined to other structures (i.e., X-ual-canil (Ferguson 1997), Baking Pot (Group II ballcourt) (Ferguson 1999); and



Cahal Witz Na
Roaring Creek Valley, Cayo District, Belize
1998

Western Belize
Regional Cave Project

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Plan by:
James M. Conlon (1998)
Survey by:
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Jennifer J. Ehret (1998)
Christopher Helmke (1997)

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Xunantunich (Graham n.d.)). Until further investigations confirm such a suggestion, the possibility of the Cahal Uitz Na ballcourt being a double court remains speculatory. Thus, the ballcourt referred to herein refers to that encompassed by Structures 7 and 8 and their central playing alley.

METHODOLOGY

Excavations within the playing alley of the ballcourt were undertaken as sampling or test units designed to recover materials for dating the architecture, to determine site chronology, and to search for ballcourt markers. The excavations were conducted over a ten day period.

The central placement of the units in the playing alley was determined by assessing the perceived and, where visible, actual extent of Structure 8's architecture. Unit BC-2 was located in the centre of the alley, along what was determined to have been the primary axis of the complex. Unit BC-1 was located at the south end of the playing alley, along a magnetic north-south orientation (see Figure 1). Both Units measured 1.5 x 1.5 meter in size. Matrices were excavated with the aid of picks, trowels and shovels. Both units were excavated by cultural levels. Depth measurements were taken at the beginning and end of each level, and of features and exposed architecture. All features and architectural components within the excavation units were photographed and mapped. Datums were established for both excavation units. D1 was associated with Unit BC-1, and was offset 21 cm north of the unit's north wall (NNE stake), and 21 cm above ground level. D2 was located 22 cm east of the unit's east wall at it's mid point, 21 cm above ground surface. D1 was located 9 cm above D2.

EXCAVATION RESULTS

Unit BC-1

Level 1 consisted of the humic layer, which was generally comprised of littermat, loose organic brown dirt, roots, and a few small rocks (5 to 10 cm in size). Because the location of the unit was not in direct proximity to the looter's excavations, the small rocks were determined to be structural deterioration rather than looters backdirt. Despite the fact that this level was a natural one and thus varied in depth from .5 cm to 5.5 cm, artifacts collected from this level included 39 eroded ceramic sherds, 3 pieces of slate (potentially modified), 1 jute shell (*Pachychilus indiorum*), a mano fragment and an obsidian blade fragment. (It should be noted that all jute shells collected from the ballcourt excavations were of the *Pachychilus indiorum* species).

Level 2 consisted of a compact mix of organic brown dirt and small rocks, intertwined with roots. Due to the nature of the small rocks, it was virtually impossible to distinguish structural collapse or upheaval from ballast-type fill associated with flooring episodes. The discovery of a remnant plaster surface (level 3, floor 1) in the southeast quadrant of the unit marked the termination of level 2, and the beginning of level 3. Level 2 measured an average depth of 31.5 cm. Ninety-three eroded ceramic sherds, 15 pieces of slate, 7 jute shells and a small scattering of unidentifiable faunal remains, 1 quartz crystal fragment, 1 speleothem, 1 obsidian blade fragment and 1 spherical limestone object were collected from level 2. Because floor 1 was not detected throughout the unit, artifacts from other sections of the unit were recorded as deriving from levels 2/3. From the deposits excavated as level 2/3, 46 ceramic sherds, a few unidentifiable faunal remains and 3 jute shells were recovered.

As noted, level 3 consisted of a remnant plaster surface and associated ballast fill. Roots

continued to penetrate through this level. While this surface was not continuous throughout the unit, it was identified at 51 cm dbd (depth below datum), in the southeast quadrant of the unit. Due to the deteriorated nature of the plaster surface, only a small portion of the level was securely excavated as level 3, and thus only a handful of artifacts (7 ceramic sherds) were recovered. This level measured approximately 9 cm thick.

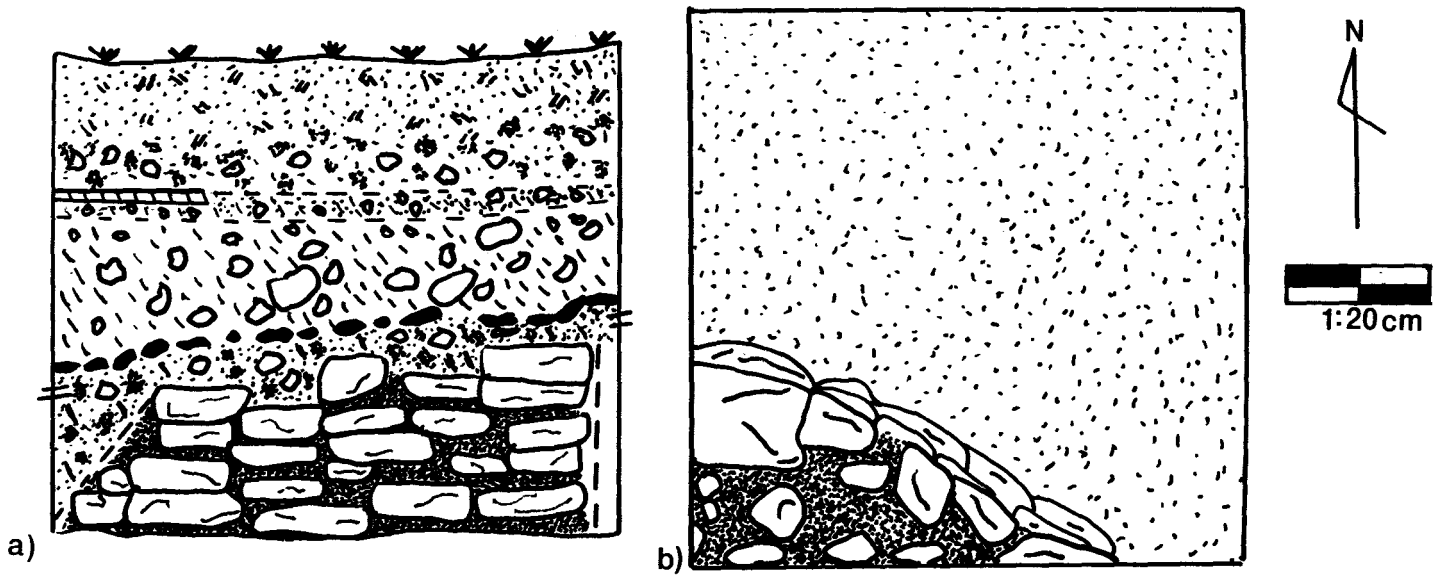
A second poorly preserved plaster surface and associated ballast, dirt and limestone fill (level 4, floor 2) was identified at an average depth of 61 cm dbd. Like floor 1, the plaster surface of floor 2 was not detected throughout the entire unit, but was fragmentary and thin where visible. This level primarily consisted of associated fill. A ceramic cache of one large reddish-brown olla sherd (98-BC/F2) was encountered in the southeast quadrant of the unit, at a depth of 75.5 cm dbd. The sherd was broken in situ into 38 pieces, and was restricted to an area measuring approximately 30 x 19 cm. Interestingly, 7 fragmented and unidentified faunal remains were located beneath the sherd. While the dirt and stone fill continued for another 7 to 11 centimetres, a layer of river cobbles was encountered across the unit at a depth between 82 and 86 cm dbd. Artifacts collected from Level 4 include 393 ceramic sherds, 1 granite sphere, 2 pieces of slate, 38 jute shells, 1 pomacea shell, 1 medial section of an obsidian blade, and the proximal end of an obsidian blade. The majority of sherds recovered from the plaster surfaces associated with the ballcourt date to the Late Classic period.

Approximately 3 to 7 cm below the river cobble layer, a five course, cut stone wall (level 5) was first identified at a depth of 89 cm dbd (see Figure 2b for top plan of early structure). The wall ran diagonally across the southwest quadrant of the unit and represents part of a structure that predates the ballcourt. The ceramics collected from the fill below the river cobble lens, and around the wall date to the Late Preclassic - Early Classic periods, however, no sherds were recovered from within the confines of the walls. The wall was found to be sitting on the original natural ground surface. The matrix below the wall consisted of a grainy, orange-brown soil, and was void of cultural materials. Excavations were terminated upon identification of sterile soil, at an average depth of 143 cm dbd (see Figure 2a for stratigraphic profile of excavation unit).

Unit BC-2

The matrix of level one consisted primarily of humus, which was comprised of littermat and roots as well as small rocks (5 to 15 cm in size) from looter's backdirt, structural collapse and natural deterioration of the playing alley itself. Only ten very weathered sherds and several pieces of unmodified slate were recovered from level one. Level one was terminated upon detection of several large boulders of limestone and river cobble, intermixed with a dark organic soil, pebbles and ballast-size rocks (level 2), believed to have been debris from looting episodes, and natural structural collapse. The average depth of level one was 13 cm.

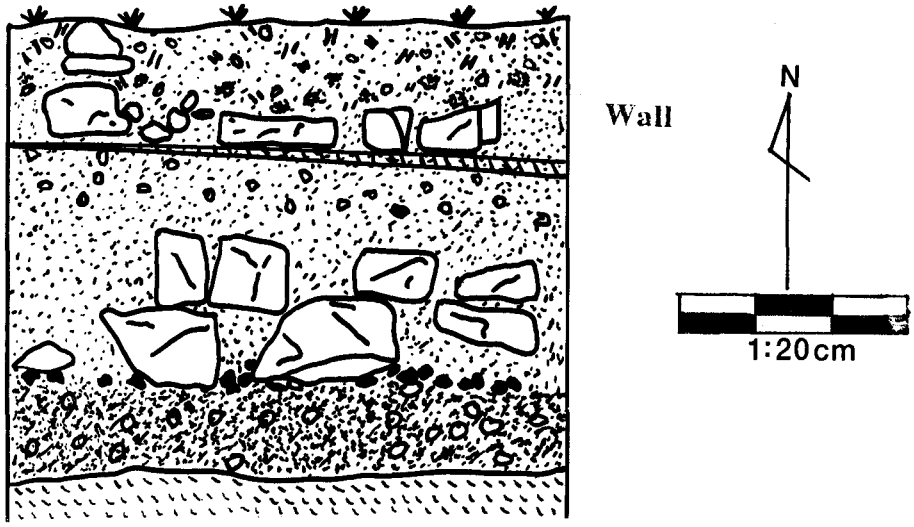
Level 2 was excavated down to a depth of 57-58 cm dbd along the east wall of the unit, where a one-course, north-south, cut-stone wall was unearthed. The combination of structural collapse and bioturbation, and the added destruction caused by looters made the stratigraphy in this area difficult to ascertain. Distinguishing the disturbed matrices from those associated with the fill of the terminal playing alley surface was impossible, and thus Floor 1 (level 3) observed in Unit BC-1 was undetectable in Unit BC-2. Twenty-five weathered ceramic sherds, some daub and a quartz crystal were recovered from this level.



Rock Cut Stone Humus Layer Stone/Dirt Fill Dirt Fill River Cobble Collapse

Ballast/Dirt Fill Plaster Surface Poorly Preserved Plaster Unit Wall Surface

Figure 2. a) Stratagrahic Profile of Unit BC-1; b) Top Plan of Unit BC-1, Level 4, Illustrating Early Structure.



Unit Wall ——— Ground Surface

Ceramic Cache Plaster Surface Crude Cut Stone Dirt/Core Fill

Stone/Dirt Fill Ballast Fill Humus Layer Sterile Soil

Figure 3. Stratagraphic Profile of Unit BC-2.

The one-course limestone "wall" associated with level 4 of Unit BC-2 extended westward into the unit for approximately 30 cm. Evidence of a poorly preserved plaster surface was first detected by the presence of pebbles, flecks of plaster and associated ballast fill. A more substantial portion of the plaster surface (between 4 and 10 cm thick) was detected at the base of, and directly under the wall in the southern end of the unit, at a depth of approximately 66 cm dbd. This plaster surface is the same as that identified as floor 2 in Unit BC-1. A matrix sample of floor 2 was taken.

Below the ballast fill at a depth between 75 and 89 cm dbd, a thick layer of large core fill, comprised of large river cobbles and limestone boulders intermixed with tan-coloured dirt was encountered. A cache (98-BC/F1) of ceramics was unearthed directly below and in between the deepest boulders of the core fill. The cache of 977 ceramic sherds extended over the entire unit at a depth of approximately 106 cm dbd. Many of the specimens were large diagnostic pieces that fit together. It is likely that upon more indepth analysis and reconstruction, many of the sherds will in fact be found to represent partial or virtually complete vessels which were ritually smashed, or "killed", perhaps in association with the dedication of the ballcourt. Also included amongst the cached ceramics were 64 jute shells, 2 tertiary flakes, and one medial section of an obsidian blade. A total of 1067 ceramic sherds (including those from the cache) were recovered from level 4.

Ceramics from this level generally date to the Late Preclassic/Early Classic Periods.
The matrix changed below the core fill to an orange dirt and small rock fill (level 5) at an average depth of 115 cm dbd and continued to a depth of approximately 143 cm dbd. A total of 137 ceramic sherds, 3 tertiary lithic flakes, 1 deer antler, 3 unidentifiable faunal bone fragments, and 25 jute shells were recovered before sterile soil was reached. This fill coincide with that found at the same level with the structure exposed in Unit BC-1. Excavations continued for another 10-15 cm in order to confirm sterile soil was reached (see Figure 3 for stratigraphic profile of excavation unit).

CONCLUSIONS

Test excavations in the playing alley of the Cahal Uitz Na ballcourt revealed three phases of construction at this location. The earliest phase of construction is represented by a structure with cut-stone walls that probably dates to the Terminal Late Preclassic - Early Classic period. Unfortunately, the minimal amount of architecture exposed within the excavation unit inhibits an accurate description of the structure's form or function but it is apparent that it predates the ballcourt and had no association with the latter architecture. Future research should investigate this structure because it likely is associated with the initial occupation of the site.

The data recovered by the excavation in the playing suggest that the earliest phase of the ballcourt was erected during the Early Classic period. This date is particularly suggested by the ceramics collected from the fill surrounding the earlier structure and those associated with the central dedicatory ceramic cache. While it is unknown at this time whether additional modifications were made to the structures themselves, the playing alley was resurfaced in the Late Classic period. The precise dating of the ballcourt structures is also difficult to ascertain without actually testing the flanking structures. Accurate dating of the earlier structure is equally tenuous because no ceramic data was actually recovered from within the architecture.

A bearing on the "wall" exposed in Unit BC-2 was taken and found to be approximately 7

degrees east of north. The exposed wall of Structure 8, used to assess the perimeters of Structure 8 and the strategic placement of the units within the alley, runs along the same bearing. While a slight elevational difference does exist, it appears to be the result of the destruction of the bench face's upper course in the structure's mid area, and/or slumping of the architecture over time. This "wall" appears to be the vertical bench face of Structure 8, as the rocks behind and within the structure angle upwards towards the east, indicating that the bench top was sloped. An additional exposed "wall" was identified farther up the structure and appears to be this structure's playing wall. This indicated that the bench top would have been approximately 1 metre wide (on a slope). Amongst the structural debris visible within the looters backdirt in the centre of the structure are veneer type stones typical of those used as backing masonry in ballcourts elsewhere (i.e., the eastern ballcourt at Cahal Pech (Ferguson et al. 1996), the north ballcourt at Baking Pot (Ferguson 1998)). The playing wall appears to have been approximately 2.5 metres high and seems to have met with an upper apron (vertical wall) at the top of the eastern structure. Aprons are not a typical construction feature of ballcourts in the region. Both the playing wall and apron are not entirely visible in situ across the mound due to the looters backdirt.

Future excavation of the range structures is required to confirm the architectural design of the complex, as well as to confirm the precise temporal designation of the complex. Excavations did reveal that the occupational history of the site extends from at least the Late Preclassic to the Terminal Classic, and that the ballcourt complex may have been an integral feature of the site from early in its history.

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PLAZA EXCAVATIONS AT CAHAL UITZ NA, CAYO DISTRICT, BELIZE: A PRELIMINARY REPORT

Jennifer J. Ehret
Department of Anthropology
University of Pennsylvania

James M. Conlon
Institute of Archaeology
University College London

INTRODUCTION

To complement investigations at four nearby caves, the Western Belize Regional Caves Project undertook test pit excavations at the primary Roaring Creek Valley center of Cahal Uitz Na (Fig. 1). The goals of the excavations were: 1) to gain a preliminary understanding of the chronological sequence of the site, and 2) to look for similarities in ceramic assemblages between site and caves. The hypothesis was that the center of Cahal Uitz Na may have been the social and political focus of the local region in antiquity, and that the history of the site's occupation could coincide temporally with the ritual use of the nearby caves (Tunichil Muknal, Uayazba Kab, Nakbe, and Yaxteel Ahau) (see Awe 1998; Awe and Helmke 1998).

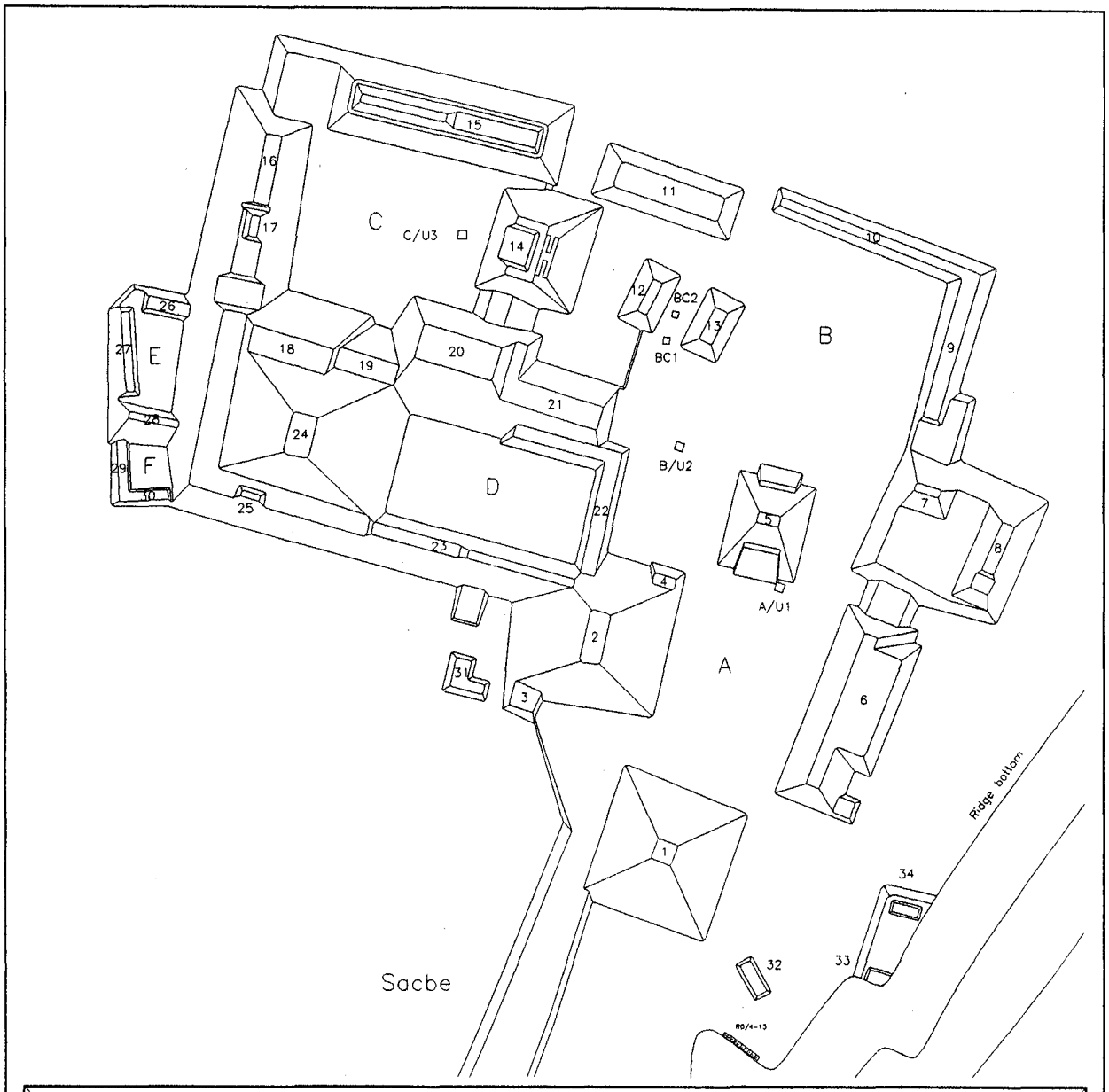
In July of 1998, a series of testpits were excavated into the platform areas of three of the defined plaza groupings at Cahal Uitz Na. These test units were complemented by a surface collection of ceramics beneath a rock overhang located southeast of Structure 32 (see Fig. 1). The ceramics collected from these investigation were analyzed by the senior author using a method created by Lisa LeCount for the Xunantunich Settlement Survey in 1993 and modified by Ehret in 1994 and 1995 (Ashmore et al. 1994; Ehret 1995; Neff et al. 1995).

EXCAVATIONS:

Unit 1, Plaza A

Unit 1, a 2 x 2m testpit, was excavated into the fill of Plaza A directly south of Structure 5, abutting Stela 5 (Figs. 2, 3, and 4). Stela 5 is a 2m high plain stela with a biconical hole through its centre. At present, this decorative method is unique in the region, and the functional and/or symbolic meaning of the hole is unknown. The goals of placing the unit in front of Stela 5 were: 1) to define the construction episodes of the plaza, 2) to recover temporally diagnostic ceramics and, 3) to search for a potential stela cache to determine erection date.

Level 1 began at surface and ended at the terminal plaza floor (hereafter abbreviated TPF). Strata encountered were an artifactually sterile humus level (dark brown to black) and a medium brown loam. Both strata contained stone fill or tumble. During excavation, a profile of a central stair or ramp became visible in the western baulk of the unit (see Figs. 3 and 4). The feature appears to rest upon the



Cahal Witz Na
Roaring Creek Valley, Cayo District, Belize
1998

Western Belize
Regional Cave Project

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Plan by:
James M. Conlon (1998)
Survey by:
James M. Conlon (1998)
Jennifer J. Ehret (1998)
Christopher Helmke (1997)

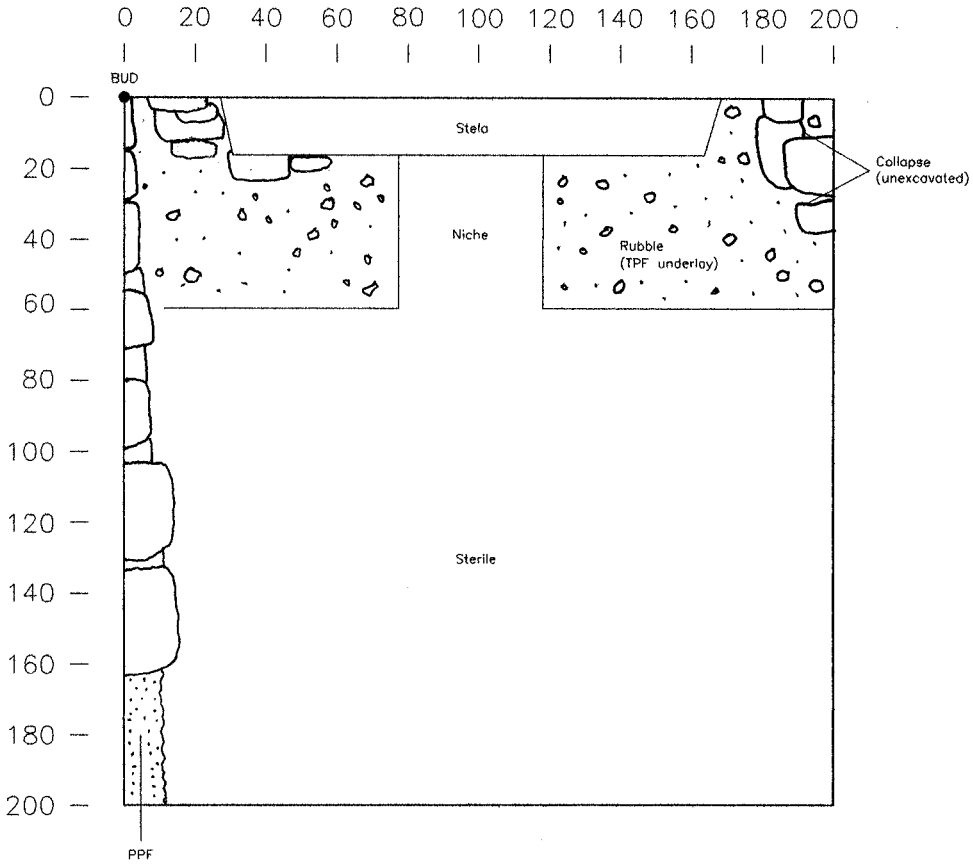
Revised: 00/00/00

Unit A/U1, Plaza A
Cahal Witz Na
1998

Western Belize
Regional Cave Project

0 100cm

Plan by:
James Conlon
Jennifer Ehret
Drawn by:
James Conlon
Jennifer Ehret



Unit A/U1, Plaza A
Cahal Witz Na
1998

Western Belize
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0 100cm

Plan by:
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Drawn by:
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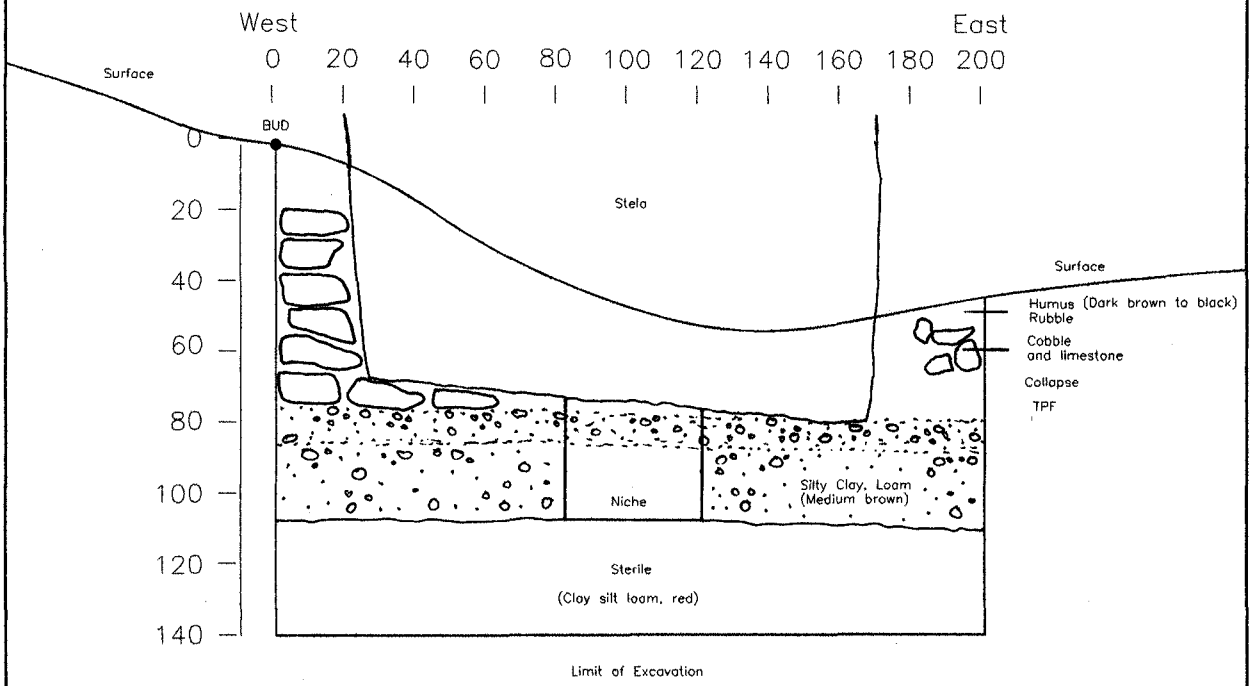


TPF as indicated by a deteriorated plaster surface preserved by the collapse of the feature. Over a dozen collapsed limestone blocks from the feature add to the confusion of its designation as a stair. It is possible that the architecture may have been more ramp or platform-like in its original state. Excavation continued until the TPF and the butt of Stela 5 were visible. The only artifacts recovered from this level were two eroded calcined sherds and no temporal designation could be made.

Level 2 descends below the TPF and comprises the fill below the plaza floor. The stratum was a medium brown silty clay loam with small to medium ballast inclusions. In order not to undermine Stela 5, a 0.6m baulk remained largely unexcavated below its apparent base. A narrow 0.5m niche was excavated up to the center of the stela base to determine if this was indeed the base of the stela, and if any sub-stela cache was present. No cache was encountered. Between the TPF and the stair/ramp feature a 0.007 - 0.01m lense of dense medium ballast was encountered. The plaster under this lense is interpreted as the penultimate plaza floor (hereafter abbreviated PPF). Although only recovered in a small area, this plaza floor was better preserved than the TPF.

In Level 2, a number of diagnostic ceramic types were identified. These include what appears to be Reforma Incised- Mucnal Variety, and specimens of Chan Pond Unslipped, Dos Arroyos Orange-Polychrome- Variety unspecified (Gifford 1976: 176-177), and Yaha Creek Cream (Gifford 1976: 272). One medial flange and 2 indistinguishable flanges were also recovered. These types and modes are diagnostic of the Middle Preclassic, Protoclassic, Early Classic, and Late Classic periods. This places the construction of the terminal plaza in the Late Classic. Unfortunately, because the PPF was only present in a small area of the excavation unit, it was not recognized as a distinct floor until the section profile was drawn following completion of the unit. For this reason it was excavated in mixed context with the fill of the TPF, and it is unknown whether construction of the PPF predates the Late Classic.

Level 3 was an artifactually sterile red clay loam which is presumed to represent the original ground surface-- although it is possible that earlier deposits could have been covered by long periods of seasonal flooding. No artifacts were recovered in Level 3.

Level 4 was excavated an additional 0.25m into the same stratum as level 3 in order to confirm that this stratum represented a pre-architectural level. Again no artifacts were encountered.

Unit 2, Plaza B

Unit 2, a 2 x 2m testpit, was excavated in the center of Plaza B (Figs. 5 and 6), between Structures 22 and 5. The goal of excavation was to ascertain the plaza's construction history and temporal development.

Level 1 was excavated from surface to the TPF. The first 0.2m was humus and medium-size ballast. Beneath this the TPF was encountered. The floor was recognized by the recovery of small ballast fill mixed with flecks of deteriorated plaster. No temporally diagnostic ceramics were recovered.

Level 2 produced a high density of ceramics and was excavated from the TPF to the PPF (ca. 0.1m beneath the TPF). The recovered ceramic types include: Stumped Creek Striated (Gifford 1976: 123-124), Chan Pond Unslipped, Gavilan black-on-orange (Gifford 1976: 140), Dos Arroyos Polychrome- Dos Arroyos Variety, Lucha Incised, a possible Pucte Brown- Variety unspecified, Zibal

Unslipped, Tu-Tu Camp Striated, and Cayo Unslipped. As well, 3 medial flanges, 8 basal flanges, and 16 indistinguishable flanges were recovered. These types and modes are diagnostic of the Protoclassic, Early Classic, and Late Classic (both Tiger Run and Spanish Lookout phases). This places the construction of the terminal platform in the Late Classic. Two fragments of flowstone (Special Find #s 3 and 5) were also recovered from this level.

Level 3 was begun following the recognition of the PPF. This level is the ballast fill for the PPF, and is a medium brown silty clay loam. Excavation recovered ceramic types that possibly included Hillbank Red, and Sierra Red, Soccotz Striated, and Dos Arroyos Orange Polychrome. As well, 1 basal flange and 5 indistinguishable flanges were recovered. These types and modes are diagnostic of the Late Preclassic, and Early Classic. This places the construction of the PPF firmly in the Early Classic period. Several obsidian blade fragments were also recovered. Level 3 terminated when an earlier floor (hereafter abbreviated PF2) was encountered.

Midway between PPF and PF2, a sherd cluster (SC1-A & SC1-B) of 20 flanges belonging to either the Minanha Red or Dos Arroyos type were recovered. This concentration of a single ceramic form suggests that the fragments may pertain to a whole or partial vessel that was cached in the fill during construction of the PPF in the Early Classic. A fragment of a speleothem was also recovered (Special Find # 13). As with the flowstone in the previous level, the speleothem originated from the interior of a cave. In both cases they may have been purposely removed from a cave for deposition at the site.

At the same level as the basal flanged pottery, another sherd cluster (SC2) was recovered in the southern baulk of the unit. This special collection included body sherds from the Dos Arroyos type, and may represent fragments of the same vessel(s).

Level 4 was excavated into the silty clay loam fill of the PF2 until core fill was encountered ca 0.05m below PF2. There were no artifacts recovered from Level 4. The core fill extended down for 0.23m where it terminated at the same red alluvial clay strata encountered in Unit 1.

Level 5 was excavated into the alluvial clay to see if any cultural material could be recovered. The stratum was artifactually sterile.

All three floors in Plaza B were badly deteriorated, and represented by a thin layer of ballast capped by flecks of plaster. The medium core fill beneath the PF2 was not encountered in Unit 1, but it appears that the earliest construction in Unit 2 predates that of Unit 1. The earliest plaza floor (PF2) was likely constructed during the Early Classic or possibly earlier, but the absence of cultural materials in the floor fill makes dating of this surface impossible at this time.

Unit 3, Plaza C

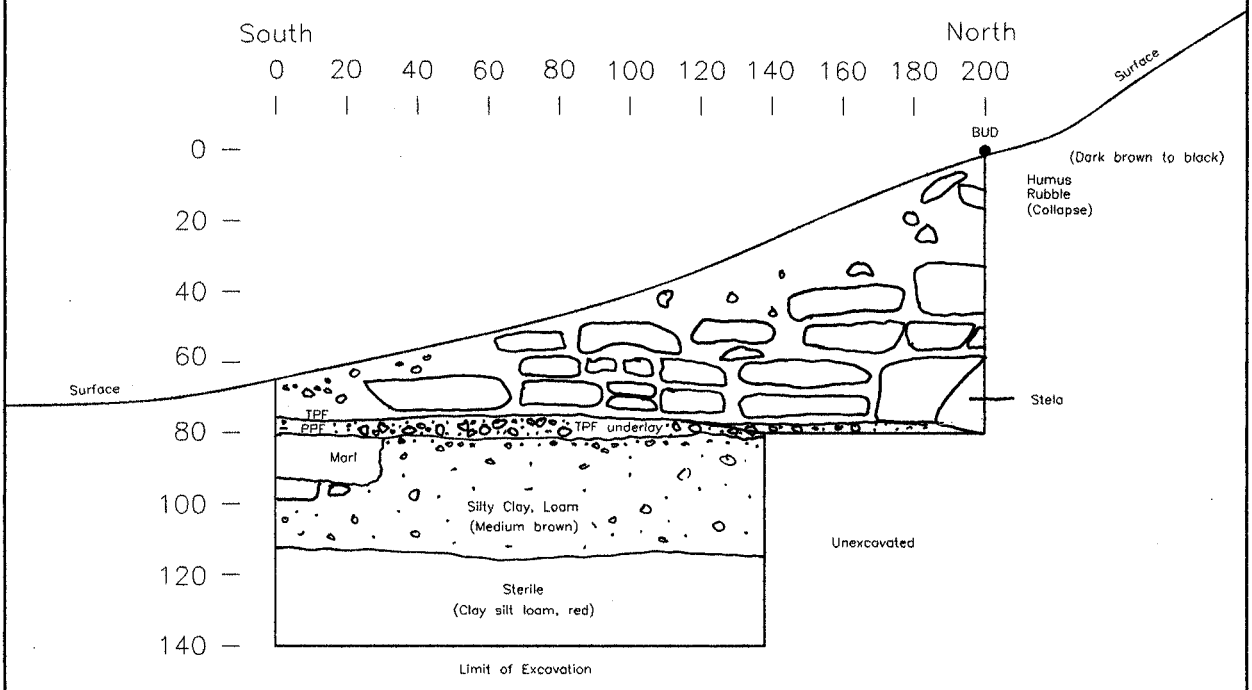
Unit 3, a 2 x 2 m testpit, was excavated into the platform fill of the eastern side of Plaza C near the base of Structure 14 (Fig. 7). The goal of this test unit was to recover dateable ceramics for determining the construction sequence of the plaza. A surface collection produced a single eroded sherd, and a fragment of a honey-brown chert laurel-leaf point with a white patina that was located in

Unit A/U1, Plaza A
Cahal Witz Na
1998

Western Belize
Regional Cave Project

Plan by:
James Conlon
Jennifer Ehret
Drawn by:
James Conlon
Jennifer Ehret

0 100cm

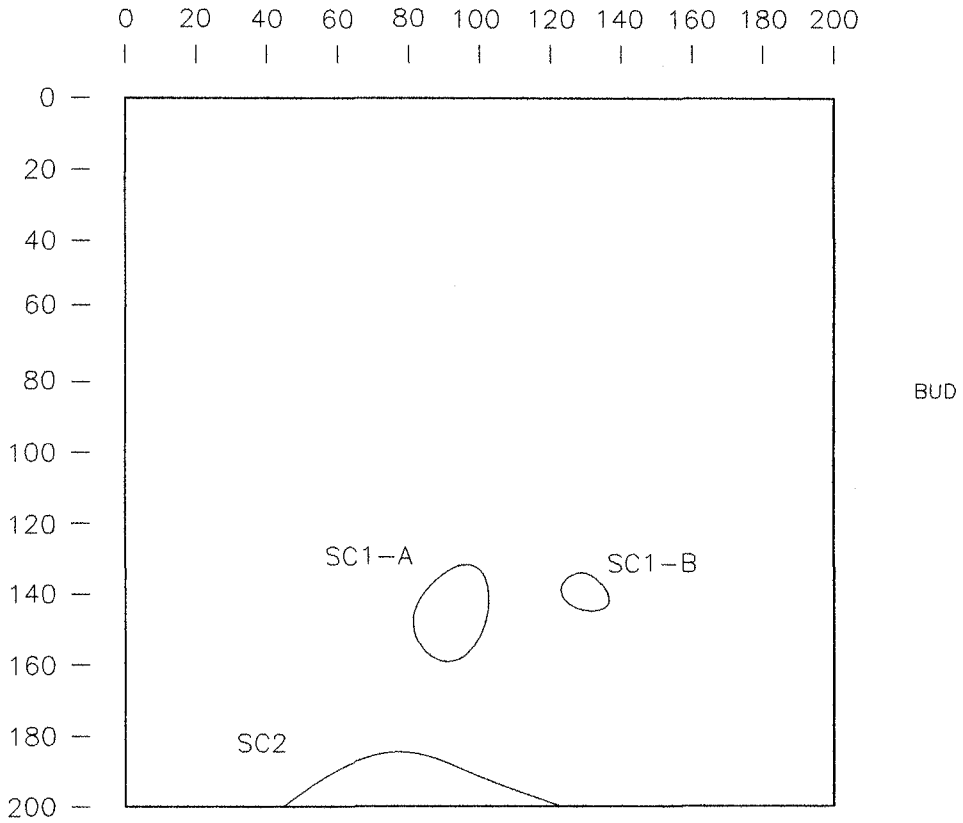


Unit B/U2, Plaza B
Cahal Witz Na
1998

Western Belize
Regional Cave Project

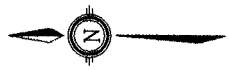
0 100cm

Plan by:
James Conlon
Jennifer Ehret
Drawn by:
James Conlon
Jennifer Ehret

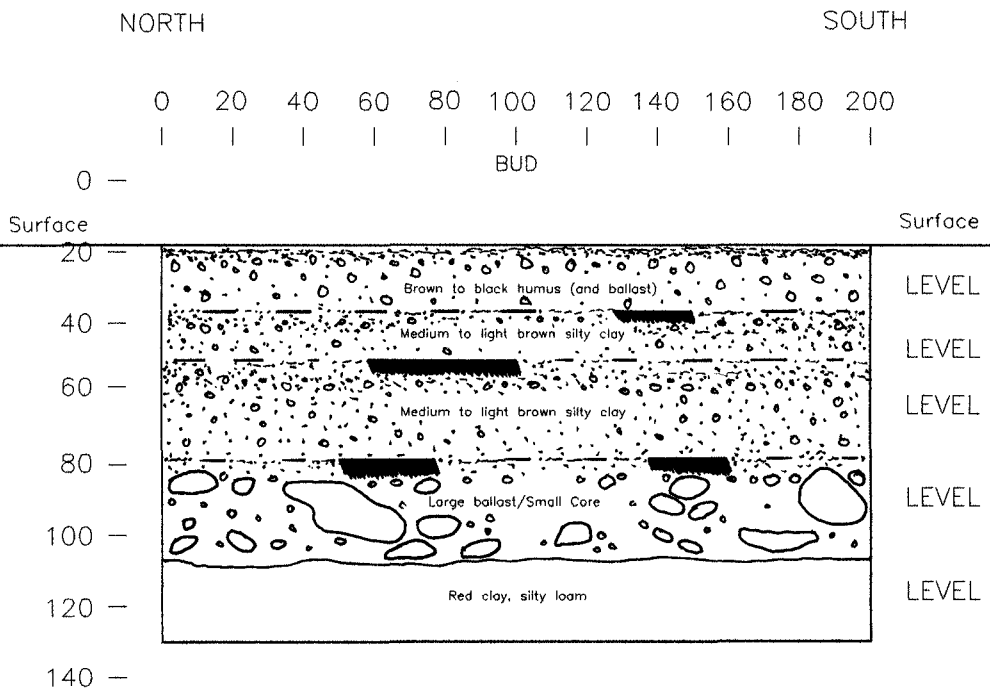


Unit B/U2, Plaza B
Cahal Witz Na
1998

Western Belize
Regional Cave Project



Plan by:
James Conlon
Jennifer Ehret
Drawn by:
James Conlon
Jennifer Ehret



the northwest quadrant of the unit. The other fragment of this point was located in the northeast quadrant just beneath ground surface in Level 1. Willey et al. (1965:445) comment that "Dating on the ceremonial laurel leaf blades is quite convincingly Late Classic" and place these objects in the Spanish Lookout phase (A.D. 700- 900) in the Belize Valley.

Level 1 consisted of a brown to black humus layer above medium ballast followed by a layer of loosely packed cobble boulders which were at first interpreted as the top of a cist. It was soon discovered, however, that the anticipated cist lay over a meter below, and the loose boulders were the core fill of the platform itself. Ceramics were largely eroded and only a single fragment of a lateral ridge dish, diagnostic of the Tiger Run Complex, was identified. A speleothem fragment was also recovered (Special Find # 9).

Level 2 extended from the top of the loose rock fill to the top of the burial cistt. The fill in the western half of the unit contained fewer cobble boulders and was less riddled with air pockets than that of the eastern half. Excavations in the eastern half of the unit encountered signs of capstones and cist-lining stones in the southern baulk. Excavations to the north revealed more capstones, however almost all had collapsed into the cist. This collapse may explain the numerous air gaps encountered in the eastern portion of the excavation unit. After mapping, photographing, and clearing the capstones, they were removed.

Excavations in Level 2 recovered the ceramic types diagnostic of the Preclassic, Protoclassic, Early Classic, and Late Classic (Spanish Lookout). This suggests that the TPF was constructed in the latter time span. A second speleothem fragment was recovered from this level (Special Find # 11).

When it became clear that excavations were nearing a burial, the lower portion of the Level 2 was excavated in quadrants. Above the cist in the northeast quadrant, excavations recovered sherds of the Socotz Striated type. This is diagnostic of the Early Classic. Above the cist in the southeast quadrant excavations recovered sherds of the types Socotz Striated, Dolphin Head Red, and Mountain Pine Red-Mountain Pine variety. These are diagnostic of the Early Classic and Late Classic (Tiger Run and Spanish Lookout) phases. Above the cist in the northwest quadrant excavations recovered possible Dos Arroyos Orange basal flange sherds.

The cist and accompanying human remains were excavated by David Cruz . In the north end of the cist chamber a whole vessel was recovered (Vessel 1). The vessel was recognized as drum-shaped, and the surface treatment suggested a Sotero Red-Brown type that would be diagnostic of the Tiger Run phase of the Late Classic. The vessel was placed in the foot area of the cist, and sherds of the Mountain Pine and Sotero groups (Vessels 2 - 5) were recovered in the area of the torso and head (respectively). The loose boulder fill had collapsed almost over the entire southern portion of the cist, and it is possible that the Mountain Pine and Sotero sherds had once been whole or partial vessels. The human remains themselves were very poorly preserved and great care had to be taken to avoid further destruction during excavation. The bones were removed, dried, and wrapped for transport back to the field camp. Because of their fragmented condition, the human remains could only be mapped in clusters of teeth, ribs, and some longbone fragments that appear to be from an arm. Eventually portions of a legbone were recovered and mapped in the north end of the cist. David Cruz (personal communication 1999) surmised that the individual was between 25 and 45 years. The sex of the individual was not evident due to the poor preservation of the remains.

Unit C/U3, Plaza C
Cahal Witz Na
1998

Western Belize
Regional Cave Project

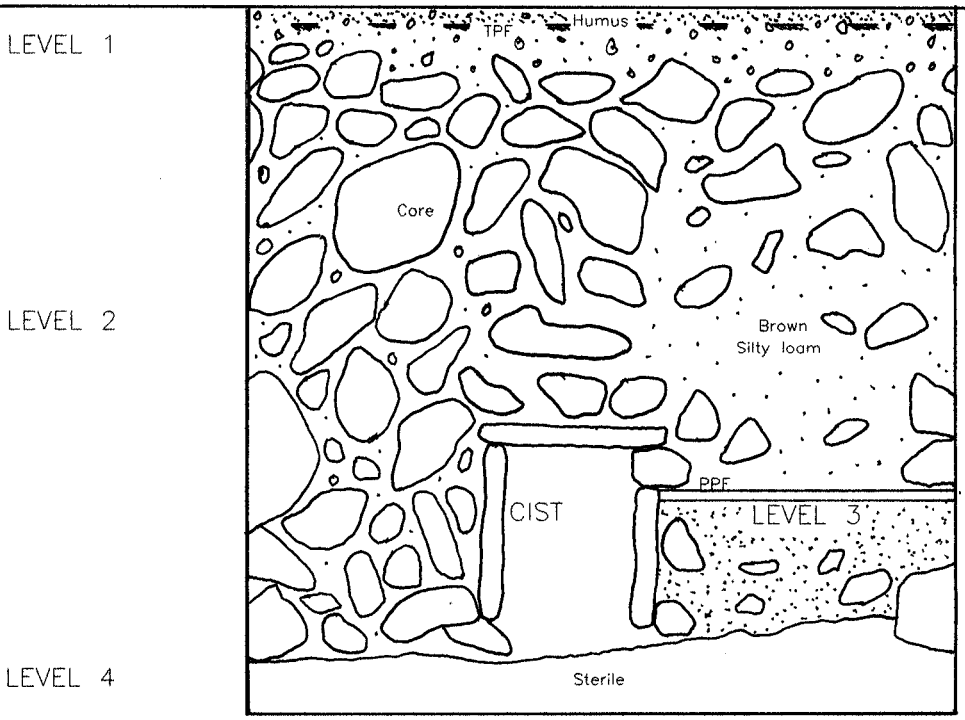
Plan by:
James Conlon
Jennifer Ehret
Drawn by:
David Cruz

0 100cm

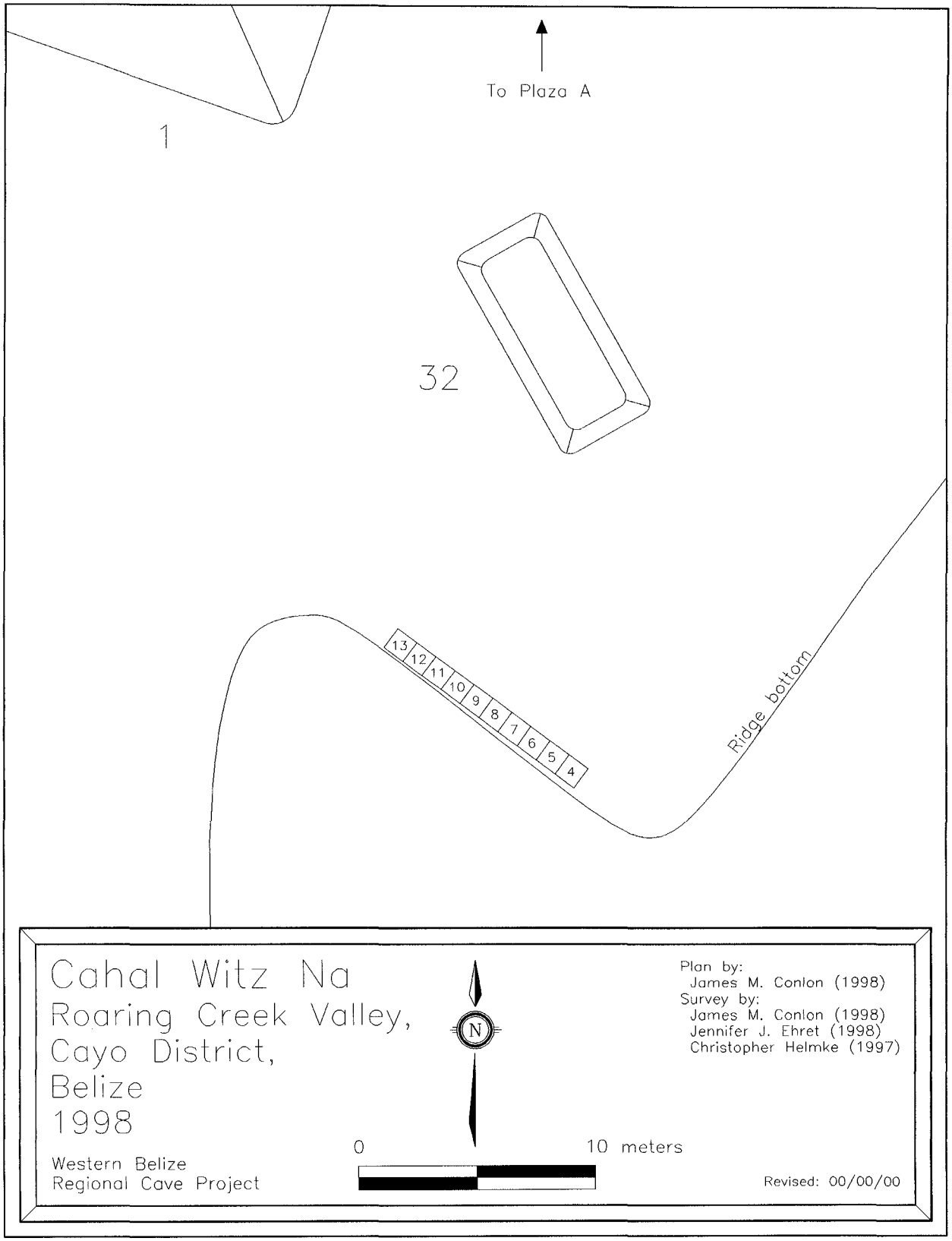
West East

BUD

Surface Surface



Limit of Excavation


To Plaza A
1
32
13
12
11
10
9
8
7
6
5
4
Ridge bottom
Cahal Witz Na
Roaring Creek Valley,
Cayo District,
Belize
1998
Western Belize
Regional Cave Project
N
0
10 meters
Plan by:
James M. Conlon (1998)
Survey by:
James M. Conlon (1998)
Jennifer J. Ehret (1998)
Christopher Helmke (1997)
Revised: 00/00/00

General excavation in the cist recovered dozens of tiny (0.3 - 0.5cm in diameter) blue-green shell beads in the head/neck area, carbon, riverine shell, and two jade beads from the head area. Because of the fragility of the shell beads it was difficult to discern whether their coloration was culturally applied pigment or naturally occurring mold. Two soil samples were also collected for flotation in order to recover the smallest human bone fragments and shell beads. Ceramic artifacts within the cist included five partial and complete vessels with affinities to Tiger Run and Spanish Lookout types from the Belize Valley. These are diagnostic of the Late Classic period and suggest that both the burial and the plaza date to this time.

Excavations in the western half of the unit continued to a small plaster surface just below the top of the cist. Bedrock was encountered at the same level as the base of the cist burial.

SUMMARY OF PLAZA EXCAVATIONS

Plaza A appears to have two separate plaza floors and construction is dated to the Spanish Lookout phase of the Late Classic. As mentioned above, the penultimate plaza floor was excavated in mixed context with the terminal plaza floor, and might have been constructed prior to the Spanish Lookout phase, perhaps in the early Late Classic Tiger Run phase. Further excavation in the plaza should hopefully confirm this.

Plaza B is the most complex courtyard architecturally. Three deteriorated plaza floor were encountered in excavation. The terminal floor was constructed in the Spanish Lookout phase of the Late Classic, the penultimate floor was constructed in the Early Classic, and the date for the earliest plaza floor is unknown. As with Plaza A, further excavation in this plaza could produce a construction date for this earliest plaza platform.

Plaza C appears to have been constructed no earlier than the Tiger Run phase of the Late Classic. This construction was punctuated by at least one burial at the base of the platform fill. Plaza C is also the highest platform construction of the three courtyards tested, and the use of dry laid fill (consisting of large boulders) suggest that this type of construction provided a more economic way for erecting monumental architecture.

SURFACE COLLECTION AT THE ROCK OVERHANG

During reconnaissance in previous field seasons, Awe discovered a rock overhang located southeast of Structure 32. The overhang actually extends along most of the eastern margin of the site core and is between 30 to 70 cm above the ground surface. For most of its length the floor of the overhang contains a relatively dense deposit of ceramics. It was decided that a surface collection of these ceramics should be undertaken by Ehret (Fig. 8). The goals of doing the collection were twofold. First, it was hoped that the assemblage at the base of the overhang could be correlated to those excavated from the site core thus could assist in determining the chronology of the center. Second, because the ceramics under the overhang appeared to have been ritually deposited their collection would allow us to compare them with ceramic assemblages within the nearby caves.

A 10m tape was laid horizontally in a roughly east-west orientation and each $1m^2$ unit area was numbered sequentially from the plaza operations, and collected as a separate lots. This was done in the

event that different sections of the overhang contained ceramics of a distinct time span.

Unit 4 extended from 0 - 1m. This area produced red and orange slipped ceramics of yet undetermined types and fragments of Mahogany Creek Incised and possibly ash tempered sherds of Belize Red. This assemblage probably diagnostic of the Late Preclassic to Late Classic periods.

Unit 5 extended from 1 - 2m. This area produced ceramics of the Mountain Pine Red, Belize Red, Vaca Falls Red, and Cayo Unslipped types. This assemblage is diagnostic of the Tiger Run and Spanish Lookout complexes of the Late Classic.

Unit 6 extended from 2 - 3m. This area produced sherds of the San Pedro Impressed, Zibal Unslipped, Roaring Creek Red, Garbutt Creek Red, and Cayo Unslipped types. As with unit 5, this assemblage is diagnostic of the Tiger Run and Spanish Lookout complexes of the Late Classic. A slate piece in the general shape of a pendant, though non-perforated, was also recovered.

Unit 7 extended from 3 - 4m. This area produced sherds of the San Pedro Impressed, Belize Red, and Daylight Orange- Darknight variety types. This assemblage is diagnostic of both phases of the Late Classic as well as the Terminal Classic. Another worked slate pendant-shape was recovered.

Unit 8 extended from 4 - 5m. This area produced sherds of the Belize Red, Alexander Variety, and Cayo Unslipped types. This assemblage is predominantly associated with the Spanish Lookout complex.

Unit 9 extended from 5 - 6m. This area produced only non-diagnostic sherds. Unit 10 extended from 6 - 7m. This area produced sherds of the Cayo Unslipped type, and is diagnostic of the Spanish Lookout complex.

Unit 11 extended from 7 - 8m. This area produced sherds of the Beaverdam and Cayo Unslipped types-- both diagnostic of the Spanish Lookout phase.

Unit 12 extended from 8 - 9m. This area produced sherds of the San Pedro Impressed *or* Mountain Pine Red- Old Jim variety. The sherds in question did have an impressed design which is more typical of San Pedro Impressed. Either would be diagnostic of the Tiger Run phase of the Late Classic. A medial or basal flange sherd was recovered-- a mode diagnostic of the Early Classic.

Unit 13 extended from 9 - 10m. This area produced sherds of the Mountain Pine Red and Cayo Unslipped types. This assemblage is diagnostic of the Tiger Run and Spanish Lookout phases of the Late Classic.

The overhang produced ceramics that predominantly date to the Late Classic. The only exception was Unit 4-- the easternmost meter of the overhang area nearest the ridge-face. Although this area did contain two eroded ashware sherds, no distinct types could be correlated to the Late Classic. This situation, however, may likely change following a detailed analysis of the pottery from the overhang. The strength of the Spanish Lookout pottery at the overhang does not correlate to the assemblages recovered in the test pit units in Plazas A, B, and C. Although Spanish Lookout complex types were recovered in the plaza units, the sherds were largely the single representative of this time

span in each respective level. As well, ash-tempered pottery was very sparse in the test pits, and the quantity of the sherds recovered at the overhang make up ca. 90% of the ash-tempered pottery at Cahal Uitz Na to date.

CONCLUSION

The 1998 excavations and surface collection at Cahal Uitz Na produced data which suggest that the site was occupied from at least the Late Preclassic to Late Classic periods. Most of the monumental architecture, however, dates to the later time frame. This knowledge is crucial for an understanding of the region's settlement history-- including the ritual use of the nearby caves. The location of the primary center of Cahal Uitz Na in proximity to these sacred places is unlikely coincidental. Archaeological work at the cave sites is still being undertaken, and future laboratory analysis of ceramic deposits within the caves will further help correlate or contrast assemblage types and chronology at both surface and subterranean sites.

Acknowledgments

First and foremost, we would like to thank Commissioner John Morris for allowing us the privilege to conduct our fieldwork during the 1998 season. Director Jaime Awe showed tremendous patience and support throughout the season. We wouldn't be there without him. Don Valentin Cu, Ventura Chi, Alfredo Puc, and Feliz Uck worked tirelessly on the excavations, and Feliz assisted with the surface collection at the overhang (in the pouring rain!). Jose Mai kept the camp running smoothly and always had some strong coffee ready when the Uitz Na team needed to start their days especially early. Many thanks to the students who helped with the excavations, and especially David Cruz for excavating the burial and analyzing the human remains.

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INVESTIGATIONS AT THE SLATE ALTAR GROUP IN THE EASTERN PERIPHERY OF CAHAL UITZ NA, CAYO DISTRICT, BELIZE.

Christophe G. B. Helmke
University College London

David M. Cruz
Trent University

Michael J. Mirro
Radford University

Amelia L. Jacobs
University of New Hampshire

INTRODUCTION

This paper presents data recorded by salvage operations conducted during a single afternoon at a peripheral settlement of Cahal Uitz Na known as the Slate Altar group. Although the settlement is small in areal extent, the ingenuous modifications of the natural topography make this site imposing architecturally. The architecture of the site will be described, as well as the salvage operation carried out on a looters pit located near the center of the plaza. The artifacts and human remains retrieved during the salvage operation will be examined in order to assess the nature of the deposit, although the assemblage was recovered entirely out of its original context. Possible function of the site will also be addressed in conjunction with its dating based on ceramic remains. The specialized nature of the site is suggested by its pyramidal architecture, a circular slate altar, the deposition of human remains, and its setting in a narrow valley that is lined with possible agricultural terraces.

LOCATION OF THE SITE

The Slate Altar group lies less than a kilometer east of the site core of Cahal Uitz Na in the karstic hills bordering the eastern perimeter of the upper Roaring Creek valley (Figure 1). An old trail runs up the ravine in which the group lies. The trail crosses through an abandoned loggers camp where large boards of Mahogany were strewn about. Passing the camp the trail forks into two trails. The northern trail leads to the Slate Altar group, continues to the summit of the hill, and ends at an abandoned Mahogany sawing station that lies nearly 1.5 km east of Cahal Uitz Na. This abandoned sawing station is located in the patio of a plazuela designated the "Cauac Che" group, because the floor of the plaza is littered with many boards of Mahogany (see Mirro et al. this volume).

The southern trail runs over a low cave entrance and continues up into the hills. The small cave was briefly explored on two occasions and named Cueva del Camino (Mirro et al. this volume). During both explorations only one ceramic sherd was seen in the cave. It is a rim sherd of a dish that

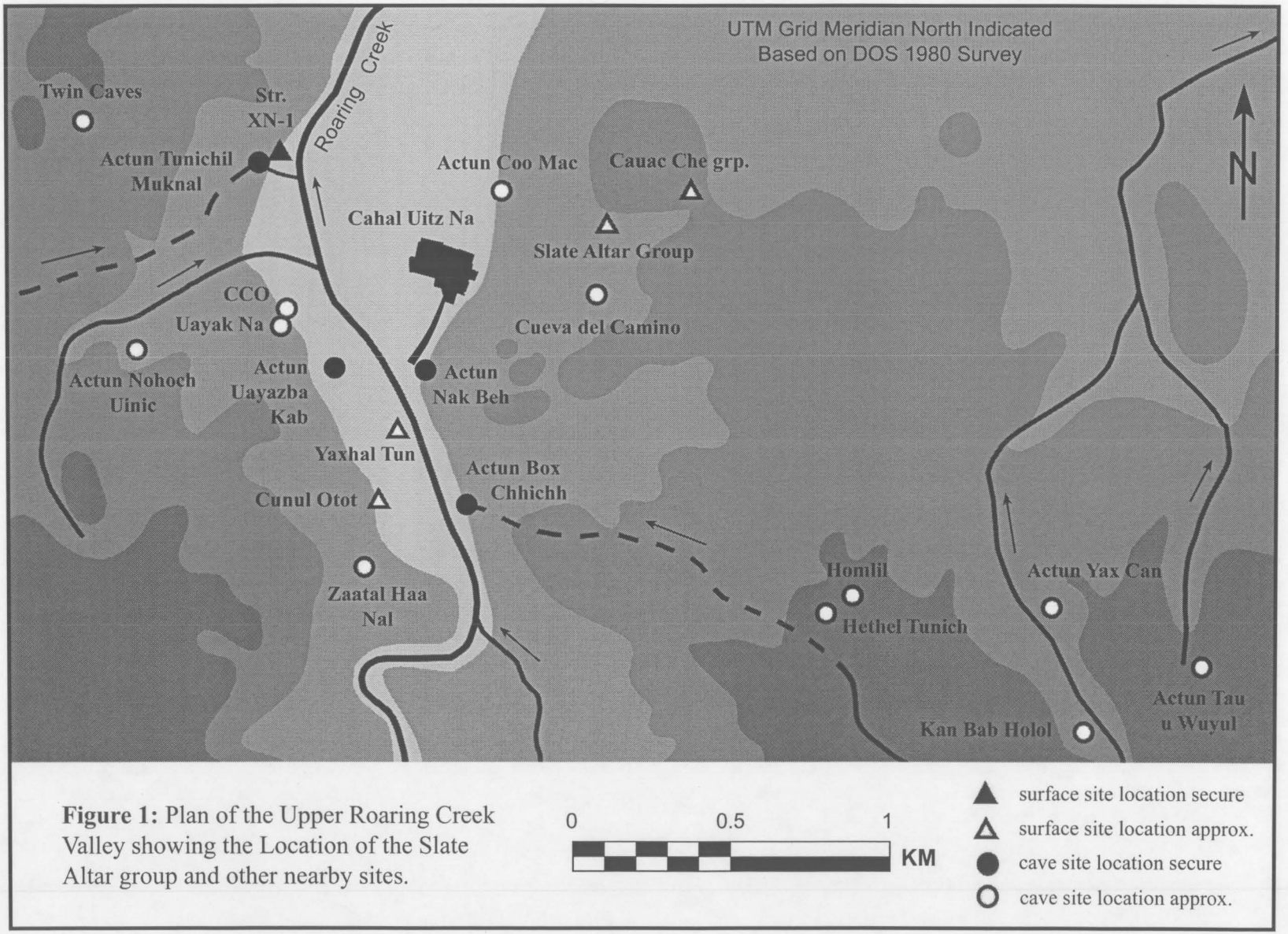


Figure 1: Plan of the Upper Roaring Creek Valley showing the Location of the Slate Altar group and other nearby sites.

exhibits a portion of a basal ridge. The sherd was identified in the field as being of the Mountain Pine Red: Mountain Pine Variety of the Tiger Run complex in the Belize Valley (Gifford 1976: 193-194). This indicates possible prehistoric activity at the cave during the Late Classic, between A.D. 600 and 700. The cave lies approximately 200 m south of the Slate Altar group.

DESCRIPTION OF THE SITE

The Slate Altar group is composed of six low mounds and several architectural modifications of the adjacent hillside (Figure 2). The group can be described as a formal structure-focused patio cluster (see Ashmore 1981: 49-54). Three mounds (Structures 1-3) define the southern and eastern sides of a patio-like space at the base of the hillside which delineates the northern edge of the ravine. These mounds range in height between 0.2 m and 0.5 m. Structure 3 defines the eastern edge of the patio, and may have functioned as the "Eastern Shrine" of the group. The northern and western sides of the patio are defined by the base of the architecturally-modified hill.

In the northern portion of the patio, just 3 m west of Structure 3, lies a circular slab of slate next to Looters Pit One (henceforth LP1) that penetrates into the plaza floor. The slab measures approximately 80 cm in diameter and is 20 cm thick. None of the photographs taken of the slate slab could be developed due to a malfunction with the photographic equipment. The possibility that the circular slate slab represents an altar will be discussed below.

Extending eastward from the southern side of Structure 1 is what appeared to be an agricultural terrace lined with roughly-hewn blocks of limestone. The "terrace" is partially defined by a small ridge of bedrock protruding out of the soil, to which several courses of limestone blocks were added. The terrace forms the southern edge of the plaza and runs from the base of the architecturally-modified hill to the eastern side of the ravine. Similar features were seen to the north and the south of the Slate Altar group. In all, perhaps a half-dozen such features were noted, each running perpendicular to the orientation of the ravine. Unfortunately, lack of time did not permit a detailed examination of these "terraces". As a result their designation as "agricultural terraces" must remain tentative.

The hill dominating the Slate Altar group has been modified in several ways. The summit was leveled to create a flat surface upon which a small mound was built (Structure 6). Structure 6 is slightly higher than 1 m and is the tallest mound of the group. The southern side of the hill was also leveled to create a platform lying between the summit and the patio space below. Upon this platform two additional mounds (Structures 4 and 5) frame the northern and southern sides of the platform. A staircase may have been built between the platform and the summit of the hill, although no clear evidence for this was seen. The southern edge of the hill was faced with a retaining wall, that is approximately 2.5 m high, which defines the northern and western edges of the patio. A small looters pit (LP2) penetrates partially into this retaining wall or terrace. No evidence for a staircase being incorporated into the facing wall was seen. Access to the elevated platform from the patio may have been gained by the small inclined pathways on the northern and southern sides of the platform.

The hill appears to have been modified so as to construct a pyramidally-shaped temple similar to Structure 14 in the site core of Cahal Uitz Na (see Awe and Helmke 1998; Conlon et al. this volume). Structure 6 of the Slate Altar group may thus represent the shrine at the summit of the

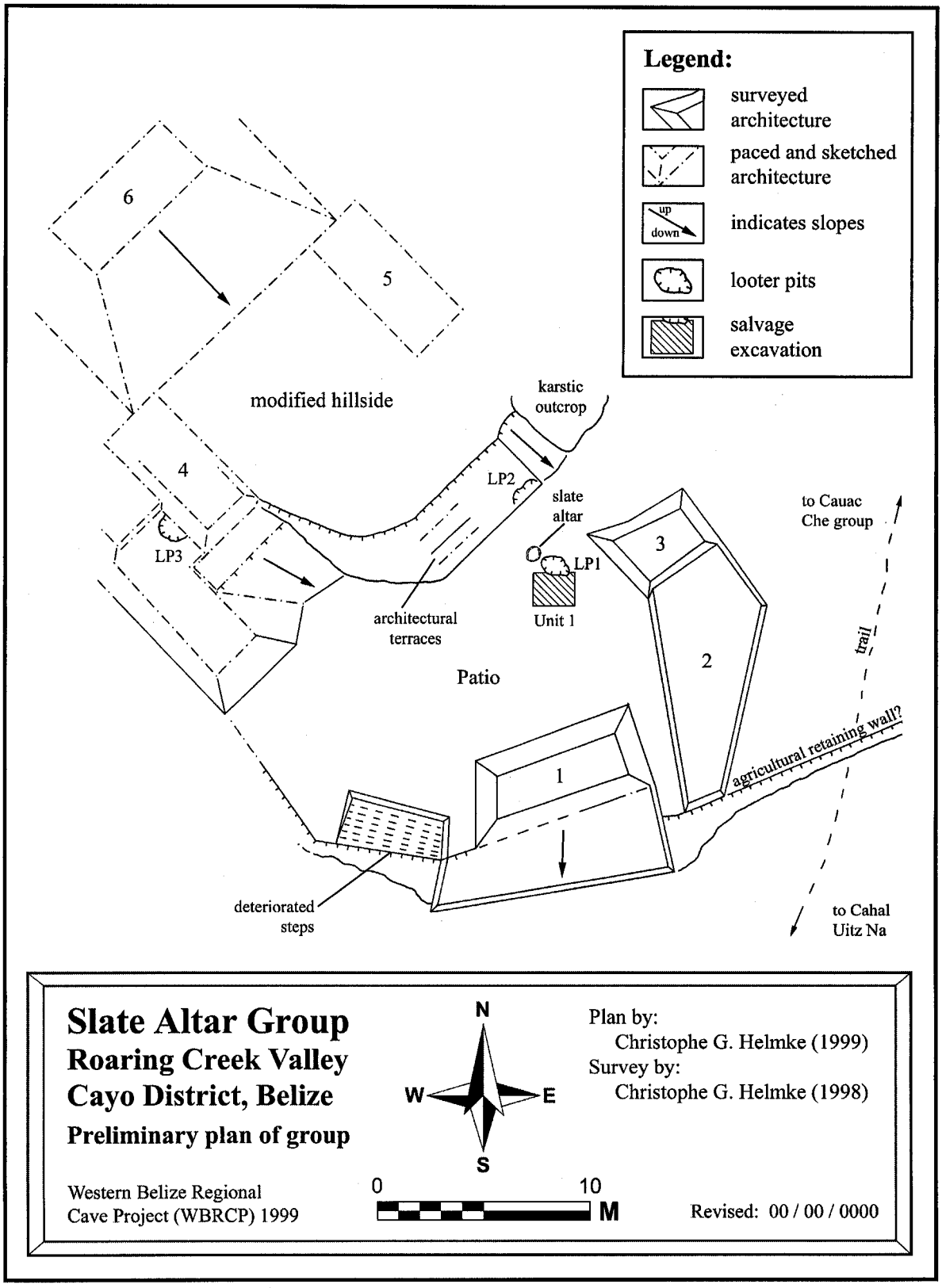


Figure 2: Plan view of the Slate Altar group.

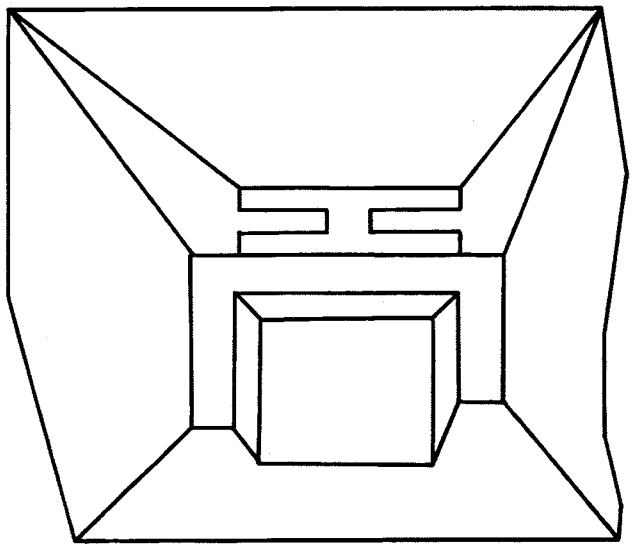
temple. The modification of the hill, by leveling and the addition of retaining walls, gives the impression that it is a large human-made structure (Figure 3).. This may have been enhanced if the architecture had been plastered over. This ingenious manipulation of the natural terrain enabled the ancient users of the site to construct a temple-like structure with only minimal construction efforts. Similar hillside modifications have been discovered at sites in southern Belize, most notably at Uxbenka and Xnaheb (Leventhal 1990: 134, 138-139; 1992: 147). The structures incorporating hillside modifications are the Stelae Plaza at Uxbenka and the tallest structure at Xnaheb (Leventhal 1990: 134, Fig. 8.3 and 8.4).

THE SALVAGE OPERATION

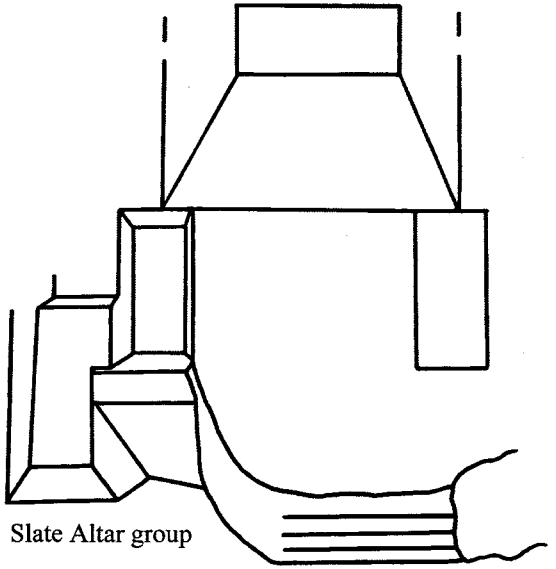
Upon the discovery of the Slate Altar group in late July 1998, the site had already been looted (Figure 4). The accumulation of vegetation and debris in the looters pits suggested that the looting had occurred several months before. Various artifacts and fragments of human remains were seen strewn on top of the circular slate slab lying adjacent to the looters pit in the plaza (LP1). The looters activity in the plaza had obviously displaced the slate slab from its original position as it was lying on top of the modern surface. The cultural material lying on top of the slate slab was most likely retrieved by the looters during the excavation of LP1. The backdirt from the excavation of LP1 had been piled along the southern edge of the pit.

Excavations at the Slate Altar group were restricted to a salvage operation which focused on excavating the backdirt from the looters pit in the plaza (LP1). The purpose of the excavation was to retrieve as much cultural information, particularly diagnostic ceramics, for use in establishing a preliminary chronology for the group. Associated artifactual remains could also clarify the deposition of the human remains. This second objective was designed to determine, at least in part, the function of the site.

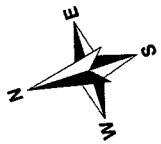
An excavation unit measuring 1.5 m (N-S) x 2 m (E-W) was set up on the southern edge of LP1, so as to encompass the pile of looters backdirt. Materials retrieved from the backdirt were collected as a single lot since they were obviously not in situ. Excavation was halted as soon as the modern humic layer upon which the backdirt was deposited, was reached throughout the unit. The matrix of the backdirt consisted entirely of dark brown loam with small limestone inclusions. Larger limestone blocks were lying on top of the backdirt pile. The pile was roughly conical in shape, measuring 33 cm high at its center. The sides of the pile were less than 10 cm thick. The looters pit measured approximately 0.9 m (N-S) x 1.4 m (E-W) wide and was 1.14 m deep. The fill in the backdirt may not account for the entirety of the core that was retrieved from the pit, as the volumes of both differ by nearly 0.4 m^3. A total of 99 ceramic sherds, 277 fragments of human bone, 1 chert core, 1 ground fragment of slate, 1 partially drilled stone, 1 river cobble, 1 *mano* fragment, 1 shell fragment, and 1 drilled shell disk were retrieved. A surface collection of all artifacts within a 2 m radius around the looters pit was also conducted. The majority of ceramics and human remains were recovered from the excavation of the backdirt, but several sherds, the chert core, the fragment of slate and bones were also lying on top of the slate slab. The shell fragment and shell disk were retrieved from the backdirt. When the circular slate slab was lifted to inspect its underside for signs of carving, the fragmentary *mano* was discovered lying on top of the humic layer below the slate slab.



Cahal Uitz Na



Slate Altar group



Comparison between Structure 14 at Cahal Uitz Na and the architecture of the modified hillside at the Slate Altar group.

Plan by:
Christophe G. Helmke (1999)
Adapted from surveys by:
James M. Conlon (1998)
Christophe G. Helmke (1998)

Western Belize Regional Cave Project (WBRCP) 1999

0 10 M

Revised: 00 / 00 / 0000

Figure 3

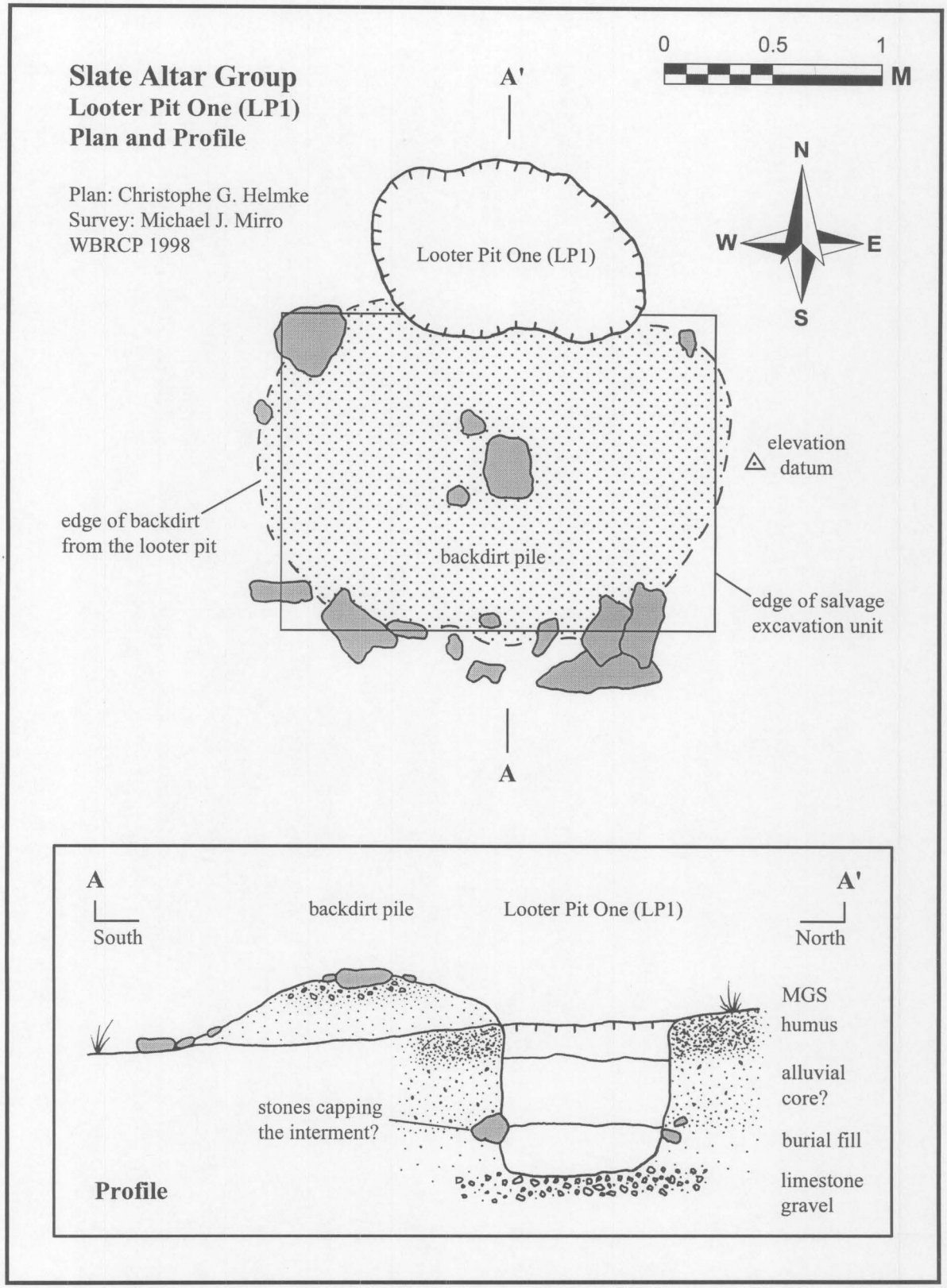

Slate Altar Group
Looter Pit One (LP1)
Plan and Profile
Plan: Christophe G. Helmke
Survey: Michael J. Mirro
WBRCP 1998
0
0.5
1
M
A'
N
W
E
S
Looter Pit One (LP1)
elevation datum
edge of backdirt from the looter pit
backdirt pile
edge of salvage excavation unit
A
A
South
backdirt pile
Looter Pit One (LP1)
A'
North
MGS humus
alluvial core?
stones capping the interment?
burial fill
limestone gravel
Profile

Figure 4

No clear cultural stratigraphy was observed in the baulks of the looters pit. Also, no indication of floors were seen, which suggests that the plaza may have never been plastered. It is possible, however, that plastered floor(s) may have deteriorated to such an extent that no trace of it survived in the profile of the looters pit. The first 25 cm of the looters pit penetrated through the humus layer or 'O Horizon' (see Renton 1994: 174-191). Between 25 cm and 90 cm in depth, the pit penetrated through what appeared to be regolith (Renton 1994). This layer may represent the fill, which was used to level the surface of the plaza. The depth of the matrix in this second layer may be due to the retention of soil by the terrace framing the southern edge of the Slate Altar group. Similar depths have been documented for the soils retained by agricultural terraces at Caracol (see Coultas et al. 1994). Several limestone blocks were seen protruding out of the baulks at approximately 1 m below modern ground surface in LP1. It is possible that the limestone blocks lying on top of the backdirt were retrieved from that level inside the pit. The presence of some human remains in the lowest layer of LP1, between 1.14 m and 1.19 m in depth suggests that the deposit was retrieved from deep inside the pit. Based on the excavations of burials in the entrance of Actun Uayazba Kab in 1997 and 1998, it was established that it was a customary practice to cap burials with limestone blocks (Ferguson this volume, see also Gibbs 1998). It is likely that the human remains retrieved by the looters from LP1 were also originally capped by a layer of limestone blocks. The artifacts, however, could have been retrieved from any level throughout the pit.

Although it is impossible to determine the original context in which the *mano* was discovered, its secondary location underneath the slate slab suggests that it was found by the looters prior to the displacement of the slate slab. If the slate slab was originally located where the looters pit penetrates the plaza, then the *mano* must have been discovered before the looters dug LP1. This in turn suggests that the *mano's* primary context may have been close to the surface in association with the slate slab.

THE CIRCULAR SLATE SLAB

The circular slate slab is one of the most interesting features of the Slate Altar group. It measures approximately 80 cm in diameter and is between 20 and 30 cm thick. The location in which the slab was found indicates that it is in a secondary setting, and must have been moved to its present location recently. Of importance is the fact that the slab was lying on top of the modern ground surface and immediately adjacent to Looter's Pit 1 (henceforth LP). Since the width of the looters pit matches the diameter of the slate slab, it is more than likely that the slate slab was once positioned where the looters pit now penetrates the plaza. The surfaces of the slate slab were briefly inspected for signs of carving or incising, but none were seen.

Its location at the foot of the architecturally-modified hillside in the small plaza may suggest that this slab was once placed there as an altar. This probable altar does lack the characteristic "drum" shape, which is commonly attributed to such Classic period monuments. The placement of LP1 cannot be explained in the absence of the circular slate slab that was found lying immediately adjacent to the pit. Additionally, the width of the looters pit matches almost exactly the diameter of the altar. Finally, if the circular slate slab was located where the looters dug LP1, then the presence of the human remains appears to be more easily explained. Indeed votive offerings dedicating the placement of altars and stelae in plaza settings are well-documented for many sites in the Maya area. Altars are frequently found at the base of pyramidal structures and/or paired with stelae. Using all the data at

hand, the designation of the slate slab discovered in the plaza as an "altar", therefore seems warranted and is in keeping with designations employed in Mesoamerican archaeology.

THE ARTIFACTS

Ceramics

Of the 99 ceramic sherds retrieved from LP1, only 14 still retained diagnostic elements (Figure 5).. All other sherds were either nondiagnostic body sherds or too small to be subjected to a type:variety analysis. The diagnostic sherds were briefly examined, but will be compared to the assemblage recovered from Cahal Uitz Na in the future. The ceramic sequence established for the site of Barton Ramie (Gifford 1979), which lies approximately 16 km northwest, was used in the identification of the ceramic remains discovered at the Slate Altar Group. Only four types were readily identifiable: Cayo Unslipped (2 *olla* rims) (Gifford 1976: 276-282); Roaring Creek Red (1 dish rim) (Gifford 1976: 240-243); Yalbac Smudge-Brown (1 bowl rim) (Gifford 1976: 244-246); Garbutt Creek Red (1 bowl rim) (Gifford 1976: 230-233). All these types date to the Spanish Lookout Complex (AD 700 - AD 900) and are typical of the types at all sites in the Roaring Creek valley (see Griffith 1998; Awe et al. 1998). Other type:variety designations are more tentative, and will therefore await detailed analysis during the 1999 season. None of the hallmark types predating the Spanish Lookout Complex were identified in the field, which may suggest that the bulk of the ceramics date to the Late to Terminal Classic (AD 700 - AD 900).

Ground and Chipped Stone Artifacts

The ground and chipped stone artifacts include all specimens made of stone that were retrieved from LP1, irrespective of whether the specimens represent formal tools. Three artifacts and two manuports comprise this small assemblage. Two typical lithics are represented by a chert core and a fragmentary granite *mano*. The core is a small, fist-sized, chert nodule displaying several flake scars. Such cores are frequently found in architectural fill at other sites in the Belize valley. One partially drilled stone was also discovered. Its exact function has not been determined, but comparison to assemblages from other sites should reveal whether similar artifacts have been found elsewhere. The two manuports are represented by one fragment of slate and one river cobble. The absence of *arroyos* or streams in the immediate vicinity of the Slate Altar group indicate that the river cobble was imported to the site. Based on a hasty comparison between the color of the circular slate slab and the slate fragment, it appears that the fragment was not once part of the larger slab. Consequently, it too may have been imported to the site as a manuport. Because the majority of structures in the Roaring Creek valley are constructed of large river boulders or cobbles and occasionally of slate blocks (particularly at Cahal Uitz Na, Yaxhal Tun, and Chaac Mool Ha; see Awe and Helmke 1998; Awe et al. 1998; Conlon et al. this volume), it can be suggested that the cobble and the slate fragment were incorporated into architectural core at the Slate Altar Group. If this is accurate it would indicate that the second layer seen in LP1 was not regolith but architectural core.

Shell

The sample of shell artifacts is represented by two specimens: one shell fragment and one drilled shell disk. The fragment is a portion of the body of an unidentified shell. The shell disk is 2.7 cm in diameter, 0.3 cm thick, and is perforated by a conical drill hole which ranges between 0.3 cm and 0.15 cm in diameter. Similar perforated and undecorated discs have been discovered at numerous

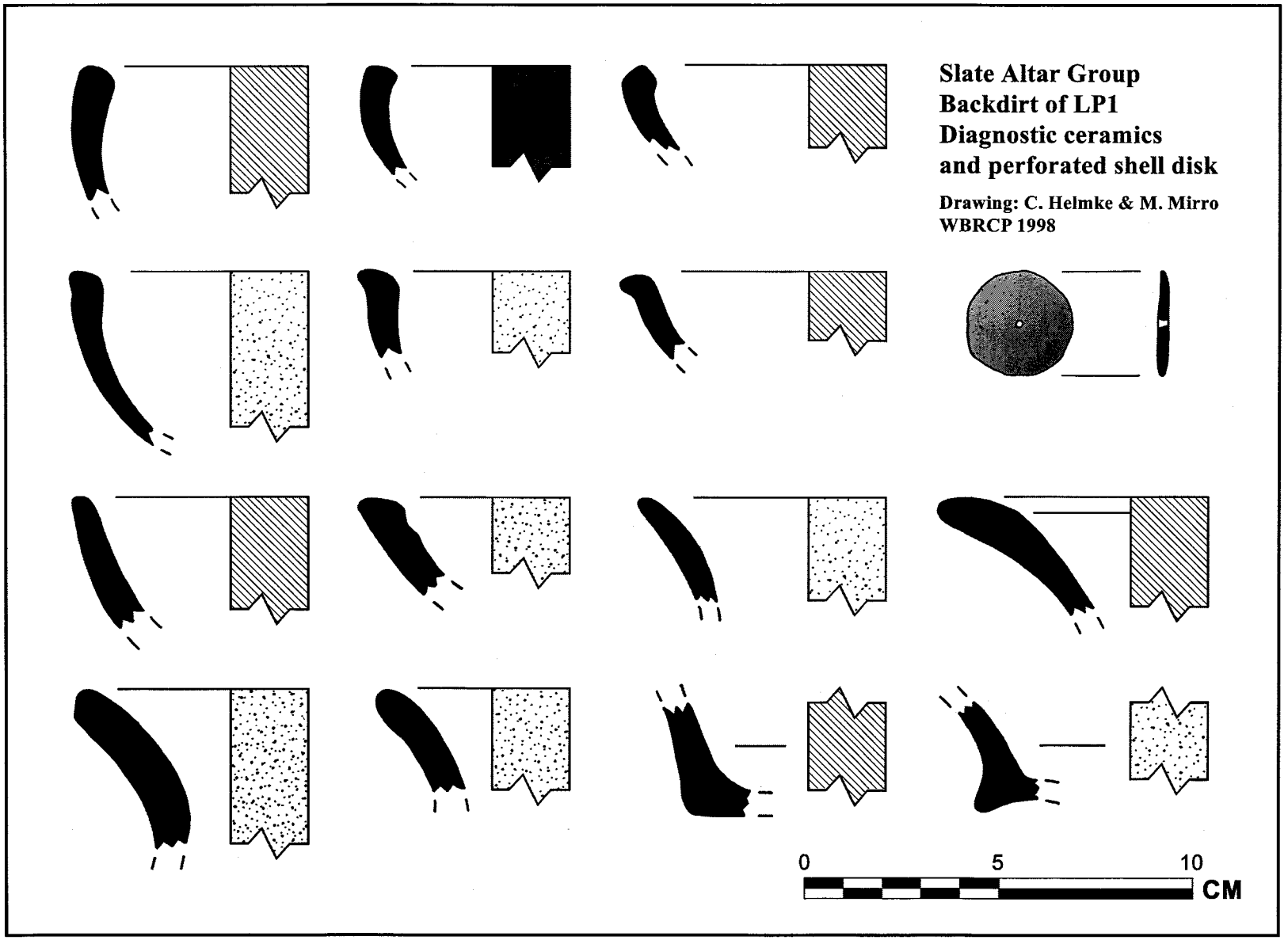

Slate Altar Group
Backdirt of LP1
Diagnostic ceramics
and perforated shell disk
Drawing: C. Helmke & M. Mirro
WBRCP 1998
0
5
10
CM

Figure 5

sites, including Eduardo Quiroz Cave (Pendergast 1971: 75, Fig. 17o), Baking Pot (Bullard and Bullard 1965: 36, Fig. 17a), Barton Ramie (Willey et al. 1965: 510, Fig. 310a), and Tzimin Kax (Thompson 1931: 296, Plate XLVI). The shells were used to make the disks from Eduardo Quiroz (perforated and unperforated) are Conch (*Strombus sp.*), and West Indian Chank (*Turbinella angulata* Solander) (Pendergast 1971: 73). Although the shell disks lack diagnostic features that could be used to seriate them chronologically, the majority have been recovered in Late Classic contexts. No particular function has been assigned to these disks, but they have been referred to as *adornos* (Willey et al. 1965) and may have formed parts of necklaces.

THE HUMAN REMAINS

All fragments of human remains were retrieved by the salvage operation of LP1. Although they were discovered in a secondary context, the material in question probably formed a discrete archaeological feature. However, based upon the fragmentary nature of the remains, determination of the type of interment could not be determined. The looters excavation was likely carried out with the use of a machete. This is indicated by the presence of deep cutmarks on numerous remains. Additionally, several long bones were cut right through exposing the medullary cavity.

Field analysis of the skeletal remains indicate that three individuals are represented by the assemblage. This assessment is based upon the identification of three distinct mandibles. Of the three mandibles two of them exhibit reabsorption of teeth. These two mandibular fragments are of older individuals past the age of sixty (Brothwell 1981). The third mandibular fragment represents an adult individual on the premise of the fragment's robusticity and heaviness (Brothwell 1981: 65). Other cranial elements include parietal and occipital bone fragments. In total ten cranial fragments were identified. Post-cranial fragments include remnants of long bone elements (66), tarsal (9), rib (90), and unidentified fragments (169). The total number of human remains identified are 277 fragments.

Heavy fragmentation of the assemblage made sexing difficult. Nevertheless, based upon the general robustness of the majority of the remains and the three mandibles, at least one male individual was represented. This individual was identified by a reabsorbed mandible with well developed gonial flaring (Brothwell 1981: 61).

The incomplete nature of the assemblage and the destruction of their context makes accurate identification of the interment as a burial or a cache impossible. The association of the human remains with the Eastern Shrine (Structure 3) and their placement beneath the altar, however, suggests that they may be associated with a dedicatory cache (see the following for a discussion of burials as caches: Becker 1992, 1993; Chase 1994: 124-125; Coe 1959, 1990: 930).

DISCUSSION

In summary, the diagnostic ceramics from the looters backdirt, all date to the Late and Terminal Classic periods (AD 700 - AD 900). None of the hallmark types of earlier periods are present in the sample recovered. The small sample size and the highly eroded condition of the pottery prevents the secure designation of some sherds to either Early or Late Classic ceramic types. It is possible that occupation of the Slate Altar Group dates back to the Early Classic, but at the present there is no

secure ceramic evidence to support this claim. The presence of a fragmentary Tiger Run period dish in Cueva del Camino, suggests that the area surrounding the Slate Altar Group was at least visited by the Maya in the 7th Century AD. Securely provenienced ceramics from formal excavations at the group would resolve the chronology of the site's occupation. All the Late Classic ceramics from LP1 are common type:varieties at all settlement and cave sites in the Roaring Creek valley. The other types represented in the small sample are not common in the cave assemblages. The scarcity or absence of these types in subterranean contexts may be due to functional differences of the vessels. The tentatively typed specimens may have similar counter-parts in the ceramic assemblage from Cahal Uitz Na. This possibility will be investigated in future seasons.

The importance of the Slate Altar group lies in the fact that the settlement incorporates typical elements of a residential cluster, as well as elements that thus far had only been found in the site core of Cahal Uitz Na. Ties between the Slate Altar group and the site core of Cahal Uitz Na can be inferred from architectural similarities between the modified hill and Structure 3 of the site core. Another important similarity is the use of slate as the raw material for important monuments. The relatively high frequency with which stela-like monuments made of slate occur in the Roaring Creek valley suggests that slate was the preferred raw material for monuments typically associated with the elite (see Awe et al. n.d). The discovery of a circular slate slab which is similar to monuments traditionally designated as "altars" is therefore congruent with the interpretation positing that slate was the preferred medium for elite-associated monuments in the Roaring Creek valley. Given these similarities with the site core it may be possible that the Slate Altar Group was not used primarily as a residential site but that it could have had ritual function. Alternatively, it could represent a residential cluster with its own shrine occupied by people of relatively high status.

In the absence of detailed excavation data from the Slate Altar group it is difficult to advance explanations for its location in the hills surrounding Cahal Uitz Na. Its location does appear to be of some importance, since it is not a typical outlying residential cluster. Also of interest, is the model constructed for the housemounds lying in the hills surrounding the site core of Copan (see Freter 1994). This model suggests, and is partially confirmed by excavation data, ceramic dating, and obsidian hydration dating, that the vast majority of outlying housemounds were established in the Late Classic as a result of decreasing parcels of arable land in the valley bottom (Freter 1994). This model does not appear to be applicable to the Slate Altar group, and its location in the hills must therefore be explained differently.

The main features of the Slate Altar group point to ritualism as the primary function of the group. The presence of possible agricultural terraces in the ravine or small valley in which the group lies may indicate ties to the control of agricultural production. A possible combination of both interpretations suggests that the Slate Altar group was the focus of agriculturally-oriented rituals. The modification of the hillside into a pyramidal structure may also add to this interpretation. Besides practical reasons, the incorporation of a temple-like structure into a natural hill may have had symbolic motivations that are not easily ascertained from the archaeological record. Possibly the worship of earth deities associated with particular topographic features, such as hills (see Brady 1997; Vogt 1969: 375-391; Heyden 1975; Stone 1995) was the purpose of the structures incorporated into the flank of hills.

The determination of the Slate Altar group as a residential or non-residential group has a direct bearing upon the interpretation of the interment associated with the Eastern Shrine (Structure 3). Two possible interpretations can be postulated by the present osteological data. If the Slate Altar group proves to be a residential group, the placement of the burial might be dictated by the location of the Eastern Shrine (Structure 3). Excavation of residential groups in the Maya Lowlands has revealed that the Eastern structure typically functions as an ancestral shrine where the inhabitants of the group buried their dead (Ashmore 1981; Chase 1994: 129). The placement of the burial at the base of the Eastern Shrine (Structure 3) would be typical of a residential group, since non-tomb burials have been found at the base of shrines (Chase 1994: 129). If this is the case, the placement of the altar may represent a separate event subsequent to the interment, and its location may possibly be dictated also by the axial alignment of the Eastern Shrine (Structure 3).

Conversely, excavation of Structure 3 may reveal the absence of human remains in which case, the group probably did not function as a residential group. The possible absence of burials in the architectural core of Structure 3 would indicate that the human remains of LP1 are instead associated with the placement of the altar. The association of the human remains with the slate altar suggests that the deposit functioned as a cache offering dedicating the placement of the altar. Unfortunately, artifacts and other data that could have confirmed whether the interment was indeed a cache were removed by the looters during the excavation of LP1.

CONCLUSION

Examination of the architectural composition of other peripheral settlements in the Roaring Creek valley will no doubt indicate whether other groups reflect similar patterns to that of the Slate Altar group. On the other hand, this group may prove to be unique. Despite the fact that the salvage operations at the group did not conclusively resolve some basic issues such as the type of human interment and the chronology of the site, it can be argued that the Slate Altar Group was an important loci in the Terminal Classic. Additionally, if the group was not used for residential purposes as may be indicated by the modified hillside and the altar, then the presence of human remains in a possible dedicatory cache furthermore argues for the Slate Altar group as having been an important place of ritual in the periphery of Cahal Uitz Na.

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PATTERNS IN THE DARKNESS: A REPORT ON THE 1998 INVESTIGATIONS IN ACTUN UAYAZBA KAB, BELIZE

Cameron Scott Griffith
Indiana University

INTRODUCTION

The past decade of archaeological research in the Maya area has seen a marked increase in the investigation of caves and the study of their role in precolumbian Maya sociopolitical and ritual contexts (see Awe 1998, Brady 1989, 1997, Bassie-Sweet 1996, Bonor 1987). Prior to the recent inception of long-term cave projects, the few scattered investigations in Maya caves have regarded caves as a homogenous class of geographic features that were utilized commensurably by the ancient Maya. The Popul Vuh (Tedlock 1985) describes Xibalba, the Maya underworld, as a watery, dark level of the Maya universe, and caves have been argued as being perceived as entrances or windows to this mythological subterranean realm (Brady 1989, Eliade 1954, Prufer 1995, Awe 1994, MacCleod and Puleston 1978). However, the mythology of the ancient Maya also indicates that Xibalba was a multifaceted and diverse environment, with different areas or "houses" that bold travelers in the underworld would encounter (Tedlock 1985). Given the ancient Mayas belief in the diverse nature of the underworld, it is possible that in addition to regarding caves as entrances to this sacred locale, they also perceived certain chambers within caves as analogs to the various areas within Xibalba.

As increasing data have come forth from research projects focused on the investigation of caves, and as more and more caves have been investigated, some researchers have argued that the activities of the ancient Maya in these subterranean contexts not only varied from cave to cave, but from place to place within caves as well (Awe 1998, Brady 1989, Moyes and Awe 1998, Reents-Budet and MacLeod 1996, Griffith n.d., 1999). One of the specific goals of the Western Belize Regional Cave Project (WBRCP) is to explore the possibility that different rituals were conducted in different areas of caves (Awe 1998: 9). Investigations by the WBRCP in 1997 and 1998 revealed the emergence of patterns of certain artifact assemblages appearing in morphologically similar loci within separate caves (Gibbs 1998, Griffith 1998, 1999, Moyes and Awe 1998). These patterns may eventually reveal the certain morphological characteristics that defined ritual boundaries within caves for the ancient Maya.

BACKGROUND AND SITE DESCRIPTION

In 1996 the author was led to Actun Uayazba Kab by Charley Hancey, an American expatriate living alone in the jungles of Belize, and a local man known only as Pablo who hails from Georgeville Village, Belize. The cave is located in the Roaring Creek Valley of the Cayo District of Belize, approximately 10 km south of Teakettle Village, in an area that has numerous caves with evidence of ancient Maya use. The Roaring Creek is a tributary of the Belize River which flows

North from the Mountain Pine Ridge to the village of Roaring Creek, near Belmopan. Uayazba Kab is just west of the Roaring Creek, recessed into the side of a foothill approximately 500 km west of the surface site Cahal Uitz Na (see Mirro, et al. Figure 1, this volume for a map with the location of Uayazba Kab).

Actun Uayazba Kab has two entrances, both measuring just over 18 m in height. The entrances are separated by a stalagmitic column that is 7 m wide, which effectively divides what would be a single entrance for the cavern into two interconnected chambers. The entrances face east, and as the two entrance chambers only extend a few meters into the foothill, the cave resembles a rock shelter with twin entrances. However, Uayazba Kab does have a number of small passages that extend deeper into the face of the foothill, which define it as a true cave.

During the initial reconnaissance efforts in 1996, the author discovered that Uayazba Kab contains petroglyphs, pictographs, and numerous artifacts left by the ancient Maya. The petroglyphs identified to date are all located in the light zone within the entrances of the cave. The pictographs are located only in the dark zone. The petroglyphs include crude faces, footprints, elaborately carved designs, and anthropomorphic figures. The pictographs include handprints, triangles, and simple charcoal smudges (for a detailed list and thorough analysis of the corpus of art in Actun Uayazba Kab, see Helmke and Awe 1998).

Although the extensive carving in the entrances of Uayazba is elaborate and evocative of the ritual activity that took place in the cave, the black handprints within the cave are what really caught the attention of the author during his initial visit (Fig. 1). Similar handprints, in black and in red, have also been documented in caves in the Yucatan Peninsula and Guatemala (Bonor 1989, Strecker 1982, Stone 1995). A specific reference to the handprints was desired for the name of the cave. The title "Actun Tuux Yan Uayazba Camppel Kab" (Cave of the Four Handprints) was suggested but this was considered to be a bit lengthy and clumsy for a site name (Ramon Arzapalo Marin to Clemency Chase Coggins, personal communication, 1996). The name Actun Uayazba Kab was settled upon as the best abbreviation to achieve the English translation "Handprint Cave" for the site.

INVESTIGATIONS OF THE 1998 SEASON

Archaeological investigations in Actun Uayazba Kab during the 1998 season of the Western Belize Regional Cave project (WBRCP) were divided into four separate operations. Operation 1 consisted of excavation units placed in the two entrances of the cave (Ferguson this volume). Operation 2 was carried out in Ledge 2 (Mirro this volume) and operation 3 took place in Ledge 1, which is in the light zone. Operation 4 took place in the dark zone of the cave in two different loci: The Histo Pool Tunnels and Sac Tunich Na. In addition to excavation, operations 2, 3, and 4 also included surface collection and mapping. This paper summarizes operations 3 and 4, presents the preliminary results, and offers some initial interpretations of the findings.

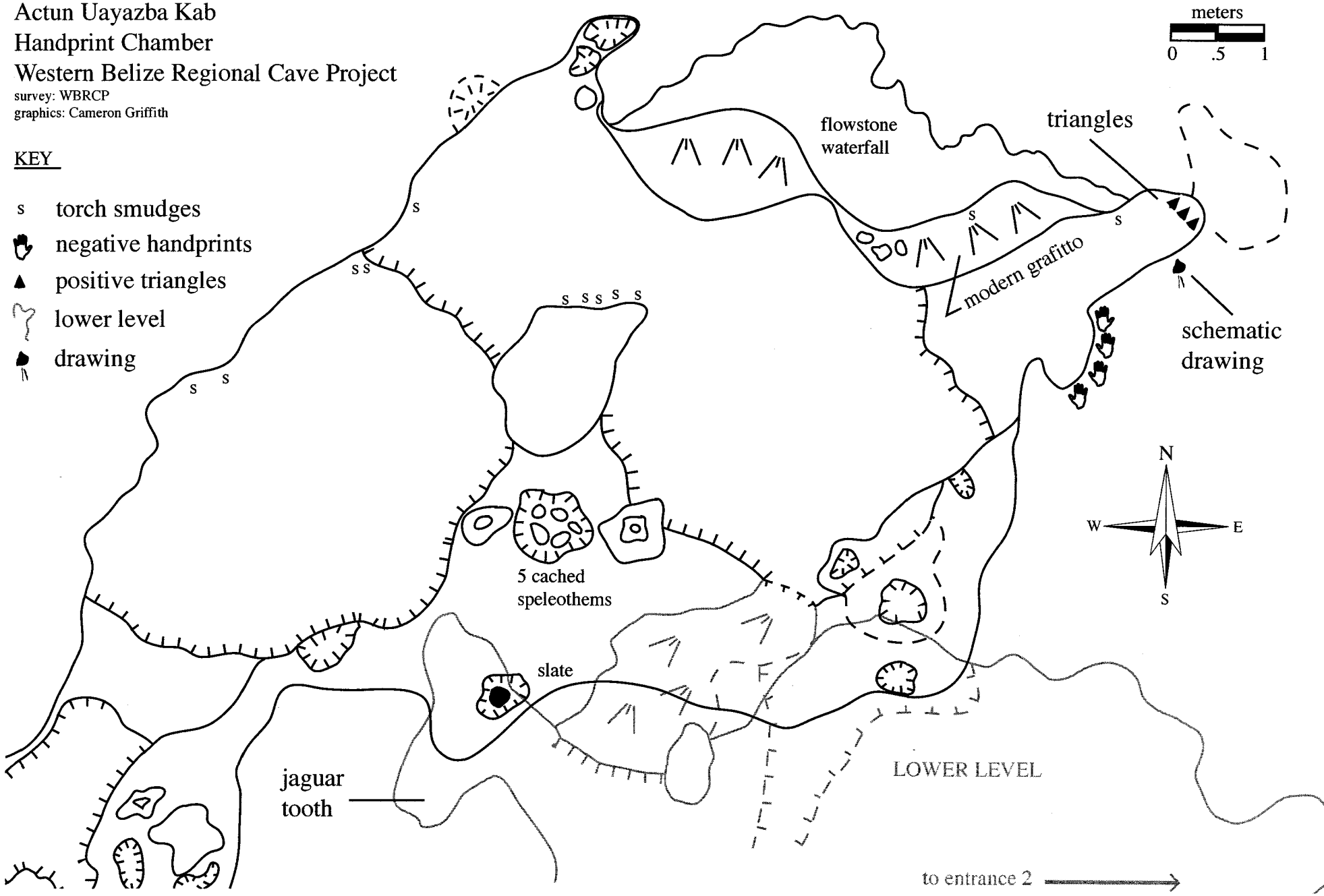


Figure 1. Handprint Chamber Map

OPERATION 3, LIGHT ZONE

Operation 3 took place in Ledge 1 (Fig. 2) as a continuation of excavations carried out there in the 1997 season. The previous investigations in Ledge 1 focused on the mapping of the area and the excavation of pools 1 and 4 (Griffith 1998). The 1998 investigations consisted of three separate excavation units defined by the natural morphology of the travertine pools in Ledge 1.

Ledge 1

Ledge 1 is a small travertine ledge approximately 11 meters above Entrance I of Actun Uayazba Kab. Although it is possible that the ancient Maya could have climbed up the rock face in order to gain access to the ledge, members of the WBRCP required specialized climbing gear and technical skills in order to reach this area. The ancient Maya may simply have constructed a ladder or scaffolding to facilitate access to Ledge 1. Ledge 1 measures approximately 10 X 4 meters and contains a number of perennially active travertine pools and small tunnels too tight to prevent human passage.

Unit 7

Unit 7 was defined by a small passage of limestone karst located beneath the upper section of Ledge 1. This unit was initiated because it appeared that many of the polychrome sherds recovered from the surface of pool 1 during the 1997 season were washing in from this area (Fig 3). The unit followed the natural dimensions of the passage, measuring approximately 2 X 3 meters. Excavations extended as far as possible in the passage, as the tunnel extends to the southwest from Pool 1 and becomes too tight to permit human travel (Fig. 3). The orientation of the passage results in most of the passage falling in the penumbral zone, with only the entrance of the passage that opens into Pool one situated in the true light zone. A visual inspection indicated that there is no cultural material present on the surface beyond the inaccessible area.

The unit was excavated in one level that terminated in the limestone floor of the passage. The matrix consisted of light brown dusty dirt and guano containing numerous small faunal bones. Once excavation had begun it became apparent that the total depth of the matrix in the passage was no greater than 3 to 4 centimeters. The complete rim, neck, and upper body of a large olla as well as a few ceramic sherds were visible on the surface. A total of 173 ceramic sherds, one chert drill, and numerous faunal bones were recovered from Unit 7.

In summary, the excavations in Unit 7 recovered a number of pottery sherds, numerous faunal bones, and one lithic tool. The constricted morphology of the passage, and the lack of cultural material in the tight spots suggest that the cultural material was either placed or thrown into the passage rather than washed in from an area beyond Ledge 1. Thus, it appears that the polychrome sherds that seemed to be washing into Pool 1 from the passage defining Unit 7 were deposited in both areas as a result of the activities related to the deposition of the pottery.

Unit 14

Unit 14 was defined by a large travertine pool, Pool 3, located on Ledge 1 (Fig. 4).

Actun Uayazba Kab
Ledge 1
Western Belize Regional Cave Project

survey: C. Helmke, P. Colas, C. Griffith
graphics: Cameron Griffith

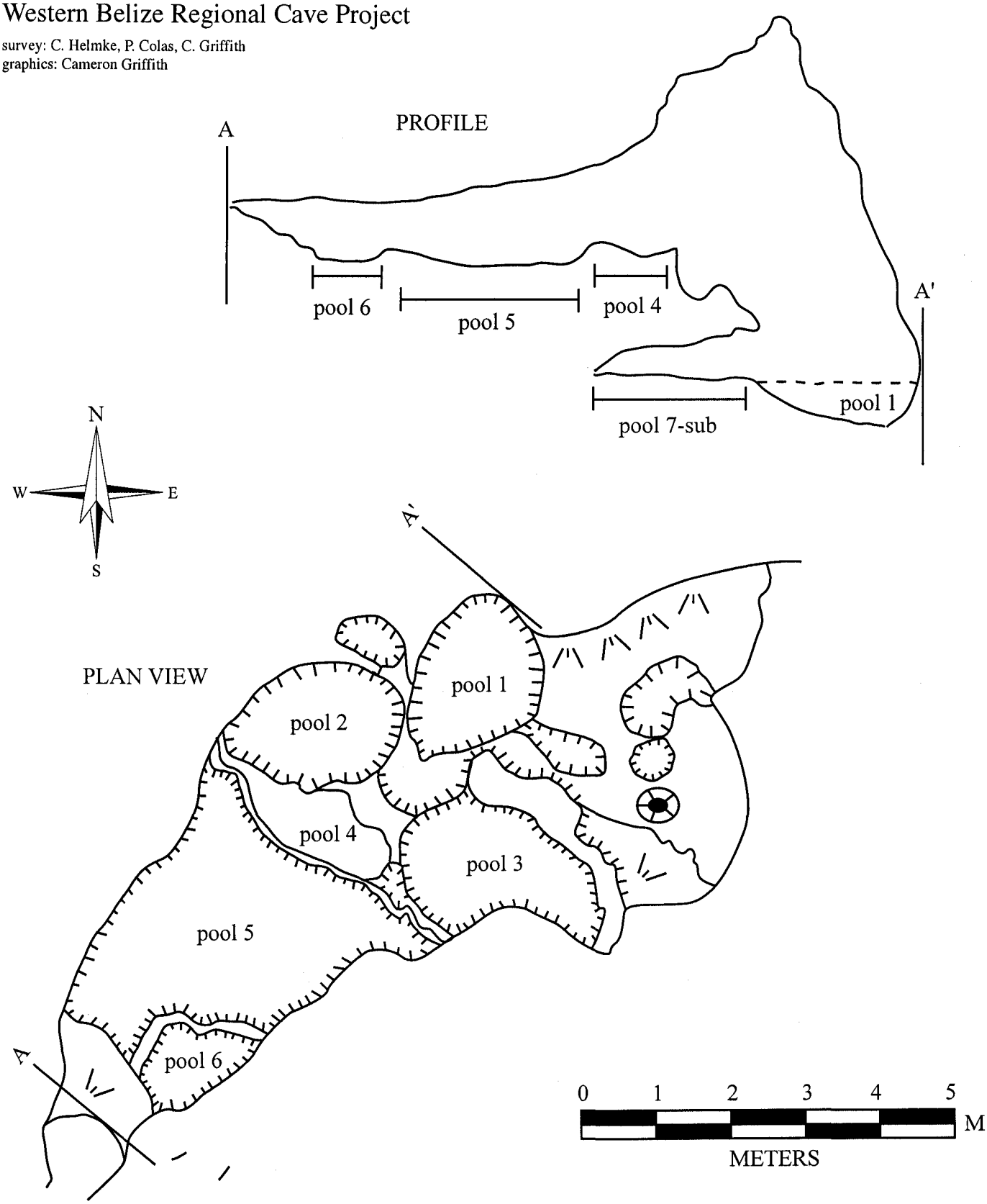


Figure 2. Ledge 1, plan view and profile

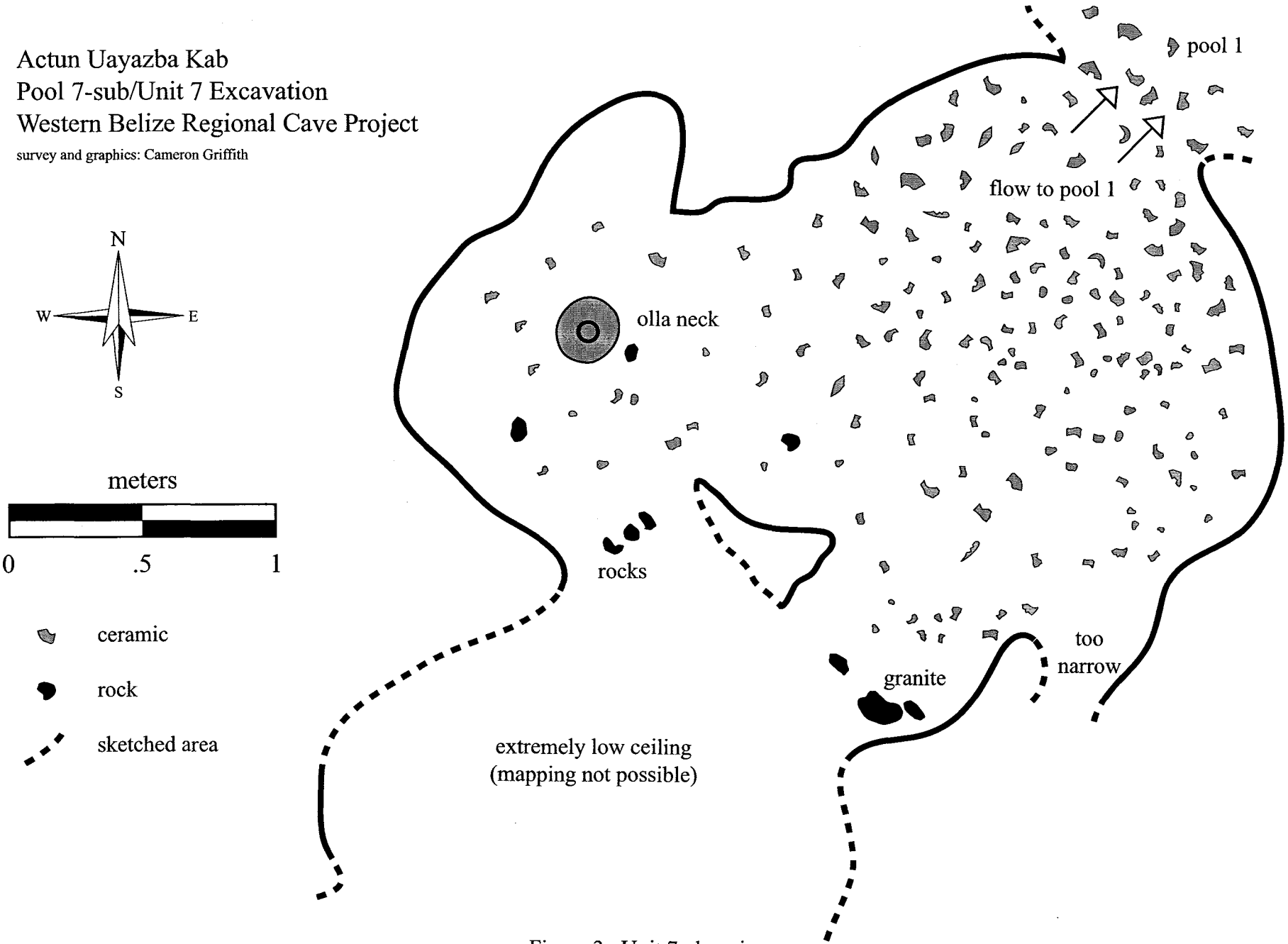


Figure 3. Unit 7 plan view

Actun Uayazba Kab
Unit 14/Pool 4
Western Belize Regional Cave Project

survey: Bayard Russell
graphics: Cameron Griffith

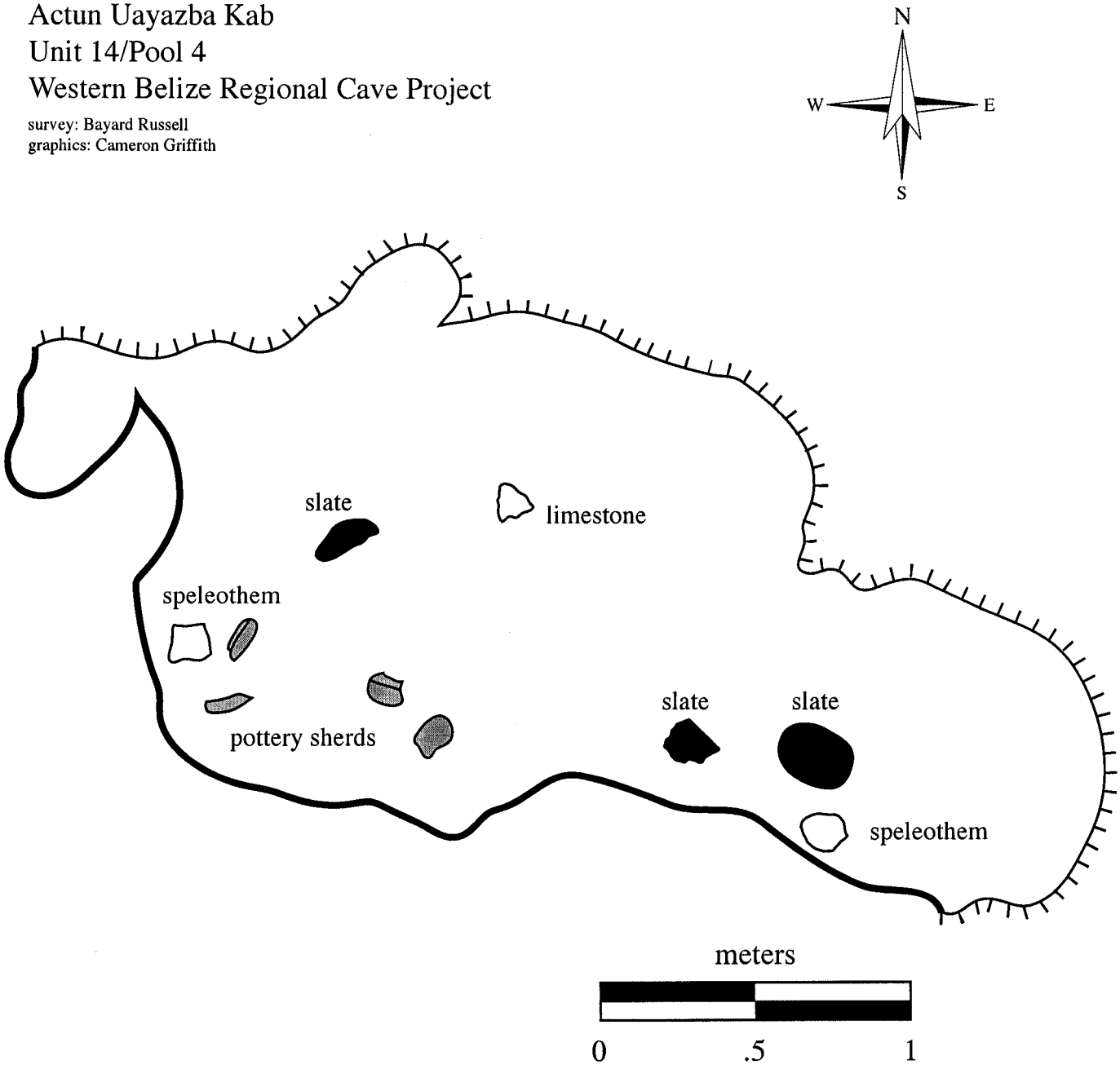


Figure 4. Unit 14 plan view

Excavations were initiated due to the presence of speleothem fragments and slate material resting on the surface of the travertine that were obviously imported to the area. The unit measured 3 X 2.5 meters, conforming to the dimensions of Pool 3. Unit 14 was excavated in one level although the majority of the unit contained little or no matrix atop the travertine surface.

The matrix consisted of brown guano and a few scattered faunal bones. The unit was generally devoid of matrix and excavation descended to a maximum depth of 4 cm, averaging 1cm throughout the pool. A total of 234 ceramic sherds, 4 pieces of miscellaneous lithic material, 8 pieces of slate, 1 piece of limestone, and 2 speleothem fragments were recovered from Unit 14. The pieces of slate recovered from this unit ranged in size from small fragments to fairly large pieces, one of which is a small 'slab' that measures 30 X 20 cm and appears to have been worked. Most of larger pieces also appear to have been modified.

In summary, Unit 14, Pool 3, revealed the presence of numerous potsherds, speleothem fragments, and slate material, all of which were deposited in the area by the ancient Maya. The relative lack of matrix (guano) in Pool 3 may indicate that the water activity in Ledge 1 washes through the pool and deposits it below, perhaps into Pool 1. Two speleothem fragments were found in Unit 14 and, due to the lack of vertical dripwater formations on the ledge, it is certain that these were imported from another location and cached in Ledge 1. The slate material was also transported from another area, and may be representative of an artifact type that was purposely deposited within caves in the region.

Unit 15

Like the other units established in Ledge 1, Unit 15 was defined by the boundaries of a travertine pool, Pool 5 (Fig. 5). Measuring 3.5 X 2.5 meters, Unit 15 is the excavation of the greatest surface area conducted on Ledge 1. Excavations descended to a maximum depth of 15 cm below surface, divided into two arbitrary levels.

Level 1 consisisted of a matrix of dried guano and numerous small faunal bones covered with a layer of light gray calcite. The level covered the entirety of Pool 5 and was terminated at a maximum depth of 7 cm below surface. Level 1 yielded 1067 ceramic sherds, 1 nearly intact olla, 1 modified sherd, 1 lithic flake, 5 obsidian blades, 1 perforated mammal tooth, 2 speleothem fragments, and 2 pieces of modified slate. As seen in Unit 14, imported speleothem fragments and modified slate pieces were located in Unit 15 (Fig. 6). One of the pieces of slate measures 10 X 10 cm and appears to have been worked (Fig.6b). The level also contained a circular sherd that was modified to become an olla lid. This sherd actually fits perfectly as a lid for one of the intact olla rims that was found on the ledge.

Level 2 was defined by a darker matrix that was encountered in a small depression within Pool 5. Travertine was reached at a maximum depth of 15 cm below surface. The matrix within this small depression was a mixture of dark guano and dark brown dirt, which yielded 163 ceramic sherds.

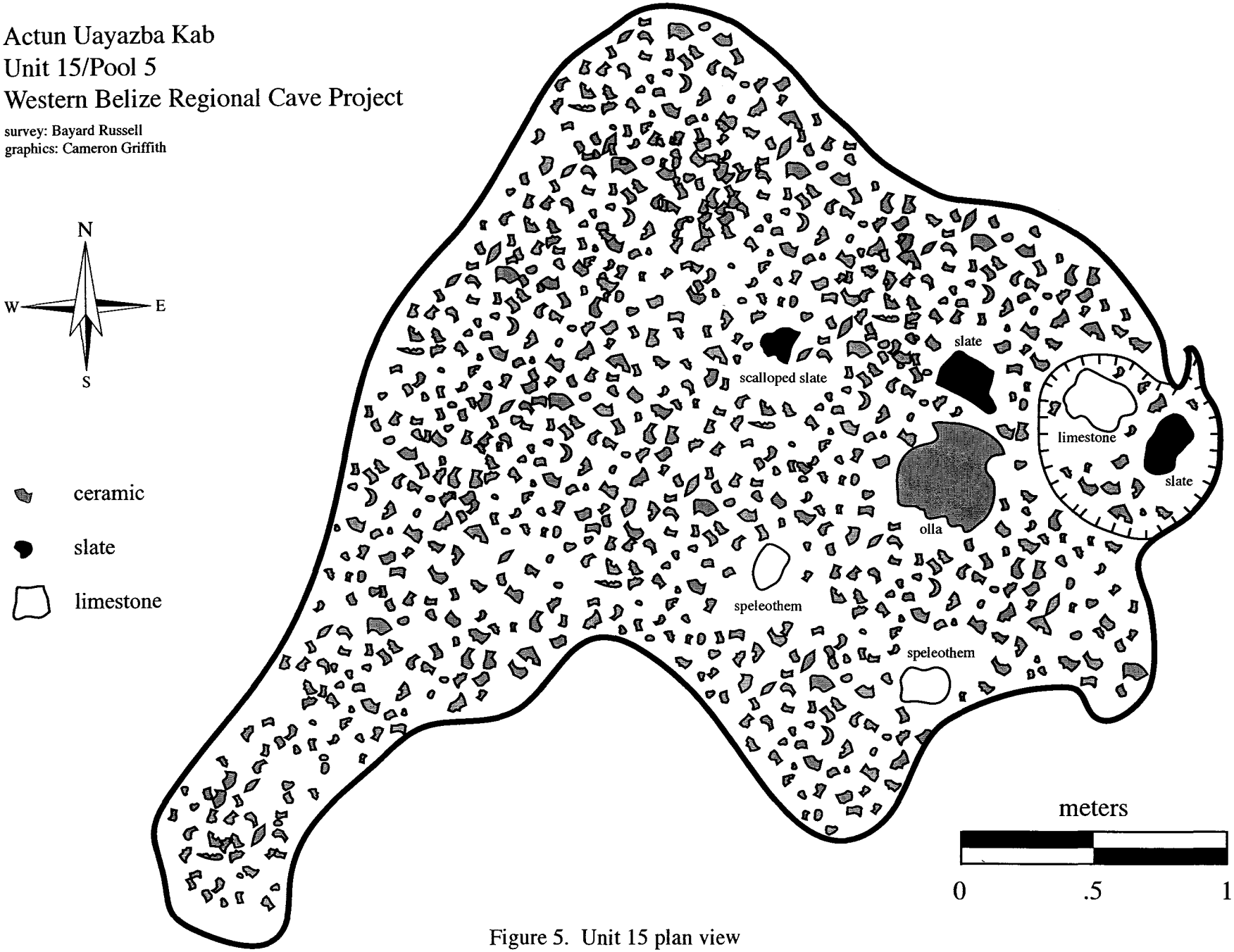
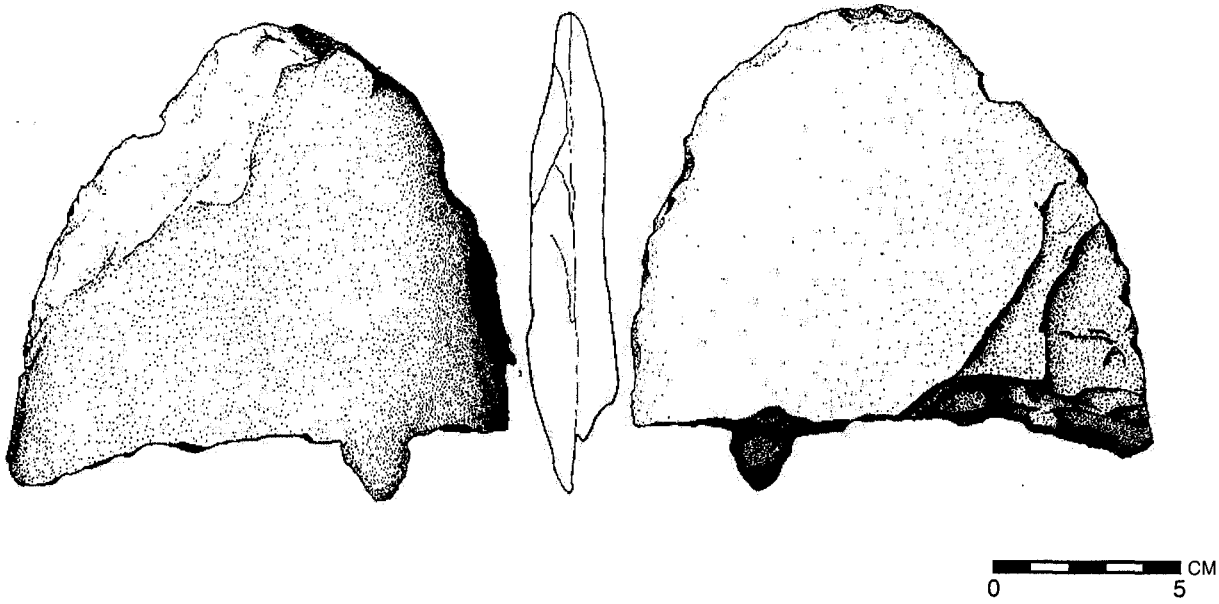


Figure 5. Unit 15 plan view

a) Modified Slate Fragment 1



b) Modified Slate Fragment 2

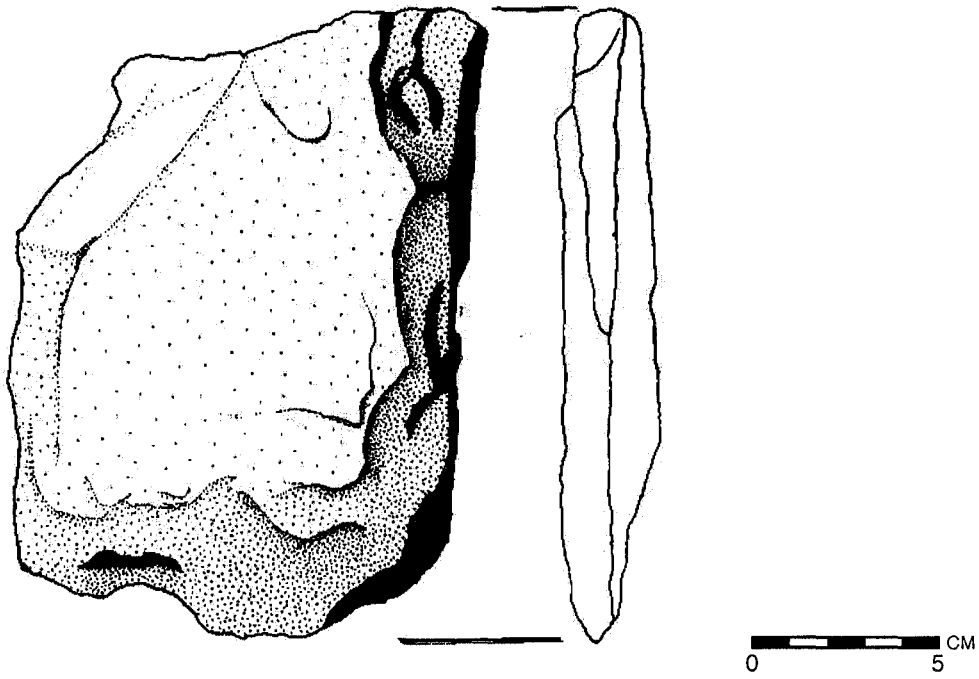


Figure 6. Modified slate fragments, Ledge 1, Actun Uayazba Kab.

Unit 15, Pool 5, yielded numerous ceramic sherds, speleothem fragments, two modified pieces of slate, and obsidian blade fragments. The artifact distribution in Pool 5 is very similar to that of Pool 3 in that each pool contained two speleothem fragments and modified pieces of slate. This artifact assemblage is also reminiscent of that found in several contexts in Actun Tunichil Muknal, Yaxteel Ahau, and Tarantula Cave, suggesting a possible regional and ritual pattern of slate and speleothem utilization in the Roaring Creek Valley of Belize.

OPERATION 4, DARK ZONE

Operation 4 took place in the dark zone of Actun Uayazba Kab in two different loci: The passage leading to the Handprint Chamber and the Sac Tunich Na chamber (Fig. 7). A surface collection was conducted in the passage leading to the Handprint Chamber after a discovery during the mapping of the passage. Sac Tunich Na (white stone house) is a small chamber in the very back of the cave. It is composed primarily of white, sparkling calcium carbonate. Numerous smudge marks appear on the cave walls in this difficult to reach area. Two excavation units were placed in Sac Tunich Na as this chamber represents a morpholgically unique area within the cave.

While the dark zone of the cave was being mapped an interesting find was encountered. A single mammal tooth was found sitting in the center of a small gour pool in the passage leading to the Handprint Chamber. The tooth was encrusted with a thin layer of calcite that was no more than 2 mm thick. The tooth may that of a jaguar or other large feline, yet this is merely speculation as a professional faunal analysis has yet to be conducted. Since large cats are known to frequent cave entrances it is possible that the tooth could have been deposited in this location by natural processes. However, as calcified jaguar remains have been discovered in cultural contexts in nearby Actun Tunichil Muknal, it is more likely that the tooth was a part of the ritual activities performed in the cave by the ancient Maya.

Sac Tunich Na

Sac Tunich Na is a small chamber at the end of the main passage (Fig. 7). The passage leading to this chamber is extremely small and constricted, providing just enough room for human passage. The chamber becomes very bright from even a small light source as the entire area is comprised of off-white and bright white calcium carbonate. The chamber contains a number of dry gour pools and travertine dams, as well as chimney that extends 2 meters into the ceiling. A concave travertine wall beneath the chimney is covered with black smudge marks, which are most likely 'torch tamp' marks, produced by tapping or scraping a torch on the cave wall.

Unit 16

This unit was initiated due to the presence of a tertiary flake of white chert located on the surface of a moist gour pool (Fig. 7). The pool is positioned just below the chimney in Sac Tunich Na and just below the torch tamp marks on the cave wall. The pool contained small flecks and chunks of charcoal. The unit measured 50 X 58 centimeters, conforming to the dimensions of the pool. The unit was dug in two culturally defined levels to a maximum depth of 5 cm below surface.

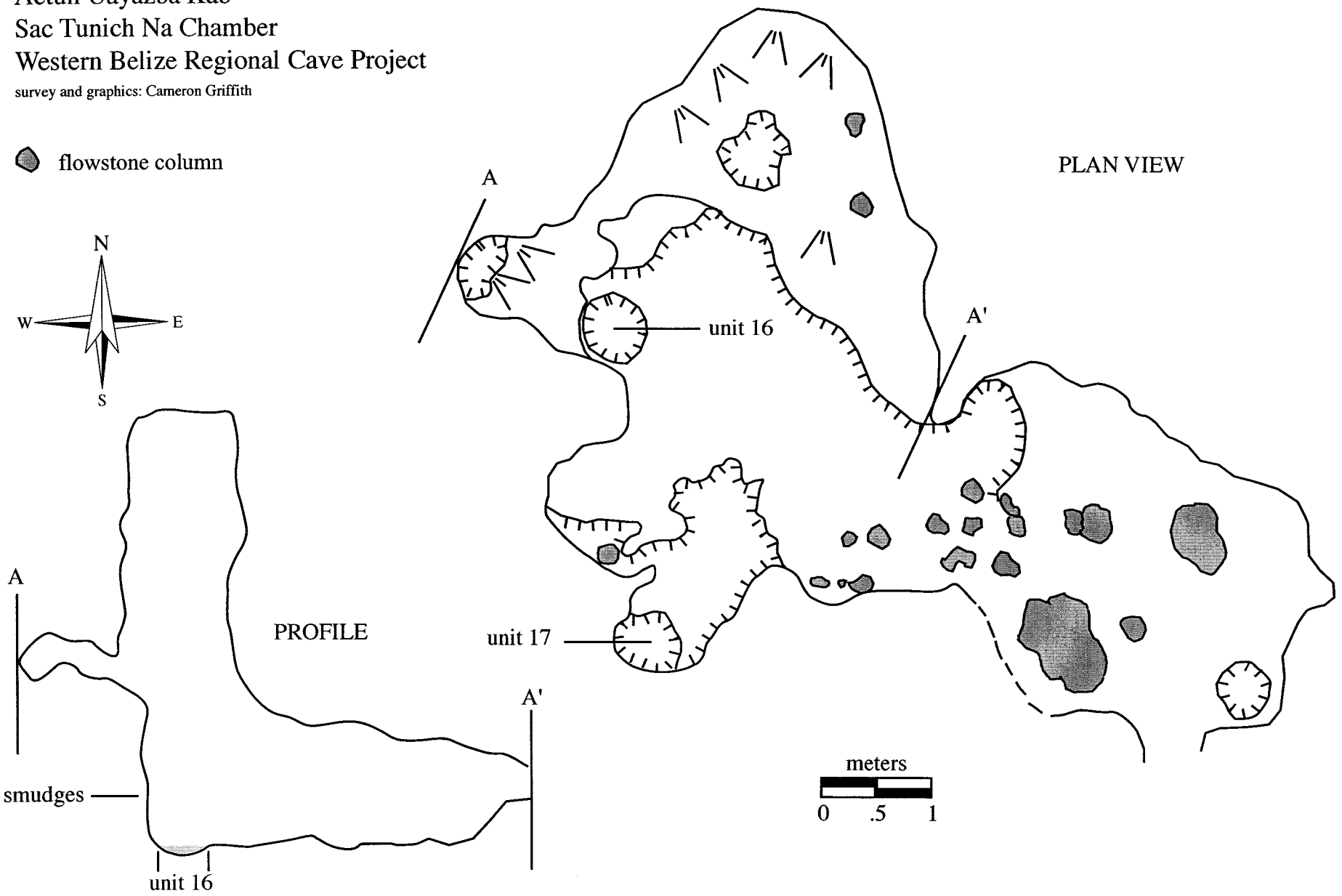


Figure 7. Sac Tunich Na chamber, plan view and profile

Level 1was comprised of a mix of wet mud, charcoal, and flakes of calcium carbonate. At 2 cm below surface this matrix ended, and Level 2 was comprised of a culturally sterile, wet, grey clay matrix. Level 2 extended to only 5 cm below surface. A matrix sample was taken from Level 1, and the only artifact recovered was the aforementioned tertiary lithic flake of white chert.

In summary, Unit 16 was a very shallow unit that yielded little cultural material. The charcoal found in the unit may be the remnants of embers that dropped from torches as the Maya tamped them on the walls of the chamber. The tight passage leading to the chamber exhibited signs of travel that preceded the discovery of the chamber by the WBRCP.

Unit 17

Unit 17 was defined by a small, dry gour pool located in a low squeeze in Sac Tunich Na. The unit measured 50 X 50 cm, although these measurements are approximate due to the asymmetry of the travertine pool (Fig. 7). This unit was begun to provide comparative information to Unit 16, and the particular location was chosen due to the presence of small speleothem fragments on the surface. The area was beautiful and sparkling as a thin blanket of white, crusty calcite covered the pool. Cave grapes adorned the walls close to the surface. The area is a tight squeeze vertically with the ceiling reaching a maximum height of 50 centimeters.

Unit 17 was excavated in one level to a maximum depth of 3 cm. The matrix was a mixture of travertine flakes, small calcite nuggets, and wet clay. 4 small speleothems were recovered, along with one flat piece of wood measuring 9 X 4 cm, and 5 mm thick. Sterile, solid clay terminated the investigation at 3 cm below the surface of the pool.

In summary, Unit 17 yielded very little cultural material. The speleothems were likely imported and placed in the pool, but it is possible that they came from nearby, within the Sac Tunich Na chamber itself. The wood fragment awaits analysis.

DISCUSSION

The 1998 investigations in Actun Uayazba Kab revealed two interesting patterns, one within the cave itself, and one between different caves in the WBRCP research area. The first pattern that became evident was a result of investigations in the Sac Tunich Na chamber. A comparison of this chamber to another chamber in Actun Uayazba Kab, the Mirro Passage (Fig. 8), reveals an interesting difference in the utilization of these areas by the ancient Maya. The second pattern emerged following the investigations in Ledge 1. Comparisons between the artifact assemblage in this area and contexts in other caves provides insight into the use of slate in subterranean contexts by the ancient Maya.

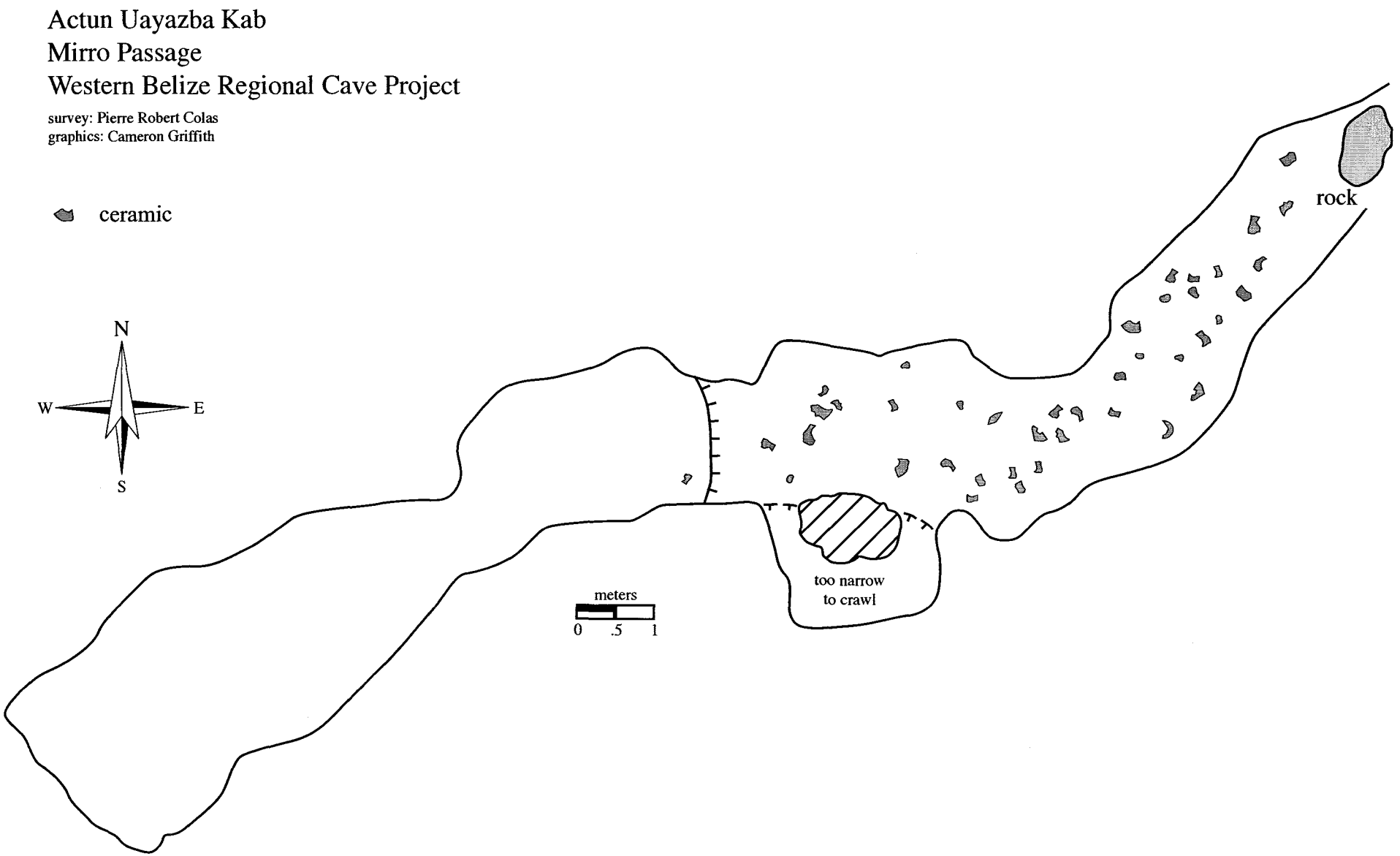


Figure 8. The Mirro Passage

Comparison: Sac Tunich Na and the Mirro Passage

The assemblage of cultural materials found in Sac Tunich Na differs markedly from a morphologically similar area in the cave known as the Mirro Passage (Fig. 8). The Sac Tunich Na chamber is a small, low-ceilinged chamber that is accessed by a narrow, winding passage. One of the unique features of this chamber is the presence of bright, sparkling calcium carbonate that covers the walls and floor of the chamber. Cultural material is limited mainly to black charcoal smudges on the walls, which are sometimes referred to as 'torch tamp' marks. Many of these torch tamp marks appear on the sparkling calcium carbonate just below a natural chimney in the ceiling.

The Mirro Passage is a small, narrow passage that leads into the side of the hill just north of Entrance 1 of Actun Uayazba Kab. The back of the Mirro Passage opens up to a small chamber that measures approximately 6 X 8 meters. The ceiling is low, and there is a small chimney that proceeds up diagonally from the ceiling. The walls in the back of the passage are comprised of dull grey limestone bedrock. The artifact assemblage in the Mirro passage consists of unslipped olla neck and body sherds that protrude from the mix of humus and bat guano. The artifacts appear only in the entrance of the passage, and the back is devoid of cultural material altogether.

Sac Tunich Na and the Mirro Passage are somewhat similar in their morphology. Both are small rooms or chambers at the end of very small, constricted passageways. Both areas have a natural chimney in the ceiling. The main difference between the two areas is that while the walls of the Mirro Passage are dark limestone, the walls of Sac Tunich Na are coated with a layer of sparkling white calcium carbonate. This difference may be the key to understanding one of the features of caves that was particularly important to the ancient Maya. The presence of the sparkling carbonate in the Sac Tunich Na chamber may have made that area prime for a certain type of cave ritual that differed from that enacted in the Mirro Passage.

Unfortunately, because the cave had been looted, we are unable to compare cultural remains from the two areas. Despite this situation, it is interesting to note that not even potsherds were found within the Sac Tunich Na chamber. The absence of potsherds is noteworthy because they are relatively ubiquitous in most every context with evidence of prehistoric Maya activity. Even assuming that looters had removed any possible whole vessel that might have been present in the chamber, one would still expect to find potsherds. Their total absence may therefore suggest that different activities may have taken place within these two areas of Uayazba Kab. Further investigations of other related cave chambers will hopefully allow us to further test this hypothesis.

Comparison: Artifact assemblage of Ledge 1 of Actun Uayazba Kab with those from other caves in western Belize, with a focus on slate material.

Comparisons of the Uayazba Kab Ledge 1 cultural remains with those from other sites in the area suggests that speleothems, and slate artifacts are typically found among the cultural materials deposited within small chambers/ledges in the caves of the Roaring Creek Valley. In Actun Yaxteel Ahau Mirro and Awe (this volume) and Owen and Gibbs (this volume) have noted that small slates artifacts are present in the artifact assemblages within the cave. On Ledge 1 of Yaxteel Ahau slates were found in Chambers 2, 3, 4, and 8, and in the Upper Chamber (Mirro and Awe this volume).

These slate artifacts were found as hearthstones, in the form of beads, and in association with broken speleothems, pottery, charcoal, obsidian blades, jute, and chert. On Ledge 2, Owens and Gibbs (this volume) found a slate chopper, ceramics, human remains and a metate fragment at the entrance to the Phreatic Maze. Deeper within the Phreatic Maze a slate cobble was found in association with a broken speleothem. Investigations on Ledge 5 of Yaxteel Ahau also revealed a slate mirror back (Helmke et al. this volume).

In my investigations of the Upper Entrance Chamber of Actun Tunichil Muknal I surface collected a slate fragment along with several hundred potsherds, human and animal bones, and 187 jute shells (Griffith 1998). Excavations in the same area yielded more ceramics, bone, shell, and two pieces of slate, one of which was crudely worked. The Stela Chamber in Tunichil Muknal also contained two large modified slate monuments, a slate tablet carved with a depiction of Tlaloc, and a small slate "eccentric" (Awe et al. n.d.).

The Stelae Chamber of Tarantula Cave is a small chamber within a complex of breakdown, limestone karst, and flowstone. The Maya used limestone rocks and speleothems to augment the natural features of the cave and create a flat surface, resulting in a small platform. The platform is very crude, and the stones reach a maximum of 4 courses high.

The artifact assemblage from the Stela Chamber in Tarantula Cave includes ceramic sherds, charcoal, speleothem fragments, and a large modified slate monument. It must be noted, however, that only surface collections have been performed in the Tarantula Stela Chamber and that it exhibits signs of heavy looting. Thus it is possible that future work will yield a more diverse assemblage.

Within Uayazba Kab, previous investigations within Entrances 1 and 2 recovered several slates in association with other cultural remains. In Unit 10 of Entrance 2, Ferguson (this volume) found pottery, chert flakes, animal bones, obsidian blade fragments, quartz crystals and pieces of slate. In Unit 13, Level 2 she discovered fragments of slate in association with ceramics, chert flakes, shell, quartz crystals, a stone ball and two obsidian blade fragments. Previous excavations in the Burial Alcove of Uayazba Kab yielded a comparable assemblage of cultural materials in Units 1 and 2 (Griffith 1998). Unit 1 yielded pottery, chert flakes, a shell tinkler, quartz crystals, one fragment of pyrite, one chert uniface, one jadeite fragment, three obsidian blade fragments and two slate pieces. Unit 2 yielded one slate fragment, one chert blade, 3 fragments of pyrite, a conch shell fragment, two speleothems, and ceramic sherds.

The investigations by the WBRCP have also revealed slate artifacts in caves in the Macal Valley. In Actun Chechem Ha six pieces of unmodified slate were discovered among potsherds near the entrance to the cave (Reiko Ishihara, personal communicaiton 1999). In 1982 in Actun Chapat, Jaime Awe (personal communication) also discovered a fragment of a slate mirror back on a terrace in Entrance 2. Beside these few specimens, no other slates have been recovered in any of these sites to date.

The distribution of slate artifacts presented here may likely reflect minor regional differences

in cave artifact assemblages, but confirmation of this pattern must await completion of the research in the Macal Valley. Exploratory trips conducted by Jaime Awe in the Caves Branch and Upper Sibun River Valleys suggest that similar patterns of slate utilization may be reflected in the caves of this region. The range of forms of the slates in this area, however, have yet to be formally documented (Jaime Awe, personal communication, 1999). However, the current corpus of slate artifacts recovered by the WBRCP demonstrates that the purposeful deposition of modified and unmodified slates within caves is a typical pattern in the Roaring Creek and possibly the Caves Branch, Macal, and Sibun Valleys.

CONCLUSION

The 1998 archaeological investigations carried out by the Western Belize Regional Cave project in the cave site of Actun Uayazba Kab have yielded some interesting patterns of ancient Maya cave use. Two areas within the cave, the Sac Tunich Na chamber and the Mirro Passage are similar in their morphology, yet have distinct differences in the cultural material present. The one striking difference in these areas is the presence of brilliant calcium carbonate deposits in Sac Tunich Na. The presence of this material may very well have set the Sac Tunich Na chamber apart from the Mirro Passage with regard to the ritual activies conduced therein. A more thorough analysis of chambers of this ilk will serve as a test of these initial interpretive musings.

Patterns among different caves emerged from the 1998 investigations as well. Multiple caves from the Roaring Creek Valley as well as the Macal Valley have slate artifacts in their artifact assemblages. In two of these caves the slate material comes in the form of large megaltithic monuments possibly associated with agricultural fertility and bloodletting rituals (Awe et al. 1996). The use of slate by the ancient Maya has been previously documented and researched by Maya scholars (Healy et al. 1994) but slate artifacts have only recently been documented in cave contexts.

As more and more Maya caves are investigated in the Maya area, more interesting patterns are likely to appear. Future research may eventually reveal just what it was about certain combinations of features that prompted the ancient Maya to perform specific rituals in particular cave locations. The interpretations and conclusions made in this paper should be regarded as preliminary, and, hopefully, a fledgling step in the right direction.

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AN ALTERNATIVE INTERPRETATION OF MONUMENT 1 IN THE STELAE CHAMBER OF ACTUN TUNICHIL MUKNAL

Cameron Scott Griffith
Indiana University

INTRODUCTION

It is well established that the ancient Maya practiced ritual autosacrifice in the form of bloodletting, and cave sites were one of the places where these rites were conducted (Brady 1989). Several Mayanists (Awe 1998, Bassie-Sweet 1996, Brady 1989) have also argued, based on ethnographic, ethnohistoric, and archaeological information, that the ceremonies performed within caves were related to agricultural fertility rituals. Many of these interpretations have been based on the association between caves and Chac, the rain god. The argument being that since the Maya believed that Chac lived in a cave, rituals performed within caves were designed to please or appease Chac, as one of the primary concerns was having enough rain, or not too much, for successful agriculture. Other interpretations have been based on the association with blood and corn in Maya mythology (Tedlock 1985). Bassie-Sweet (1996) has argued that the Maya believed that Chac retrieved the first corn from the bowels of a rock inside a cave.

The initial interpretation of the monuments in the Stelae Chamber in Actun Tunichil Muknal suggested that both were carved to resemble bloodletting instruments, specifically an obsidian bloodletter and a stingray spine (Awe, et al. 1996). The interpretation that Monument 1 (Fig. 1) resembled a stingray spine was based on the form of the stela, and because of similarities between the Tunichil monument and sculpture (CPN 15031) from Str. 8L-74 at Copan, which was interpreted as depicting a stingray-spine bloodletter (Ashmore 1991: Figure 6). However, stingray spines were not recovered from the Stelae Chamber. Nonetheless, it has not escaped the attention of the author that stingray spines might not survive a post-bloodletting ritual burning episode or the forces of time.

CORN, CAVES, AND CHAC

Many iconographic representations of maize seem to suggest a different interpretation of the monuments that may solidify the hypothesis that certain ceremonies performed in caves were autosacrificial bloodletting rituals related to agricultural fertility. Karl Taube, in his seminal work on the Olmec Maize God (Taube 1996), assembled many images of the maize plant from Olmec iconography. These different representations highlight various features of the maize plant (Fig. 2). In many cases the leaves and husk are shown (Fig. 2, a, c, d). In some cases the images are merely stylized cobs (Fig. 2, b) and in these cases the corn cob is vertical, and sometimes appears to be stuck in, or emerging from, the ground. Some representations portray the kernels of corn on the cob (Fig. 2, c, e) and the scalloped pattern atop some of these elaborate designs may represent this as well (Fig. 2, a).

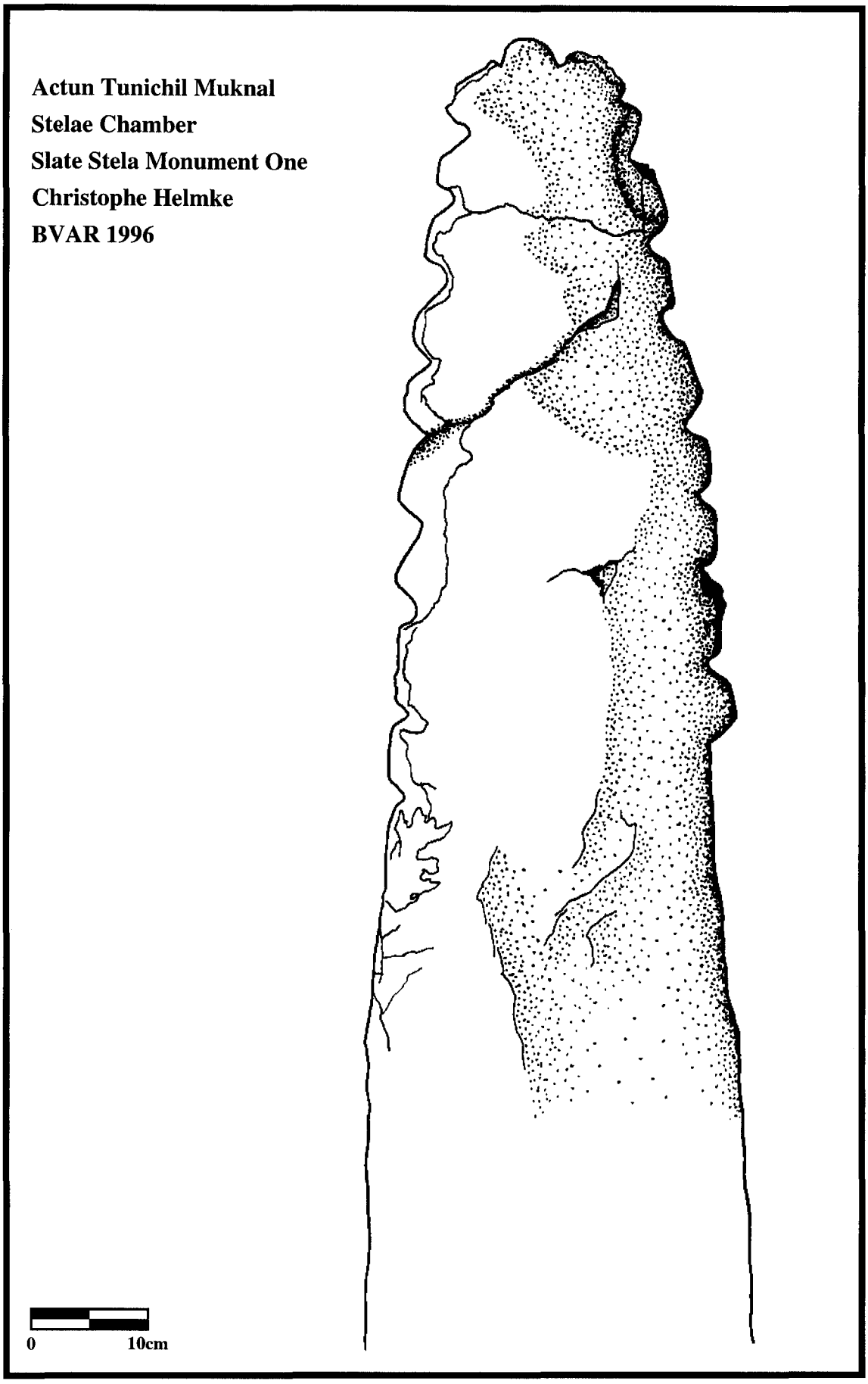
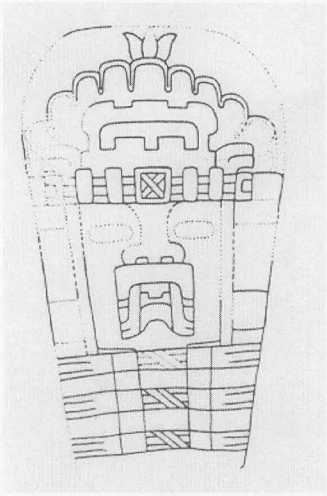


Figure 1. Possible monumental representation of corn cob

Iconographic representations of Maize



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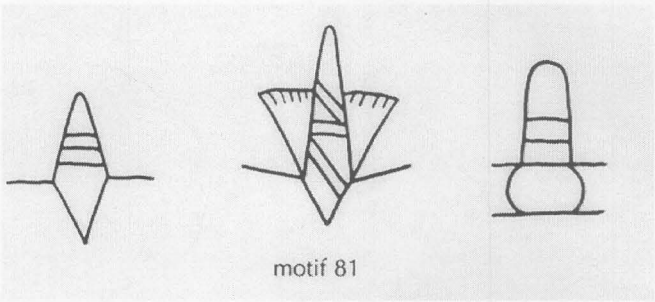

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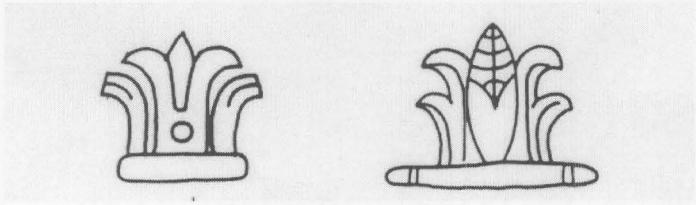

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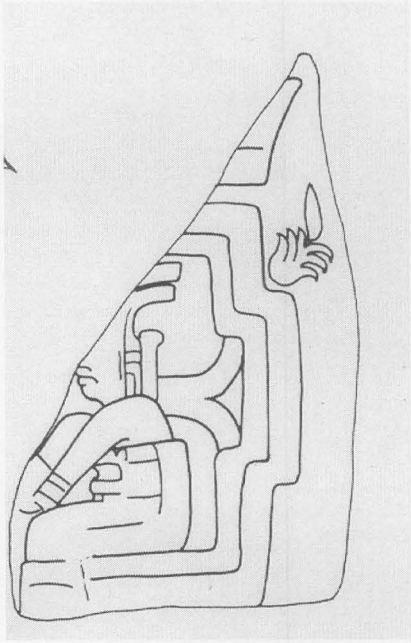

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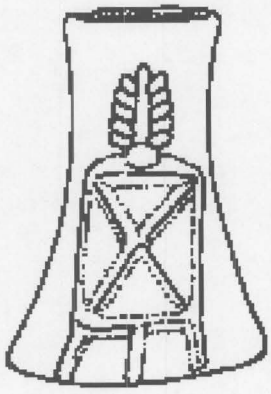

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Figure 2. Maize images (after Taube 1996)

Page 103 from the Madrid Codex, known as the "beekeeping" records (Sharer 1995) depicts Chac, the rain god, in a number of scenes. In one particular scene Chac is holding a personified version of maize in his hand (Fig. 3).

The offering that Chac is making is iconically identical in the scene and in the corresponding text that appears above the scene. Thus, the offering can be read as a collocation, or a cluster of glyphic elements. In the text the glyphs carry a phonetic value while in the scene these are used primarily as iconic markers that carry semantic values. Hence the stacked design in the scene is relatively elaborate when compared to the abridged representation in the text that lacks the spiked & pointed corn element (Christophe Helmke, personal communication, 1999)..

The offering in front of Chac may be read in several ways. The spikey object in front of Chac has an infixed Kan symbol, which is a logograph for Corn. It also appears that the spikes on the object may be designed to represent Maize kernels on a cob (Fig. 3). If, however, the Kan symbols are phonetic elements (T506), the Kan glyph carries the phonetic value "wa." The element at the bottom of the offering stack may be a phonetic "hu" suffix (Fox, in Sharer, 1995). Therefore, taking the three Kan symbols to be "ox" (3) as a prefix, and coupling this with the other phonetic elements, the following transcription is reached: "ox-wa-hu." The final "h-" sound is intensified because "h(u)" is represented (disharmony) as opposed to an expected "h(a)" (common synharmony). Following the principle of disharmony, the resulting transcription is "ox-wah" (all phonetic information stems from Christophe Helmke, personal communication, 1999).

"Wah" is glossed as follows:

Tortilla	Lacandon	wah	(1946:1125)
Tortilla	Tojolabal	waH	(1931; "H is an intensified h-sound")
Tortilla	Tojolabal	waH	(1927; "H is an intensified h-sound")
Tortilla	Jacaltec	ishim wah	(1966)
Tortilla	Quiche	wah	(1971b:204)

Additional entries for T-506 are as follows:

bobo_wah:	tamal de elote	[CHO:Schumann 1973]
c'ok_ixim_wah:	tortilla de maiz tierno	[CHO:Schumann 1973]
cu-cuy-_wah:	tamal de olote	[CHO:Schumann 1973]
kaxlan-wah:	Tortilla	[CHO:Dienhart 1998]
kaxlan_wah:	Tortilla	[CHO:Dienhart 1998]
pek-wah:	Tortilla	[YUC:Dienhart 1998]
pekwah:	Tortilla	[YUC:Dienhart 1998]
wah:	Tortilla	[CHO:Dienhart 1998]
wah:	Tortilla	[YUC:Dienhart 1998]
wahkian:	CORN:ear/elote	[CHO:Dienhart 1998]
wahtyan:	CORN:ear/elote	[CHO:Dienhart 1998]

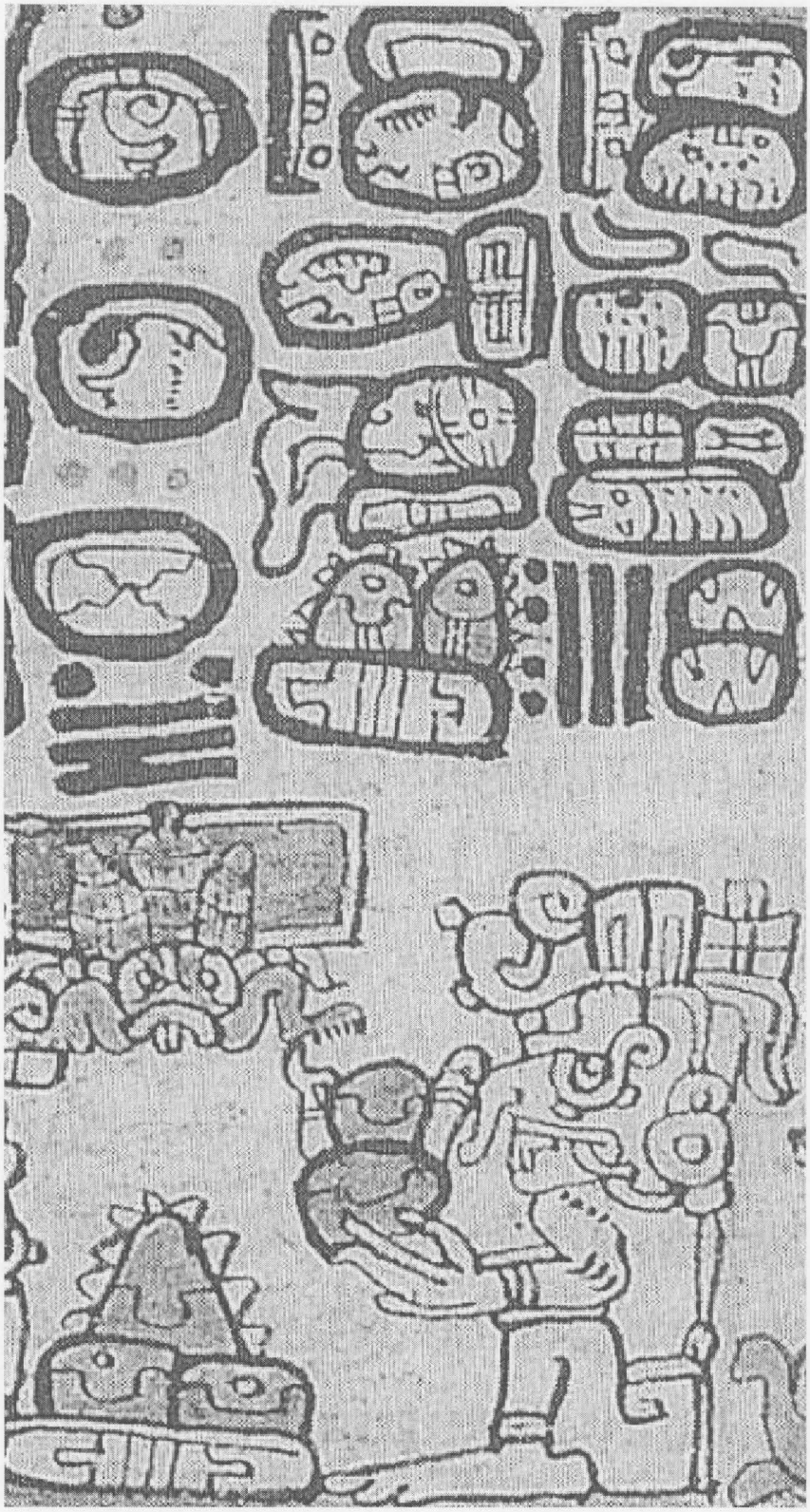

Figure 3. Madrid Codex p. 103, scene 2 (after Sharer 1995). Chac is shown holding a personified version of corn in his hand. The spikey object in front of Chac has an infixed 'Kan' symbol, a logograph for corn. The iconographic similarity of the object to slate monument #1 in Actun Tunichil Muknal should also be noted.

Thus, the collocation from the text in the Madrid Codex, and the offering in the scene may be read as "Ox-waH," meaning three tortillas, or three offerings of corn tortillas. It is interesting to note that much of the early Olmec maize iconography uses three celts to depict three green ears of corn. The remainder of the text has further information that is pertinent to maize fertility rituals in caves, specifically a "darkened Imix" semblant in the text that may refer to 'first corn' and which ties in to the iconography of the scene (Christophe Helmke, personal communication, 1999). However, the text is still largely undeciphered.

CONCLUSION

The spikey Maize image in the Madrid Codex and the Scalloped Slate monument from Actun Tunichil Muknal are somewhat similar in their appearance. The association of Maize and Chac has been argued by previous researchers as evidence that many of the rituals in caves were specifically related to Maize fertility (cf. Awe 1998, Brady 1989). Based on these issues and the iconographic and epigraphic information presented above, I propose that Monument 2 was intended to represent an ear of corn.

The obsidian bloodletters at the base of the monument configuration in the stelae chamber of Actun Tunichil Muknal, as well as the similarity in appearance of Monument 2 to an obsidian bloodletter, suggest that bloodletting rituals were conducted in this chamber (Awe et al. 1996). The alternative interpretation of Monument 1 as a representation of a corn cob does not by any means refute or otherwise change the initial interpretations proposed by Awe et al. regarding the significance and ritual function of the chamber and its slate monuments. To the contrary, it merely strengthens the argument. The combination of bloodletting instruments and a slate monument modified to possibly represent a maize plant in Actun Tunichil Muknal substantiates previous claims that one of the rituals conducted in ancient Maya caves was autosacrifice for maize fertility.

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REPORT ON THE 1998 EXCAVATIONS AT ACTUN UAYAZBA KAB, ROARING CREEK VALLEY, BELIZE

Josalyn M. Ferguson
University at Albany (SUNY)

Burial Appendices

Sherry Gibbs
Trent University

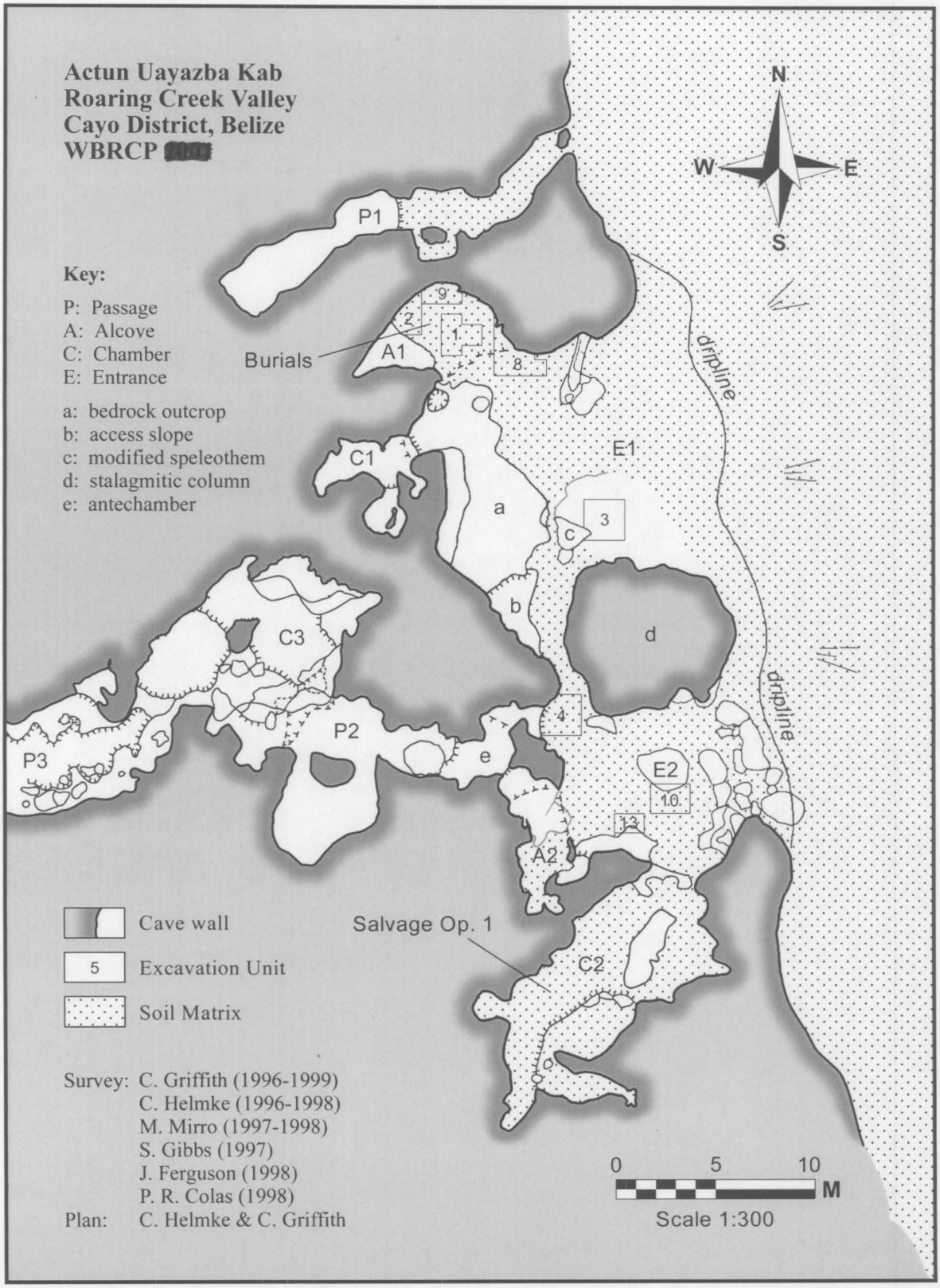
INTRODUCTION

The 1998 field season made investigators acutely aware that looting activities in both the Burial Alcove and Entrance 2 of Actun Uayazba Kab had continued during the off season. As a result, the investigations conducted at Actun Uayazba Kab in 1998 (see Griffith, and Mirro this volume) included salvage excavations (Operation 1) that were initiated to determine what types of data had been affected by looters, the extent of damage, and to salvage any surviving deposits. This paper summarizes the preliminary results of the salvage excavations in the Burial Alcove and Entrance 2.

METHODOLOGY

Four excavation units, two in the Burial Alcove and two in Entrance 2, were established within Actun Uayazba Kab during the 1998 field season (Figure 1). One of the units in the Burial Alcove (Unit 8), was extended in order to facilitate the excavation of a burial (Burial 98-2). Units were numbered sequentially, continuing from those established during the previous field season, and coordinated with operations being concurrently conducted elsewhere at Actun Uayazba Kab. Unit locations were selected to encompass areas of new and expanded looters pits, and to include adjacent areas with potentially undisturbed deposits. Matrices were generally screened with 1/4 inch mesh, but where appropriate, burial matrices were screened through a kitchen strainer with 1/16 inch mesh. Excavations employed cultural, natural, and arbitrary levels as required. Datums were established for all excavation units. Depth measurements were taken at the beginning and end of each level, and upon the exposure of human remains or architecture.

Ceramic, lithic, faunal, and shell artifacts, speleothems and daub, plus matrix samples were collected where appropriate. The speleothems collected were found in cultural matrices, or when it could be determined that speleothems were present as a result of human activity (i.e. in areas where speleothems do not naturally occur). Human remains were initially analyzed in situ, followed by more detailed analyses in the project lab (see Appendix 2). All burial and architectural features revealed during excavation were photographed and mapped. Detailed faunal and ceramic analysis had not commenced at the time of this report. Preliminary ceramic analysis suggests that the deposits recovered range in date from the Terminal Formative to the Terminal Classic period (Gibbs 1998:58).


Actun Uayazba Kab
Roaring Creek Valley
Cayo District, Belize
WBRCP [redacted]
Key:
P: Passage
A: Alcove
C: Chamber
E: Entrance
a: bedrock outcrop
b: access slope
c: modified speleothem
d: stalagmitic column
e: antechamber
N
W
E
S
P1
Burials
A1
C1
C3
P2
P3
E1
E2
A2
C2
dripline
dripline
Salvage Op. 1
Cave wall
Excavation Unit
Soil Matrix
Survey: C. Griffith (1996-1999)
C. Helmke (1996-1998)
M. Mirro (1997-1998)
S. Gibbs (1997)
J. Ferguson (1998)
P. R. Colas (1998)
Plan: C. Helmke & C. Griffith
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EXCAVATIONS

Burial Alcove

Excavations in the Burial Alcove were originally initiated solely as salvage operations, and were thus intended to focus only on defining the looters pits, and recovering any associated but displaced cultural materials. Units 8 and 9 were established to encompass looters pits identified during the 1997 field season (LP2 and LP9) and that were enlarged in the interim period. Initial examination of the area suggested that the looter(s) attempted to hide their work by partially backfilling the pits. To make a clear distinction in documentation, the matrices removed in these operations were excavated by levels designated as disturbed (i.e., Level 1 - dist.). It became apparent, however, that the looting activities were not as expansive or damaging as originally thought, and thus excavations were able to expose in situ deposits. The excavations uncovered 7 human burials, including one infant, two adult females, two juveniles, one adult of indeterminate sex, and one burial that could not be excavated due to time constraints. Excavations were therefore expanded to encompass the remaining in situ deposits of both Units 8 and 9. An extension unit, measuring .85x.6 metres, was established off of the eastern edge of Unit 8 in order to completely expose Burial 98-2.

A 5 metre long east-west base line used in 1997 was re-established between datums UK9 and UK10 to permit data from 1997 to be coordinated with information from the 1998 season. Other previously established datums (UK 7, 9, 10 and 11) were also utilized. The units were established in relation to the baseline. The southern unit walls measured 2 metres along an east-west axis parallel to the baseline but since the northern extremes of the units followed the cave wall, the eastern, northern and western unit walls were not uniform. Since the cave wall has an undercut not visible at surface level, the unit dimensions changed as excavations progressed. Other datums were established for recording elevations in each unit, and were tied into datum UK7, for cross referencing. UK 7 was located at the entrance to the Burial Alcove, 21 cm above ground level.

Unit 8 and Unit 8 -Extension

Unit 8 was initiated to encompass the looter's pit previously designated as LP9. LP 9's more recent looting episode was distinct from that identified during the 1997 field season, and thus the salvage excavations associated with Unit 8 were divided into sections A (1997) and B (1998) (Figure 2). The original looter's pit identified in 1997 encompassed portions of both Sections A and B. The more recent looting activities, however, did not expand on the original pit, but dug deeper into previously undisturbed contexts in the area adjacent to the north cave wall. The lengths of the unit walls were: west, approximately 2.60 m; south 2 m; east, approximately 1.2 m. Datum UK9 (situated at the base of a cluster of boulders, 1 cm above surface level, and 20 cm below UK7), was utilized for Unit 8 elevations.

Salvage operations in Unit 8 began with a surface collection of visible artifacts (see Appendix 1 for a detailed outline of materials collected). Following this collection, the edges of the looter's pit were defined, and a distinction between Sections A and B was made through the removal of disturbed matrices. This level was designated as Level 1-dist. It consisted of a light tan coloured, loose, dry matrix, consistent with that of looter's backdirt throughout the Actun Uayazba Kab salvage operations.

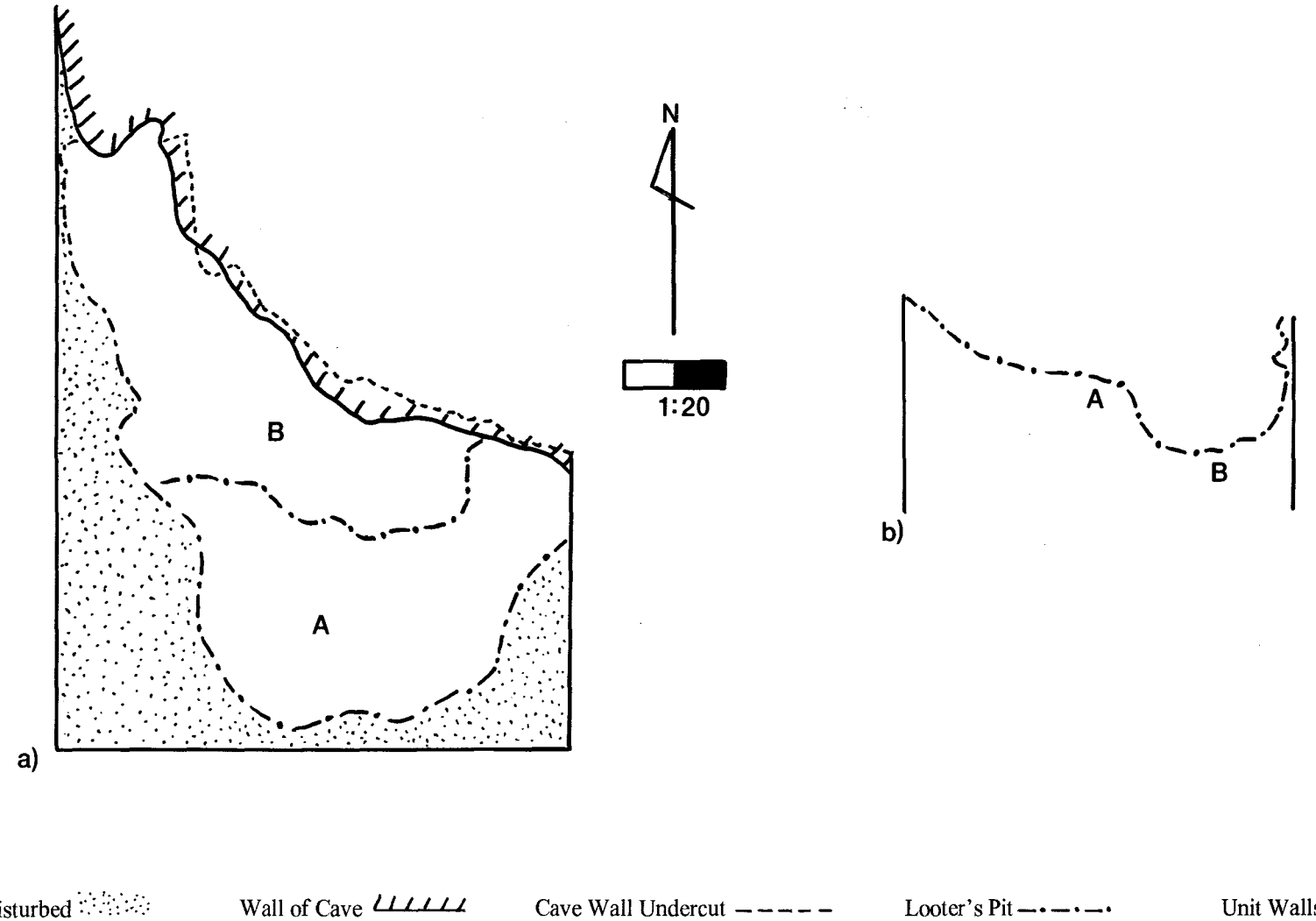


Figure 2. a) Top Plan of Unit 8 indicating Extent of Looter's Pit, Sections A (old) and B (new). b) Unit 8 Bisect of Looter's Pit.

Artifacts were more numerous in Section B and central areas of both sections, and as the excavators moved from west to east, the frequency of artifacts in both sections decreased. Materials collected in the Level 1-dist. consisted of ceramics, lithic materials, and faunal remains(see Appendix 1). This level was terminated when both sections of the looter's pits (Sections A and B) were completely defined, and upon the identification of a change in soil colouration and compactness below the disturbed soils. The level ranged between 0 and 10.5 cm dbd in Section A, and between 21.5 and 38 cm dbd in Section B

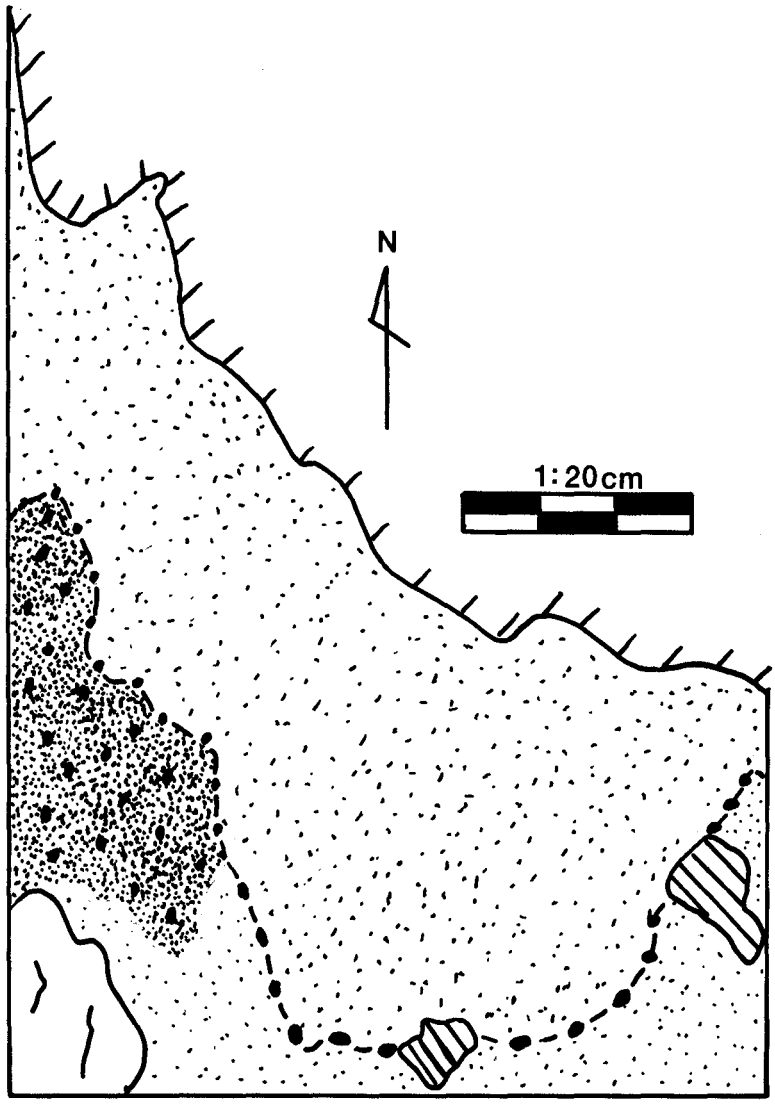
Level 1 (also considered as salvage context) consisted of the remaining undisturbed area encompassed by Unit 8, mostly to the southwest and southeast of the looters pit (see Figure 2). The matrix associated with Level 1 was similar to that elsewhere in the unit, but was more compact. Some artifacts and soils closest to the surface did, however, exhibit charring likely associated with a nearby campfire. Level 1 was terminated upon detection of a dense white matrix horizon, comprised of pebbles and limestone, indicative of a plaster floor (Floor 1). Since Floor 1 was not uniform across the undisturbed area of the unit, some matrices associated with Level 2 were inadvertently removed with Level 1, and thus depth measurements extend beyond the actual depth of Floor 1.

Due to the differential preservation of Floor 1 throughout the area being excavated, Level 1 reached a maximum centre depth of 47 cm dbd. However, Floor 1 was reached at a depth of 27 cm dbd in the east, and 32.5 cm dbd in the western area. Level 1 ranged between 4 and 12.5 cm thick. Materials collected from Level 1 included ceramic sherds, lithic objects, faunal and shell specimens, one human bone, speleothems and a quartz crystal (see Appendix 1).

Floor 1 (Level 2) was poorly preserved and could be detected in only three areas (see Figure 3). Throughout most of the undisturbed area of the unit, however, fill typical of flooring episodes was detected approximately 5 cm below the remnants of the floor surface (ballast and core). The matrix below Floor 1 was littered with ceramic sherds and jute shells, as well as other artifacts (see Appendix 1). Level 2 was terminated upon detection of a second plaster floor (Floor 2).

Floor 2 (Level 3) was exposed in the southwest area of the unit at a depth of 40 cm dbd, but was only detectable in the eastern area of the unit through its associated ballast fill. Unit 8-Ext. exposed a better preserved section of Floor 2 (see Figure 4). The matrix associated with Level 3 was consistent with flooring episodes, including plaster, ballast fill, and slightly larger core fill. The soil around the area of the poorly preserved floor was a lighter colour than that detected elsewhere in the unit, due to the deterioration of the plaster. Unfortunately, the fill of Floor 2 is virtually indistinguishable from that of the later Floor 1.

To some extent, Level 3 was somewhat arbitrarily designated since it was impossible to distinguish between the Level 2 and Level 3 ballast layer. Thus, Level 3 was terminated at a depth where the ballast fill was the most uniform across the unit, and at a level that would be more or less at the same depth as the Section A area of the looter's pit, between 48 and 56.5 cm dbd. Artifacts were again more plentiful in the western portion of the unit, than in the east (see Appendix 1). It became apparent later on in our investigations that Floors 1 and 2 were partly destroyed by the Maya to facilitate the interment of 5 individuals within the area of Unit 8.



Plaster Surface

Undisturbed Matrix

Rock

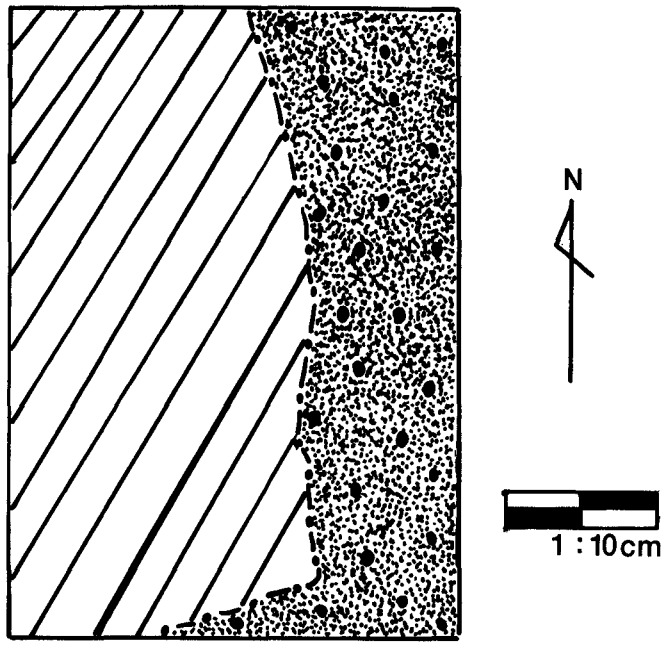
Ballast/Dirt Fill

Edge of Looter's Pit

Unit Wall

Cave Wall

Figure 3. a) Top Plan of Unit 8, Level 2, Floor 1, Illustrating Areas of Preserved Plaster.



Ballast/Dirt Fill Plaster Surface Edge of Looter's Pit Unit Wall

Figure 4. Top Plan of Unit 8-Extension, Level 2, Floor 1.

The soil associated with Level 4 consisted of a similarly brown loose soil with 10-15 cm rocks intermittently dispersed throughout. At a depth of 65 cm dbd in the southwest quadrant of the unit, a collection of roughly north-south aligned rocks were encountered (see Figure 5). Unarticulated, solitary bones were also scattered amongst the rocks, including thin skull fragments, a mandible and a fragment of a very small innominate bone. One of the rocks was inadvertently moved, revealing a more or less articulated skeleton, and an associated obsidian blade and rim sherd. Evidently the rocks were a form of burial marker for a simple pit, designated Burial 98-6. The remains in the burial pit were those of a human infant. Upon full exposure of the skeletal remains (see Figure 6), we were able to determine that the individual was in a prone, flexed-fetal position with its hands placed below the pelvis, and the head located to the southeast. Additional artifacts found in proximity to the burial included a collection of jute shells, several quartz crystals, ceramic sherds, and several animal bones. A chert blade was recovered from between the legs of the individual. The soil in which the burial was found included carbon flecks, and was a dry, loose dirt. These matrices were carefully screened through a kitchen sieve and by hand. Unfortunately, the analysis of these skeletal remains were not completed at the time of publication.

A second cluster of rocks was encountered along the eastern wall of Unit 8 (see Figure 5), approximately 65-70 cm east of Burial 98-6. The cluster of predominantly limestone rocks extended westward into the unit for approximately 55 cm, and extended the length of most of the unit's eastern wall. Jute shells were found strewn throughout the dirt in the area of the rock cluster, as was a mano, ceramic sherds and animal bone. The discovery of human bone associated with these rocks suggests that the construction was in fact a partial burial crypt (Burial 98-2). The crypt was designated a partial crypt, as no uprights were incorporated in its construction. The north side of the body, however, was bordered by a crude alignment of large rocks, which were then capped by an assortment of large limestone rocks, river cobbles, and even a 38 x 28 cm speleothem. Burial 98-1 (Unit 9) also had a crude alignment of rocks solely bordering the northern side of the body, in addition to the inclusion of uprights within the construction of its simple crypt.

Unfortunately, Burial 98-2 exceeded the confines of Unit 8, and thus an extension unit (Unit 8-Ext) was initiated. Unit 8-Ext. extended 60 cm east of the unit's eastern wall, and 85 cm north of the east-west baseline. This area was not as disturbed as that of Unit 8. Artifacts found in this area and designated as special finds included several obsidian blade fragments, quartz crystals, a drilled fishtail-like obsidian eccentric, a conch shell fragment, a polychrome basal flange sherd, and a modified crystal prism. A 15 x 18 cm concentration of ceramics was unearthed at a depth between 46 and 51 cm dbd, directly above and the area of the crypt containing the cranium.

Burial 98-2 was located at a depth between 41 cm dbd and 99 cm dbd. With the exception of the skull, which apparently had been smashed by the weight of the cap stone, the bones were in a very good state of preservation (Figure 7). Analysis of the skeletal remains found that Burial 98-2 was a primary interment of an adult woman, approximately 20 years of age (see Appendix 2). The body was laid in a prone, semi-fetal position (flexed at the knees), with hands crossed at the pelvis, and head facing northeast. Burial 98-6 and 98-2 occur at similar depths, 77 cm dbd and 73 cm dbd, respectively, and were in similar flexed, semi-fetal, prone positions, with their hands crossed at the pelvis.

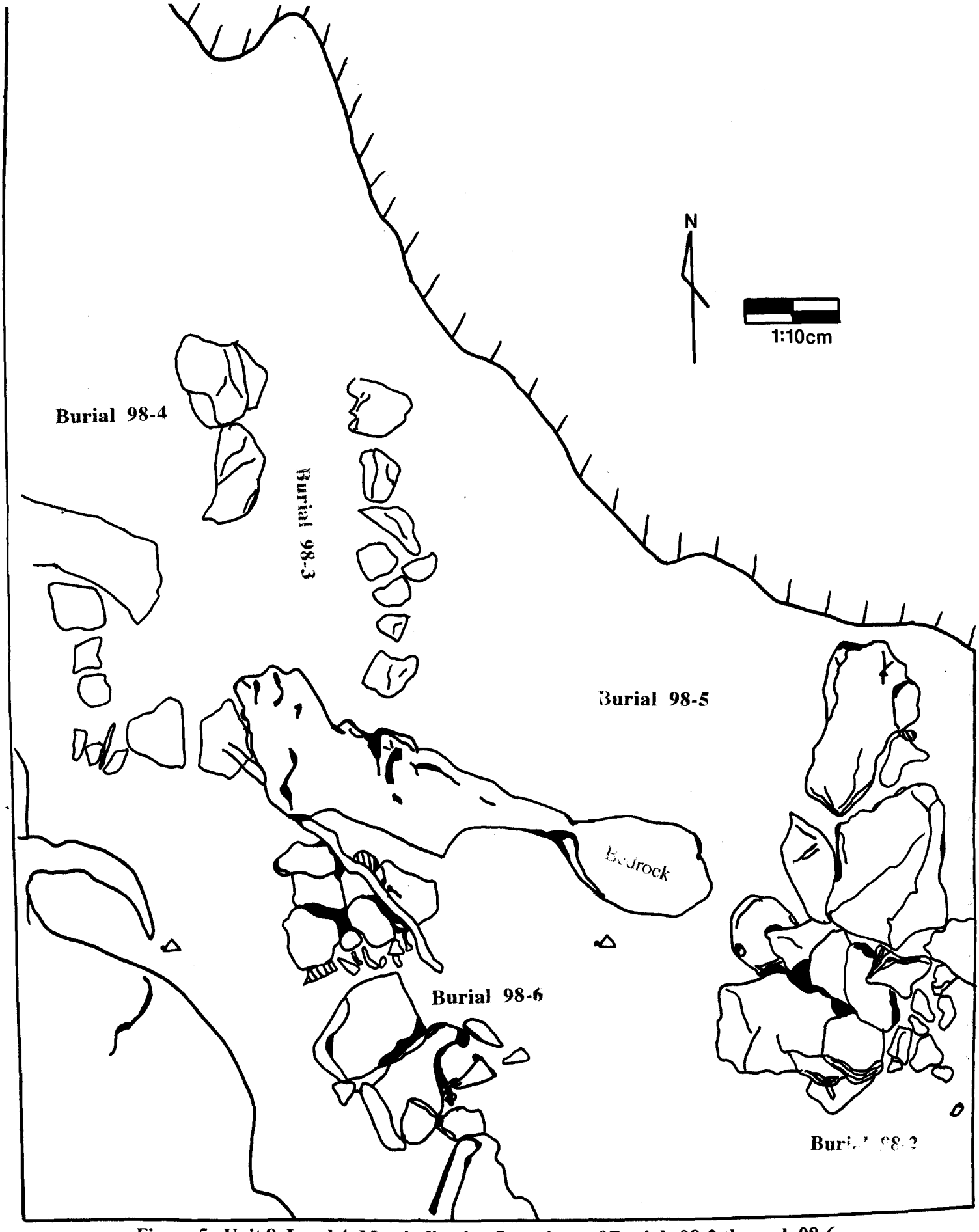


Figure 5. Unit 8, Level 4, Map indicating Locations of Burials 98-2 through 98-6.

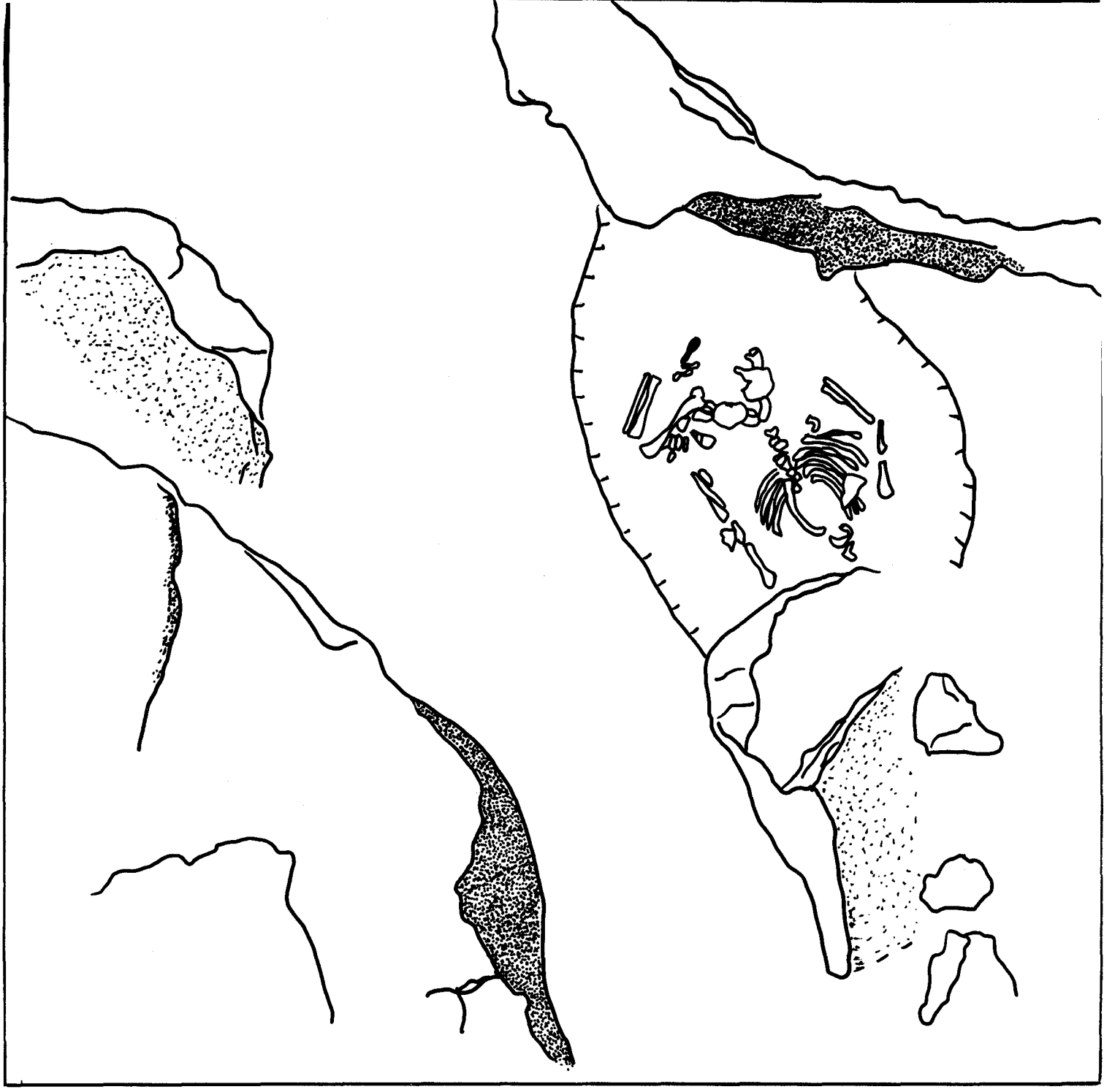
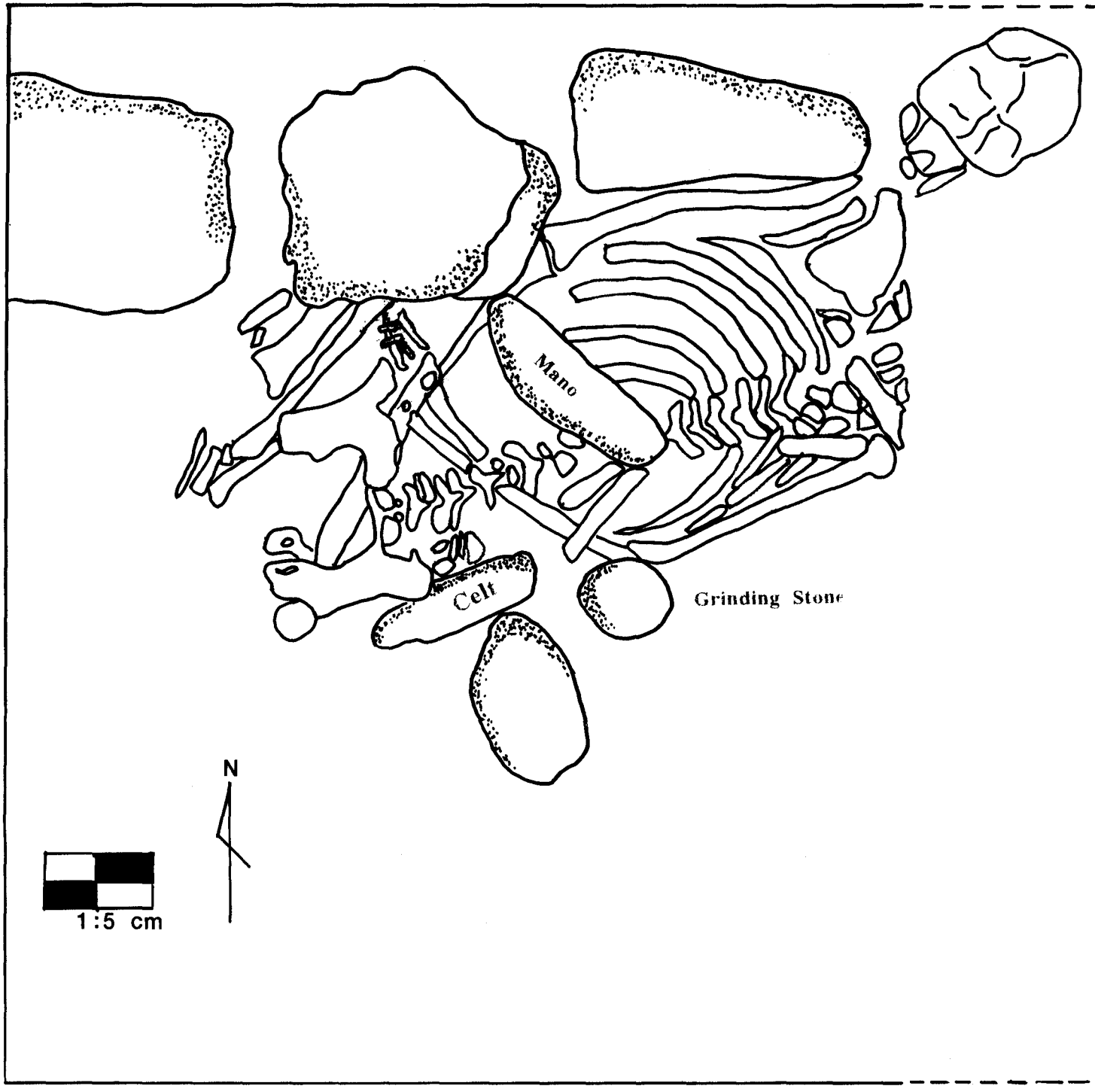


Figure 6. Unit 8, Level 4, Map of Burial 98-6; Infant Burial.



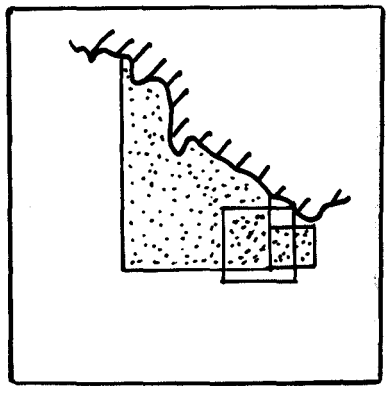


Figure 7. Unit 8, Level 4, Map of Burial 98-2.

Objects thought to be burial goods were found in direct association with the skeletal remains. These included an elongated basalt object, possibly a celt, but of otherwise unknown significance or function, directly below the right innominate bone; a round stone, possibly a grinding stone or hammerstone, located on the area of the trochlear notch of the right ulna; and a mano, which lay on a northwest-southeast angle across the spine. A second mano was found below the neck or right clavicle area of Burial 98-2. Jute shells were also strewn over the skeleton starting 60 cm dbd.

Two additional burials (Burial 98-3, and Burial 98-4) were found in the northwest section of Unit 8, very close to one another. A crudely aligned, roughly north-south, "wall" of limestone rock served to separate the two individuals. A second crudely aligned north-south running "wall" was revealed east of Burial 98-3, and served to roughly enclose the area of the interment (Figure 8). This latter wall also effectively served as a western border for a 5th burial (Burial 98-5). Due to the precarious positioning of both Burial 98-3 and 98-4's cranium, and concern that the skulls could be further damaged, the skulls were removed prior to mapping. Unlike Burials 98-6 and 98-2, Burials 98-3 and 98-4 were designated as cist-type burials, as no capstones were found. Large amounts of ceramic sherds, lithic objects and jute shells were found in the fill used in these interments.

Since Burial 98-3 was located directly below the area of looting, the preservation of the skeletal remains were very poor. Despite the poor preservation, Burial 98-3 was found to be in a tightly flexed (at both the knees and hips), fetal position, laid on its left side. The head extended towards the northwest, in an arched back prone position (see Figure 9). The individual's hands were positioned below the anterior aspect of the cranium. The skeletal material revealed that the individual interred in Burial 98-3 was an older juvenile of unknown sex (see Appendix 2). With the exception of jute shells, ceramics and lithic and faunal materials, there were no other grave goods included with Burial 98-3. Burial 98-3 was interred at a depth between 73 and 92 cm dbd.

Burial 98-4 was interred on a roughly northwest-southeast axis, with the head positioned to the southeast. The individual was flexed at the knees and hips and laid in a supine, yet somewhat fetal position (right side) (see Figure 10). Similar to Burial 98-3, Burial 98-4's hands were position below the anterior aspect of the cranium. The sex of this individual was tentatively designated female and was determined to be an older juvenile (see Appendix 2). Burial 98-4 was interred at a depth between 70 and 91 cm dbd.

A cache of ceramic sherds was encountered below a rock in the southwest corner area of the unit at a depth of 76 cm dbd, and appear to be fragments of one vessel. This object is thought to have been a grave good of Burial 98-4, based on its proximity to the burial. Reconstruction of these fragments was not completed at the time of this report.

The fill immediately west of Burials 98-3 and 98-4 was a very compact dry, loose, sandy matrix with small rocks strewn throughout. As the northern section of the unit and the burials was cleared towards the east, the matrix became much darker and more hard and dense. The compact nature of the matrix surrounding the skeletal material made the excavation of these bones problematic, as it was difficult to expose the remains without chipping or breaking the fragile bones. As excavations continued the matrix became more moist, orange in colour, and clay like, similar to that found in Unit 9 just before bedrock was reached.

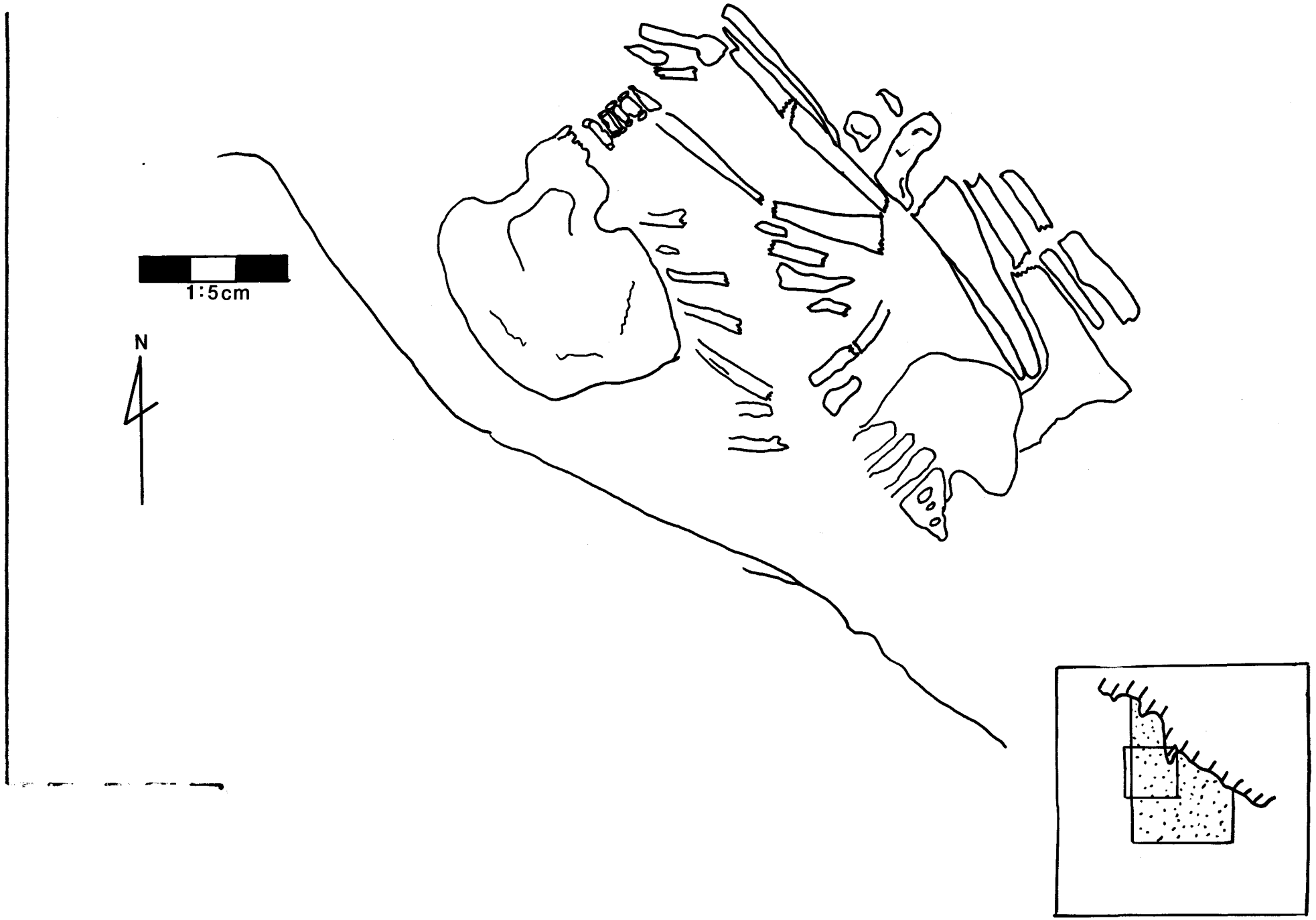


Figure 8. Unit 8, Level 4, Map of Burial 98-3 (85 cm north of east-west baseline).

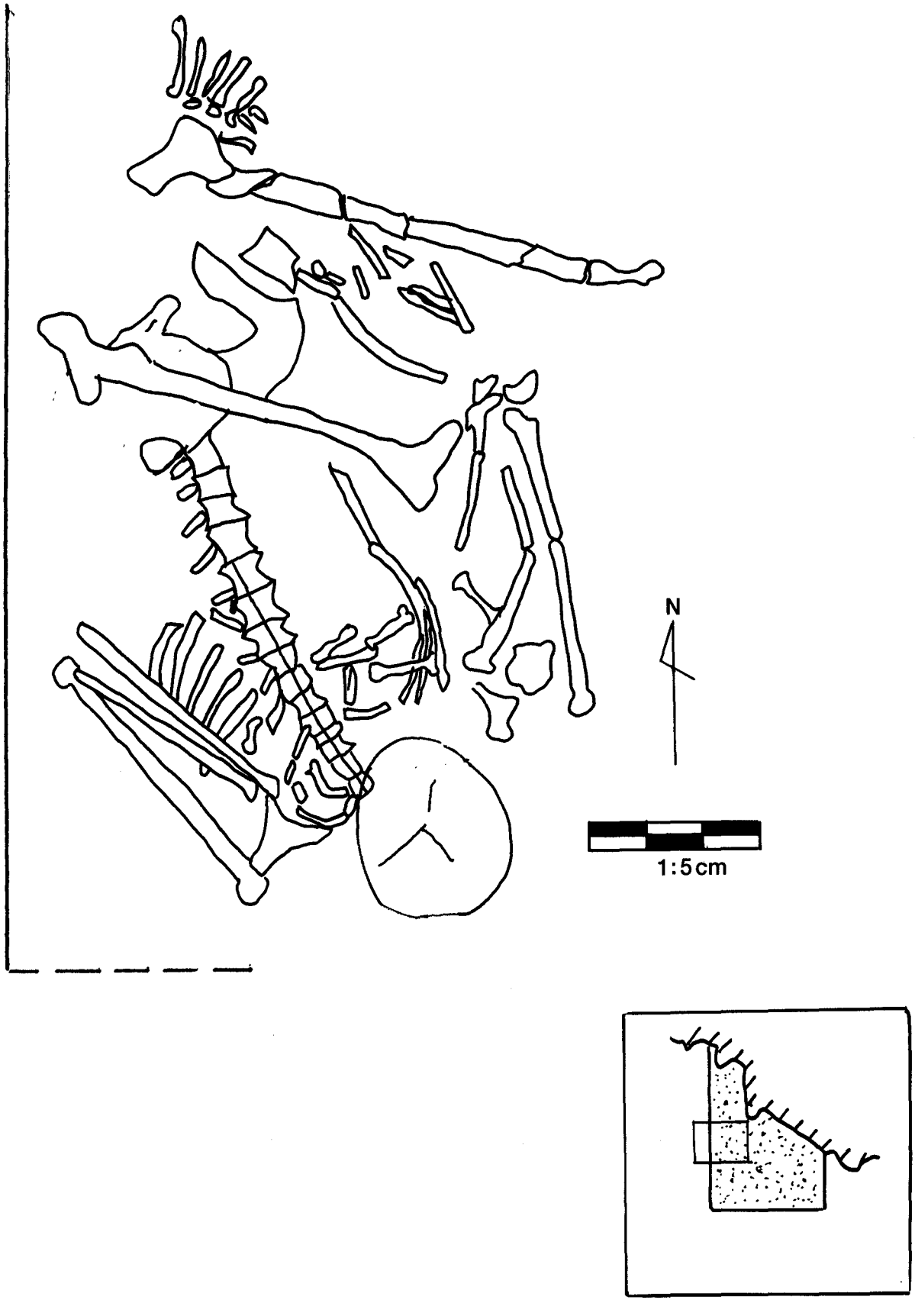


Figure 9. Unit 8, Level 4, Map of Burial 98-4 (140 cm north of east-west baseline).

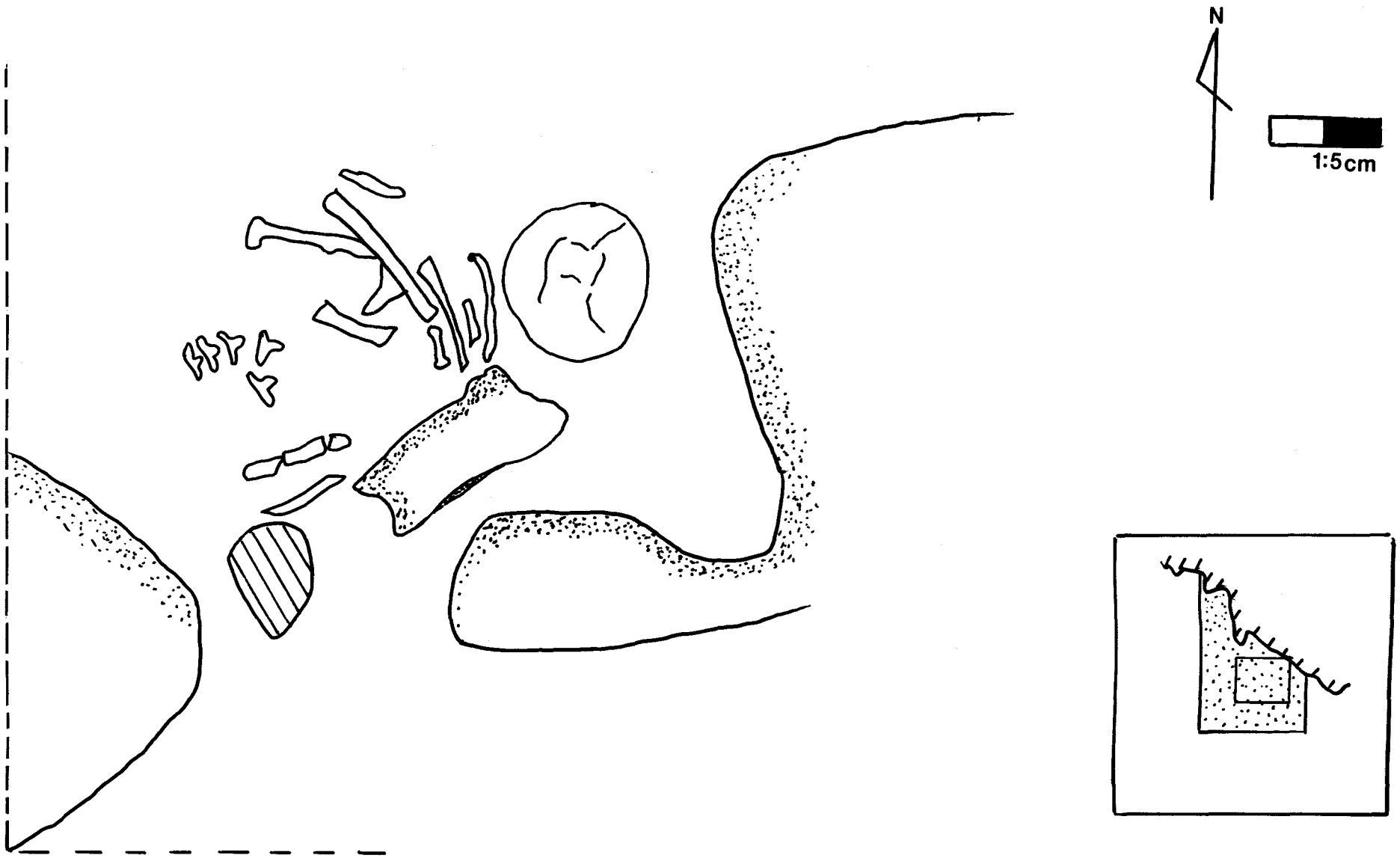


Figure 10. Unit 8, Level 4, Map of Burial 98-5 (60 cm north of east-west baseline, 125 cm east of west unit wall).

Burial 98-5 was the least preserved burial encountered during the 1998 field season. This is likely due, in part, to the presence of many roots running through the area, as well as the looting activities directly above the interment. Many of the bones, including the cranium were damaged, while others, including several vertebrae and the pelvis, were missing - likely due to looting or decomposition. The remains were flexed at the hips, with the individual laid out on their back (see Figure 11). The cranium, however, was in a prone position. Analysis of the skeletal remains indicated that the individual interred in Burial 98-5 was of middle to old age, however the sex was indeterminable (see Appendix 2). Burial 98-5 runs parallel to the north cave wall, and is thus oriented east-west, with the head to the east. This burial was crammed into a very small area, measuring approximately 70x30 cm, and occurred at a depth between 56 and 83.5 cm dbd. As noted earlier, the extent of Burial 98-5 was demarcated by a crudely aligned north-south running "wall" to the west, the adjacent bedrock outcrop to the south, and the cave wall to the north. A large stone or capstone did sit above the area of the cranium. As such, the burial was considered a crypt.

Matrix samples were taken from each burial within Unit 8. See Appendix 1 for a detailed listing of artifacts associated with Level 4. The sixth burial mentioned in the introduction to this paper was identified within the southern wall of Unit 8-Ext through the identification of part of a human cranium. Due to time constraints, however, this burial was not excavated during the 1998 investigations.

Level 5 was started at an average depth of 94 cm dbd in both Unit 8 and Unit 8-Ext. following the excavation of each of the exposed skeletal remains. The level began with a brown loose soil mixed with river pebbles and 8-10 cm river rock inclusions. As excavations continued, the matrix became more loamy, but maintained the same degree of rock inclusions. It appears that this matrix was brought up from the river bed to be used as a fill and for leveling the undulating cave floor. Few artifacts were recovered from Level 5 (see Appendix 1).

Unit 9

Unit 9 was located east of Unit 1 and north of Unit 2, both of which were excavated during the previous field season. The unit was established to encompass the looters pit previously designated as LP2. Like LP9, this pit had been slightly expanded during the off season. The decision to place a unit in this area was made, in part, because human bone was found in the disturbed surface matrices. The unit was situated 5 m west of datum UK9, and approximately 2 metres north of the east-west baseline. The unit followed the contour of the northern cave wall, and thus its dimensions were not uniform. The west unit wall measured approximately 1.7 m, the south wall 2 metres, and the east wall measured approximately 1.25 metres. Depth measurements were taken from a datum (UK11) established in the north wall of the cave during the previous field season. UK11 was located 5 cm above UK7, and essentially bisected the unit.

Salvage operations in Unit 9 began with a surface collection of visible artifacts (see Appendix 1) and the definition of the edges of the looter's pit. This level was designated as Level 1-dist. Level 1-dist. was comprised of a brown to tan coloured, soft dry soil which was sporadically mixed with artifacts, limestone rocks and some modern charcoal, likely from a nearby campfire. Level 1-dist. was completed upon effectively defining the boundary of the looter's pit (Figure 12), and unearthing two concentrations of poorly preserved, unarticulated human bone near the bottom of the pit in the northeast

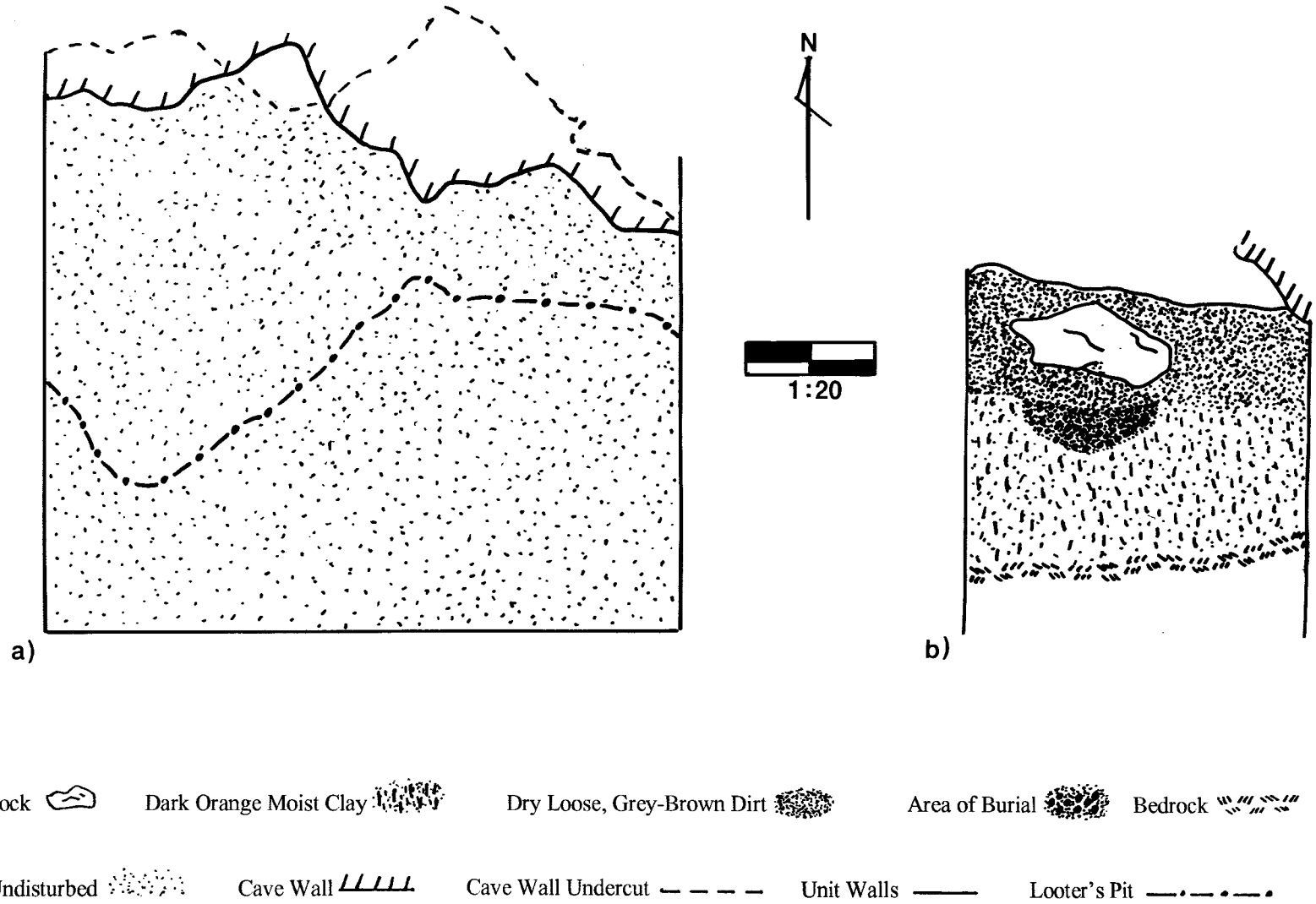
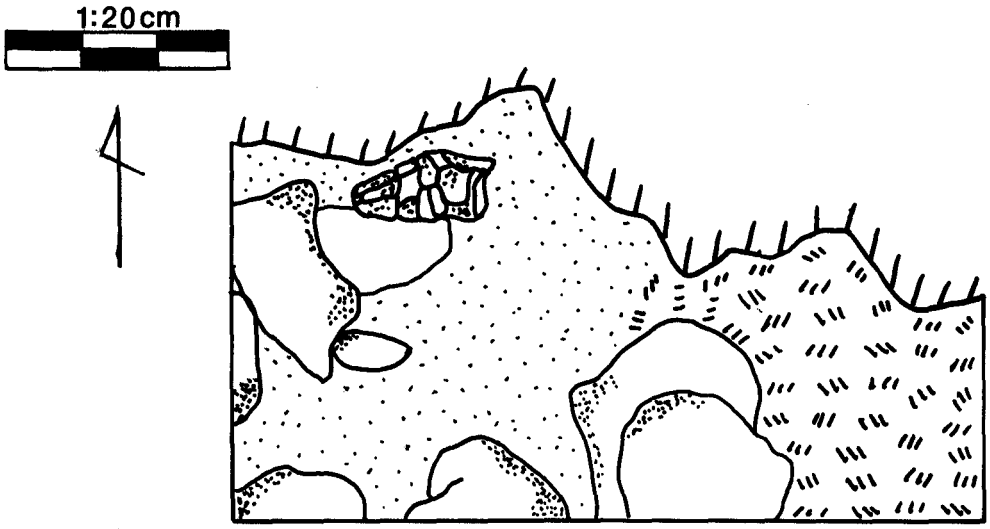


Figure 11. a) Top Plan of Unit 9 indicating Extent of Looter's Pit (LP2. b) Profile of Unit 9-Downsized.



Dense, Orange Moist Clay

Bedrock

Rock

Unit Wall

Cave Wall

Figure 12. Top Plan of Unit 9-Downsized, Level 3, Indicating Location of Burial 98-1.

corner of the unit. Numerous jute shells, most with their spiral ends broken off, were also found scattered within the vicinity of the human remains. Concentrations of jute are often found associated with burials in cave contexts, as was the case with the human remains unearthed in Unit 2 during the 1997 field season (Gibbs 1998:79), and Burials 98-2 and 98-6. Between 3 cm and 19 cm of disturbed soil was removed from this level.

Upon identification of the human remains and prior to beginning the new level, the unit size was decreased to focus on the area adjacent to the looter's pit. The southern wall of the unit was thus moved northward by 70 cm, and concentrated on the area with human remains. Levels 1 and 2, were arbitrary, and originally thought to be undisturbed levels. The discovery of a cigarette butt, however, indicated that these subsequent levels were also disturbed by looting. A 9 x 9 cm patch of yellowish daub-like soil was unearthed in Level 1, within the northeastern area of the unit. A matrix sample of this soil was collected. The same dry tan soil was encountered, but it had a more compact consistency. Small to medium sized rocks also began to occur within Level 2.

Human bone continued to be encountered within these levels, including fragments of two long bones, a patella, and teeth. Artifacts recovered from this level included ceramic sherds, chert flakes, faunal remains, as well as 2 obsidian blade fragments, 1 piece of pyrite, part of a spindle whorl, and a piece of conch shell (see Appendix 1). Level 2 was terminated at a depth of between 56 and 90 cm dbd upon exposure of an alignment of medium sized limestone rocks that formed a simple cist, and a change in matrix colour and consistency. Bedrock was reached in the eastern half of the unit.

Level 3 was only present in the western half of the unit, and consisted of an orange-brown, compact clay-like matrix. The partial remains the simple crypt (Burial 98-1) were identified in the northwest section of the unit (see Figure 13) at a depth of 60 cm dbd. Unfortunately, looting activities had disturbed a great deal of the construction and burial itself. The only parts of the crypt that remained in situ were two opposing uprights, a flat capstone over the area of the cranium, and a lower, crude alignment of rocks interpreted as being the northern wall of the crypt. The skeletal remains were measured at a depth of 80 cm dbd, and were also disturbed. The chest area, however, was less disturbed (see Figure 14, see Appendix 2).

Analysis indicated that Burial 98-1 was a primary interment of an older adult, tentatively identified as female, who was interred in an extended, prone position with the head facing west. No burial goods were found in Burial 98-1. Only a few faunal remains, ceramic fragments, a fragment of conch shell, and a quartz crystal were recovered from Level 3 (see Appendix 1). A matrix sample was taken from the soil surrounding the skeletal remains.

The matrix surrounding the skeletal remains was moist and dense, and as a result many of the bones were in poor condition and deteriorated further during excavation. The matrix surrounding the burial crypt was drier and less granular. The human bone recovered from the looter's backdirt in the preceding levels were likely from this individual, since they were bones from the lower half of the body. Bedrock was reached throughout the unit at depths ranging from 87 cm dbd (northeast corner) to 125 cm dbd (southwest corner).

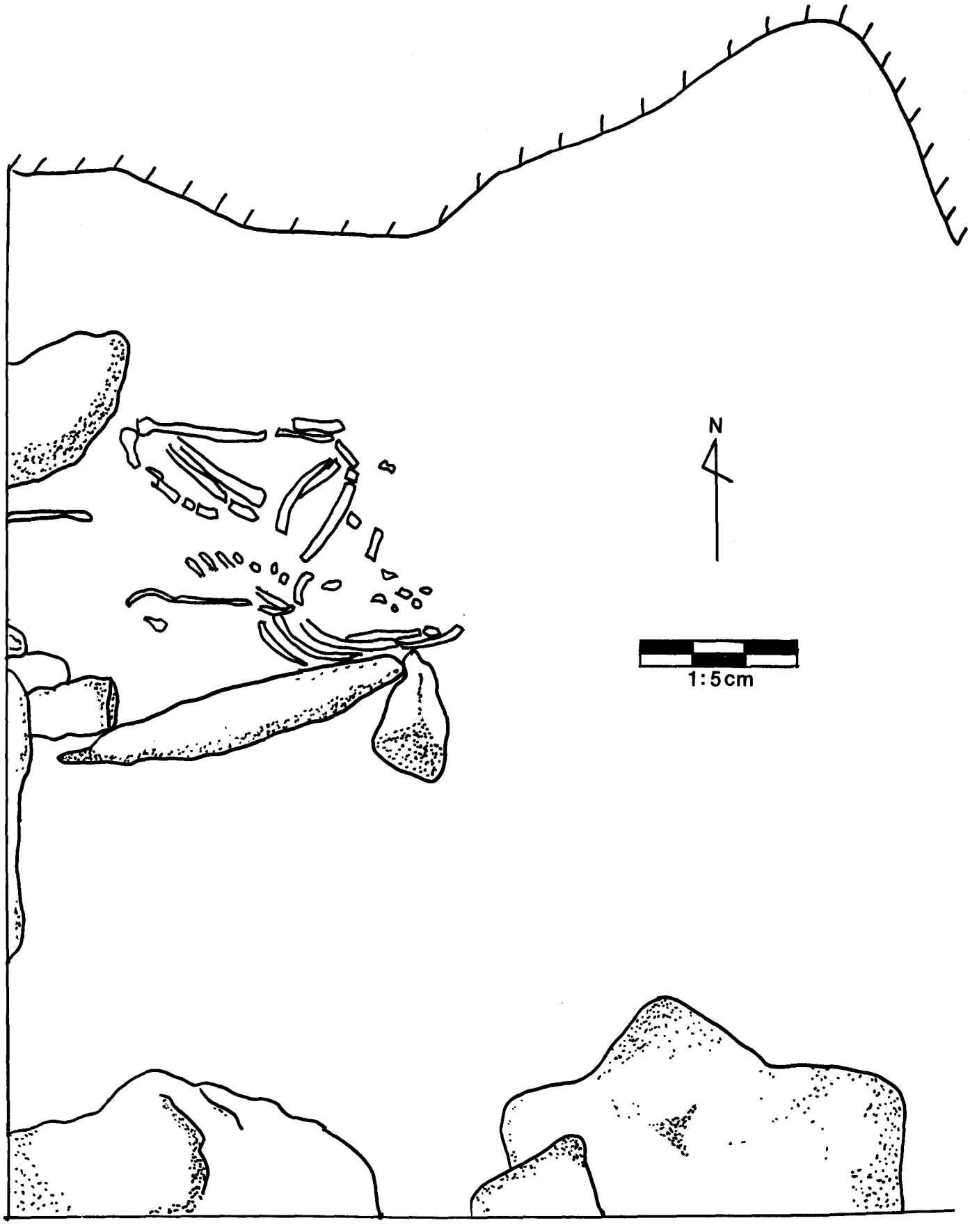


Figure 13. Unit 9-Downsized, Level 3, Map of Burial 98-1.

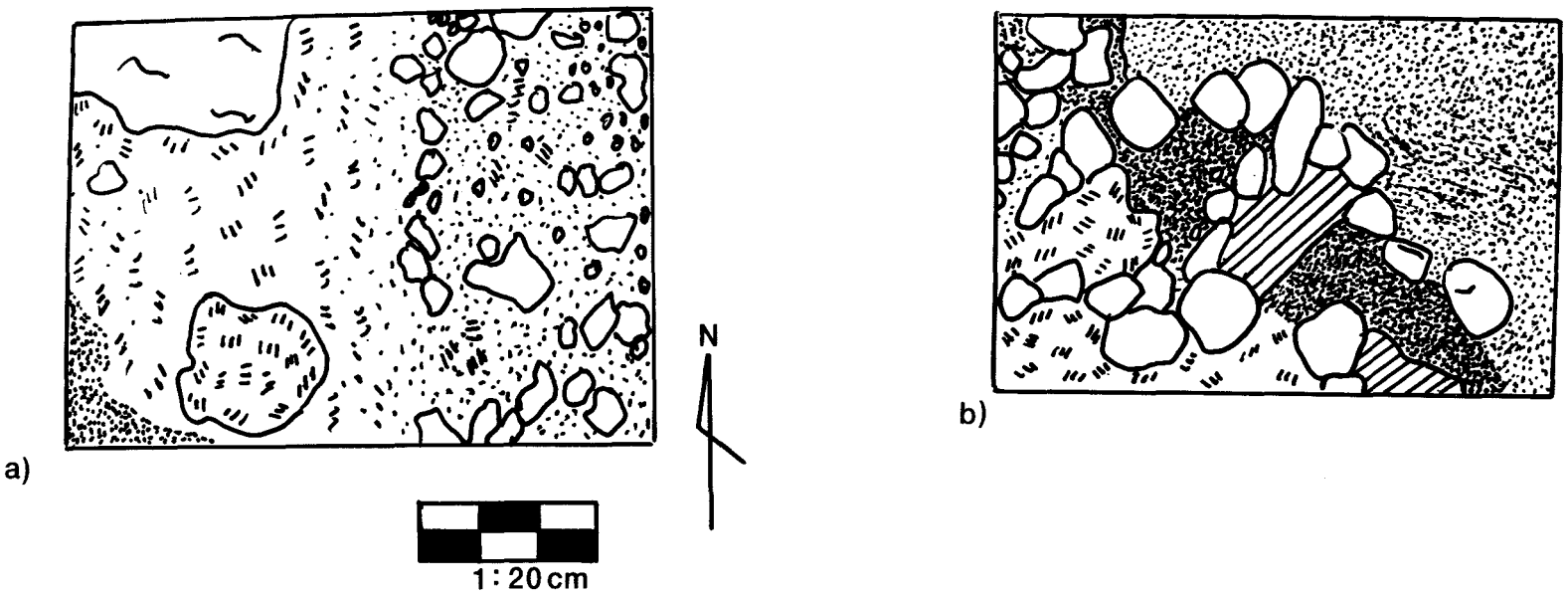


Figure 14. a) Top Plan of Unit 10, Level 2; b) Top Plan of Unit 13, Level 2, Illustrating Platform.

Entrance 2

Unit 10

Unit 10 was established at the edge of Entrance 2, slightly north of the area designated as the Histo Chamber (see Figure 1). The 2 x 1.5 metre unit was placed in an area initially thought to be undisturbed by looting activities. Looter's pits were subsequently recognized in the form of shallow indentations in the floor of the cave. Due to the distribution of looter's pits, Unit 10 partially encompassed sections of different and undesignated looters pits, and backdirt from looting activity. Unit 10 also contained a portion of a boulder centrally located in Entrance 2. A datum from the 1997 season (UK23) was used so that data from the previous season's research and maps could be consolidated with the 1998 research. UK23 is located on a boulder 180 cm east of the north-east corner of the unit, 79 cm above surface level.

No surface collection was initiated due to the absence of any surface artifacts. Level 1-dist. consisted of the disturbed matrices of looting activity, and was a dry, loose, tan coloured soil with inclusions of stone. Excavation of Level 1-dist. attempted to clear away disturbed matrices. Matrix density generally became more compact as excavations progressed. The presence of rocks was greater in the east half of the unit than in the west. Within the eastern half of the unit, excavators unearthed a strata of compacted rocks and a slightly lighter tan dirt matrix at depths ranging from 87 cm dbd to 100 cm dbd.

Artifacts were interspersed throughout this matrix. Bedrock protruded through this layer in some areas. Because of the presence of rocks and artifacts coated with plaster, an increased frequency of plaster flecks in the surrounding matrix, and the discovery of a tamped earth surface, it was decided to treat this strata as cultural. The excavation of Level 1-dist. terminated at this level. Excavation depths for Level 1-dist. ranged between 11 cm to 32.5 cm dbd. Artifacts recovered from Level 1-dist. matrices include potsherds, chert flakes, faunal remains (including shells), obsidian blade fragments and flakes, quartz crystal, pieces of slate, daub fragments, and human bone (see Appendix 1).

Level 2 included deposits of construction fill at a depth of 97 cm dbd in the southwest quadrant of the unit. These deposits were adjacent to the tamped earth surface and consisted of ballast-type fill, and river pebbles. Deposits in the eastern portion of the unit included larger river cobbles and limestone rocks. Because of the inclusion of limestone and deteriorated plaster, the compact dirt matrix in the eastern area of the unit was a lighter tan colour than that of the tamped earth surface. Ceramics recovered from the eastern portion of the unit are larger than those associated with the western section. A smooth speleothem was found associated with 2 bird femurs in the western half of the unit, north of the tamped earth surface. A shell (olivella) tinkler was also recovered from this area at a depth of 106 cm dbd. There were, however, significantly less artifacts retrieved from Level 2 than from Level 1-dist. In addition, modern deposits of wood fragments were encountered in the eastern half of the unit within Level 2, further indicating that this area had been disturbed by looter activity. Unfortunately, no changes in soil horizons were detected that might distinguish cultural deposits from looters backdirt or natural depositions.

Bedrock was reached throughout the excavation at depths ranging from 100.5 cm to 106 cm dbd.

The only secure in situ deposits encountered in Unit 10 were those unearthed in the southwestern corner of the unit. While the northwestern portion of the unit had been affected by looting activities, it had not been as badly damaged as the eastern portion of the unit. Material recovered from Level 2 included: animal and human bone, shell, chert flakes, potsherds, speleothems, and quartz crystal fragments (see Appendix 1).

Unit 13

Unit 13 was also located in Entrance 2, approximately 30 cm west of Unit 10 (See Figure 14). Evidence of the same kind of looting activity found in the vicinity of Unit 10, is also present in the area surrounding Unit 13. A bedrock outcrop was recognized adjacent to the southern unit wall, indicating that bedrock was close to the surface in some areas of the unit. The Unit measured 1 x 1.5 m, and was established along an east-west axis. Unit 13 was initiated in an attempt to further expose deposits revealed in the Unit 10 excavation. Unit 13 employed a datum (UK26) established in the previous season. UK 26 is located west of Unit 13 in the cave floor, adjacent to the Conch Alcove. This unit datum was cross referenced with UK23 and was located 7.77 metres from UK23, at a 256 degree angle, and 46 cm below UK23.

The matrix of Level 1-dist. consisted of a loose, dry, tan looter's dirt intermixed with rock inclusions. These rocks protruded from the surface of the cave "floor". Artifacts were collected from Level 1-dist, but were fewer in number than those recovered from Unit 10. An orange compact, clay matrix was encircled by a crude alignment of limestone rocks. A poorly preserved section of a plaster surface was identified along the south wall of the unit at a depth of 35 cm dbd. Upon further excavation a tamped earth surface was unearthed at a depth of 54 cm dbd. This surface is the same as that identified as a floor in Unit 10. Bedrock was also revealed in the southeast, northeast and northwest corners of the unit. It is apparent that the clay and plaster surface enclosed by the crude rock wall was in fact the corner of a prehistoric platform, constructed on the tamped earth surface. It is possible that the tamped earth surface once covered the entire cave floor of Entrance 2. Materials recovered from Level 1-dist. included: ceramic and lithic artifacts, faunal remains, and speleothems. For a more detailed outline of the artifacts recovered from Level 1-dist. see Appendix 1. Level 1-dist. ranged from 2 cm to 25.5 cm thick and was terminated upon complete exposure of the architecture.

Level 2 consisted of a soft, medium dark brown dirt, with sparse small limestone rubble inclusions. In this area rock was not used to create a level surface, as they were in Unit 10. This is likely due to the fact that bedrock was closer to the surface in this area. A second crude alignment of rocks was also encountered on the interior side of the clay deposit, suggesting that the wall was double-sided. The use of the clay and the double-sided wall would have allowed for a more stable construction. It is likely, as indicated by the patch of plaster surface in the south west quadrant of the unit, that the entire platform, including the face of the wall, was covered in plaster. We decided not to excavate the entirety of the platform exposed in Unit 13. This will allow more comprehensive, non-salvage oriented investigations to occur at a later date.

A dispersed collection of potsherds was encountered within the wall, at a depth of 45 cm dbd, and below the area of the clay deposit. Cultural materials were more numerous in Level 2 than they were in Level 1, and included: ceramics, chert flakes, slate fragments, shell, 3 quartz crystals, 2 obsidian

blade fragments and a stone ball (see Appendix 1). Unit 13 reached a maximum depth of 61 cm dbd, and was terminated upon reaching bedrock through the remainder of the unit. The maximum level thickness was 35 cm.

DISCUSSION AND CONCLUSIONS

Salvage excavations revealed that while looters had damaged a great deal of the cultural materials within Actun Uayazba Kab, considerable information about ancient Maya activity in the cave could still be recovered. A total of 6 burials were encountered during the 1998 field season (bringing the number of individuals recrded from Actun Uayazba Kab to 11). A platform and a plaster floor were also found in the Burial Alcove and within Entrance 2.

Salvage and data recovery operations indicate that the Burial Alcove and Entrance 2 areas of Actun Uayazba Kab may have been used for different types of activities. The Burial Alcove appears to have functioned primarily as an interment site, as evidenced in Unit 8 where several burials were exposed. It is possible that the Burial Alcove may have been chosen for burial purposes because of the deep matrix in that area. In contrast, the plastered sections of Entrance 2 suggests that this section of the cave may have been used for different ritual purposes. The fact that the matrices surrounding the interments vary, and the location or remains within simple crypts and cists further suggests that the burials were not interred in one massive effort. Instead, they likely represent sequential deposition of individuals over a period of time.

Excavations also revealed that a range of grave and burial forms were employed, however, the prone, flexed at the knees and hips, pattern of burial does seem to have been prominent. Grave types ranged from simple pits to crypts, with most (but not all) bodies oriented with the head to the south. Interestingly, it appears as though the interments were laid in positions that followed the contours of the cave. Most of the individuals were adult females. The inclusion of an infant, and the lack of burial goods, pose interesting questions as to the nature of the interments themselves (i.e., were these individuals sacrificed - as perhaps Burial 98-3 may suggest) or did these individuals die of natural causes?). Based on the five burials encountered during the 1997 field season, Gibbs (1997:81) suggests that the adult individuals from Actun Uayazba Kab were not sacrifical victims, however the infant might have been. Instead she suggests that the individuals may have been part of an ancestral lineage which possessed ties to the cave. Of course, the latter can only be confirmed by means of genetic analysis. Further research, and detailed study of all data recovered from Actun Uayazba Kab will certainly serve to elucidate the nature and purpose of the activities conducted within this cave.

Acknowledgements

I would like to thank the acting Commissioner of Archaeology Mr. John Morris and all the staff of the Belize Department of Archaeology for their continual support and assistance. Special thanks is also extended to the wonderful people of San Ignacio, particularly Dan and Miriam Silva and the staff at the Cahal Pech Village, Ms. Lucky Kameka, Bob and Nettie Jones, Mark Bejos, Pete Zubrzycki, Don Ferbindo and his horses, David Valencia, and Carlos. I owe a great deal of gratitude to Dr. Jaime Awe for all his support, and for allowing me the opportunity to work on the Western Belize Regional Cave Project. Last but not least, I'd like to thank my comrades in the field for their continued guidance,

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Appendix 1. Artifact distributions and numbers per Unit and Level.

Unit 8	Ceramic Sherds	Chert	Slate	Speleo	Faunal *	Shell	Daub	Human Bone	Special finds
Surface	260	3	-	15	108	116	-	4	2 obsidian blade frag.; 1 quartz crystal
Level 1-Disturb. (Sect. A)	249	8	2	18	_ (1 crab claw)	219 jute;	_	11	2 obsidian blade frags; 2 quartz crystal frags; 1 drilled conch shell frag
Level 1 Disturb. (Sect. B)	736	52	-	14	_	691 jute; 3 pomacea	_	10	4 obsidian frag; 6 obsidian blade frags; 1 mano frag; 3 quartz crystals
Level 1	72	5	-	2	_	44 jute; 1 nephronaias; 1 pomacea	-	1	1 quartz crystal frag.
Level 2	404	31	7	52	_	419+ jute	-	4	6 obsidian blade fragments; 1 mano frag; 1 conch shell bead; 6 conch shell frags; 1 quartz frag.; 1 spindle whorl
Level 3	222	20	-	1	_	409 jute	-	-	1 red pendant; 4 obsidian blade frag; 1 conch shell bead; 7 quartz crystals
Level 4	597	184+	1 modif.	48	_	876+ jute; 1 pomacea	_	12 + burials	30 quartz crystal; 6 obsidian blade frag.; 1 polished stone;1 ground stone; 1 conch shell frag; 1 shell bead; 1 drilled tooth;
Level 5	-	-	-	-	-	-	-	-	-

Appendix 1 (continued). Artifact distributions and numbers per Unit and Level.

Unit 8-Ext.	Ceramic Sherds	Chert	Slate	Speleo	Faunal *	Shell	Daub	Human Bone	Special finds
Level 1	46	6	2	1	-	-	-	-	-
Level 2	275	25	6	-	-	303 jute; 2 nephronaias; 7 pomacea	-	-	9 quartz crystal; 3 obsidian blade frag; 1 conch shell frag.
Level 3	117+	7+	-	-	-	-	-	7	4 quartz; 1 obsidian frag; conch shell frag
Level 4	87	32	-	-	-	252+	-		4 quartz; 1 mano frag.
Level 5	10+	3+	-	-	-	-	-	-	2 quartz frags; 1 obsidian blade

Unit 9	Ceramic Sherds	Chert	Slate	Speleo	Faunal *	Shell	Daub	Human Bone	Special finds
Surface	232	14	-	-	-	11 pomacea; 133 jute	-	46 pieces	1 obsidian blade frag.; 1 quartz crystal frag.
Level 1-Disturb.	121 (9 were polychrome)	8	-	1	-	123+ unmodif. Jute; 24+ modif. Jute; 1 pomacea	-	274 pieces	1 obsidian blade frag.; 2 quartz crystal frags.
Level 1	350	71	-	5	- (gibnut bones)	185 jute	-	125+ (1 patella; 2 long bones, teeth)	10 quartz crystal; 2 obsidian blade frag.; 1 pyrite piece; 1 ceramic spindle whorl frag.; 1 conch shell frag.
Level 2	62	39	-	2	-	80 jute	-	21 pieces	1 conch shell pendent; 4 conch shell frags.; 1 obsidian blade frag.; 1 unknown red ball (pigment?) -

Unit 10	Ceramic Sherds	Chert	Slate	Speleo	Faunal *	Shell	Daub	Human Bone	Special finds
Level 1	1294 (including polychromes)	67	10	8	- (1 parrot fish mandible; 1 reptile vertebrae; 3 bird bones)	2 nephronaias; 9 pomacea; 27 jute	2	3	5 quartz crystal; 1 conch shell frag; 1 conch bead; 1 tinkler; 20 obsidian blade frags; 2, obsidian. Flakes, 2 modif. Bone frags; 1 bone tube (?)
Level 2	17	11	-	4	-	5+	-	2 flange	1 quartz crystal

Unit 13	Ceramic Sherds	Chert	Slate	Speleo	Faunal *	Shell *	Daub	Human Bone	Special finds
Level 1	259	14	1	5	-	27 jute; 2 pomacea; 1 nephronaias	-	-	2 quartz crystal; 1 chert core; 1 obsidian blade frag.
Level 2	198	20	12	-	-	22 jute; 1 nephronaias	-	-	3 quartz crystal; 2 obsidian blade fragments; 1 stone ball (?))

* Analysis of faunal remains has yet to officially commence. Some specimens were cursorily identified in the field, and are indicated above. All jute specimens collected were of the Pachychilis indiorum species.

APPENDIX 2.
HUMAN REMAINS FROM ACTUN UAYAZBA KAB

Sherry Gibbs

Burial 98-1 contained the extended prone remains of an older adult, possibly female, from a simple crypt. The upper part of the remains are in primary interment, but the lower portion of the skeleton is missing due to looter disturbance. Most of the cranium is present, although it is very fragmented. The mandibular corpus is missing, as well as the anterior portion of the alveolus of the maxilla. The available data suggests that this individual may have been female based on qualitative cranial traits and general observations. The gonial angle of the mandible is not flared nor pronounced, but is rather smooth and rounded. The bones are generally gracile. It is likely that this individual was of an older age due to the deterioration and reabsorption of bone on 2 cervical vertebrae and the mandible, possibly indicating diseases of older age.

It is likely that this individual may have suffered from osteoporosis. This is most evident from the two cervical vertebrae in which the bodies are compressed. The humeral shaft also exhibits perforations which could be evidence of an advanced stage of the disease. However, they could also be cloaca as a result of an infection in the bone. There is also medium to heavy osteophytic lipping on the other thoracic vertebral bodies, with some accompanying porosity. The surviving area of the mandibular corpus is low, possibly as a result of periodontal disease. This is also supported by the absence of the mandibular molars. The right mandibular condyle might also exhibit arthritis, as it is smaller than the left side and has a ridge, or lipping. All of these examples of deterioration suggest an older age for this individual.

In addition to the above mentioned diseases, this individual also suffered from severe porotic hyperostosis, probably a result of an iron deficiency, very common among the ancient Maya. The parietal bones show both endo- and ectocranial activity resulting in severe pitting endocranially and a loss of cortical bone ectocranially.

Caries is present in the maxillary and mandibular incisors and canines. There is also extensive wear on all of the teeth, with exposed dentin on 2 mandibular incisors and 1 canine root. Hence, it appears as though this possible female lived a long life suffering from anemia, arthritis, dental diseases and possibly osteoporosis.

Burial 98-2 was a partial crypt containing the flexed remains of a probable young adult female. The individual lay in the prone position with the hands at the pelvis. More than fifty percent of the bones have been recovered, however, they are very fragmented. Acetabulum of the left os coxa is the only preserved portion of the pelvis. The sex of this individual is based primarily on qualitative traits, with two osteometric traits. The diaphyseal formula, following France 1983 (Bass1987:154) was used to evaluate the minimum and maximum mid-shaft diameter of the humerus. The result yielded 1.52, just above the cutoff of 1.477, indicating a male. However, the diameter of the acetabulum, 48.52 mm, is small in size and therefore indicates a female. There are also number of qualitative traits observed on the left side of the skeleton that indicate a female. The orbits are large and the supra-orbital margin

is thin and sharp, the zygomatic process ends before the auditory meatus, the glabellar region is rather flat, the mastoid process is small, narrow and rather pointed, and the gonial angle of the mandible is rather obtuse, rounded and smooth.

The dentition indicates that the individual in Burial 98-2 was probably a young adult. The fragmentary nature of the cranium prevents any observation of the extent of suture closure. There are no signs of arthritis nor any evidence for porotic hyperostosis or cribra orbitalia. In the maxilla the right M3 has erupted. Left and right M3 in the mandible have not erupted. This indicates that the individual was probably around 20 years of age. This assessment is tentative, allowing for the possibility that the mandibular M3s were never to erupt, and that the individual could be older. Dental health of the individual was rather poor, with evidence for periodontal disease on the left maxilla, possibly the result of an abcess. Caries is present on many of the teeth on both the root and the occlusal surface, as well as calculus on some of the molars and a mandibular incisor. There was also a great deal of attrition on the mandibular and maxillary incisors and canines. There was also enamel hypoplasia present on a number of the maxillary incisors, canines and the left M1.

Burial 98-3 is a cist containing the tightly flexed remains of an older juvenile whose sex is indeterminate. In situ the head appeared to be bent backwards, however, upon examination of the bones the second to fourth cervical vertebrae were still articulated and positioned in such a way as to suggest the individual's head was bent tightly forward. Preservation was fairly good, however, there were no complete bones and the pelvis was not well preserved.

The sex of this individual was determined using qualitative traits from the cranium and qualitative from the long bones. The orbital margin is blunt with a thick superior edge, the zygomatic process extends past the auditory meatus, the mastoid process is large and broad and the temporal and nuchal lines and the external occipital protuberance are strong and well developed. On the mandible, the mental eminence is square and the gonial angle is rectangular and flared with a marked tuberosity. All of these traits indicate this individual was probably a male, however some of the osteometrics indicate this was a female.

The diaphysial variable of the humerus worked out to be higher than the cut off in two formulas, the Pecos Pueblo (1.772>1.477) and the Arikara (1.756>1.48) (France 1983, 1985 from Bass 1987:154-155), indicating a male. The maximum femoral length of 37.3 cm, however, falls in the range for females (Marquez & del Angel 1997:56, 58). The stature of this individual, when using Genoves' (1967:76) formula for Mesoamerican females is 146.3 cm; when using the formula for males the stature is 150.7 cm. Both formulas provide a stature which falls within the range for Mesoamerican females during the Classic Period (Marquez & del Angel 1997:57, 58; Saul & Saul 1997:49).

Because this individual was of juvenile age (Acsadi & Nemeskeri 1970; Schwartz 1995:193-94) it is difficult to determine its sex. This is compounded by the fact that the femur has not reached its maximum length, therefore effecting the individual's stature. The fact that this individual has qualitative male traits could nevertheless indicate this was a male who had not finished growing.

All four third molars had erupted, thereby placing this individual under the age of 20 years, if not younger (Schwartz 1995:192-193; Ubelaker 1978: fig 62). The humeral head has not completely

fused, and fusion begins around 20 years of age and ends at roughly 25 years of age (Schwartz 1995:197). Fusion of the distal epiphysis of the ulna is partial, placing this individual between 21 and 25 years of age (Schwartz 1995:197). The left clavicle is missing the sternal epiphysis (where fusion usually begins at 21-22) (Schwartz 1995:197). The marginal epiphyseal rings of the body on the lumbar, thoracic and cervical vertebrae that are present have not completely fused, and in some cases are missing. Fusion is usually complete between the ages of 20 and 25 years (Schwartz 1995:197). The iliac crest has not completely fused. In some areas the metaphyseal line is very evident, while in others this epiphysis is not attached, placing this individual between 16 and 25 years of age, or even younger, considering ossification of this area begins at approximately 13 years of age (Schwartz 1995:197).

There were a number of diseases afflicting this individual. On the body of one of the cervical vertebrae is a large pit with rounded edges, possibly indicating the presence of osteomyelitis. There is also evidence for iron deficiency with the presence of cribra orbitalia in the left orbit (the right orbit is missing) and porotic hyperostosis on both parietals near the apex, on the left parietal near lambda, and on the frontal bone at bregma. There are large endocranial pits and the internal wall is very thin. There is also a small depression on the right side of the frontal bone just above the orbit.

Burial 98-4 was a cist grave with the remains of a flexed older juvenile in a supine position with the head to the south and facing the east. The cranium, arms, right leg and lower left leg were very fragmented. The pelvis and trunk were in reasonably good condition.

The sex of this individual is indeterminate due primarily to the fact that this was a juvenile and that few traits were available for sexing. From the pelvis the ilium was present but provided ambiguous results. There was no preauricular sulcus present and the sciatic notch rated an ambiguous 3 from the standard (Buikstra and Ubelaker1994:18) recording system for this trait. The iliac crest was S-shaped indicating a female trait. The cranium provided traits that were distinguishable. The glabellar region was rather flat, the orbital margin was sharp and moderately thin, there was no supraorbital ridge, however the nuchal lines and external occipital protuberance were present, but not strong. Based on these traits one could propose that this individual was female, but this possibility is very tentative.

The age of this individual is thought to be that of an older juvenile. The dentition was absent, so the epiphyseal fusion was examined. The left clavicle was missing the sternal epiphysis, which usually begins to fuse between 21 and 22 years of age, however, the acromial epiphysis had fused, which occurs around 20 years of age (Schwartz 1995:197). The distal epiphysis of the ulna is partially fused, indicating an age between 21 and 25 years (Schwartz 1995:197). The superior and inferior epiphyseal rings of the centrum have not fully fused in the thoracic vertebrae, however they have in the cervical, putting the age between 20 and 25 years (Schwartz 1995:197). The ischial tuberosity has not completely fused and the metaphysis is still exposed in areas possibly indicating fusion had just begun, placing the age range between 16-17 (fusion begins) and 23-25 years (fusion is complete) (Schwartz 1995:197). The iliac crest epiphysis is missing, and fusion here had not begun, giving an age range closer to 16 to 17 years (Schwartz 1995:197). The anterior superior iliac spine has joined but is not completely fused giving an age range of 17 to 23 or 25 years (Schwartz 1995:197). The small fragment of the pubic symphysis present indicates that the epiphysis has not completely fused and was missing in areas, as with the ischial tuberosity, giving it an age range of 20 to 29 years from the preepiphyseal stage (Meindl et al 1985). The auricular surface provides an age range of 20 to 24 years, consistent with

that given above (Lovejoy et al. 1985). Hence this individual is suggested to have been in the early twenties.

Burial 98-5 was a crypt grave with the flexed remains of a adult, whose body was in a prone position with the head to the east, face down. Preservation was very poor with the pelvis and lower limbs missing and the cranium and ribs very fragmented. The sex of this individual is not known, while the age is estimated to be of middle to old age due to the extent of periodontal disease. Unfortunately, this is all that can be mentioned of this individual at this time.

The 6th (adult) individual (excluding the burial individuals) consists of a large number of fragments, especially cranial fragments. The bones include the shafts of a humerus, tibia and 2 femora (left and right), a number of phalanges, numerous cranial fragments, some vertebral fragments, and a number of teeth, which have a high degree of attrition. The mandibular gonial angle (and condyle) were also retrieved which exhibits some male traits. The gonial angle is large and pronounced with a marked tuberosity, and the angle is just above 90 degrees.

The second juvenile, which is not believed to be older than 14 years of age, is comprised of 2 phalanges lacking the proximal epiphysis, with the distal epiphysis partially fused (Schwartz 1995:table 7-6). Teeth were recovered during screening. The following permanent teeth, at various stages of development, were identified: RI1, M1, RC-, RM1, which all indicate that there was a 4-5 year old interred. A newborn is also indicated by the presence of a very small ilium fragment, 4 long bones (2 of which measure 33.5 and 35.8 mm in length), and 2 mandibular fragments.

The human remains from the Histo Chamber were collected from the surface, as well as from a large backdirt pile near the back of the chamber (to the south). The remains are poorly preserved, due in part to the high humidity levels in the chamber. The matrix is composed primarily of bat guano, which contributes to the decomposition of the bones. The assemblage consists of numerous small fragments, including cranial and vertebral fragments, as well as long bone fragments. The right pubic symphysis of an older juvenile, approximately 20 years of age based on the symphysial surface, is also present, as well as a right talus, a scapula fragment (of the acromial process), and the distal end of a right tibia. There is also evidence for a child having been interred in this chamber, based on 2 young metatarsals, 5 phalanges and a right calcaneous.

ACTUN UAYAZBA KAB OSTEOMETRICS

BURIAL 98-1

No osteometrics available

BURIAL 98-2

POST-CRANIAL

L. humerus: max diameter at midshaft = 19.72 mm
L. humerus: min diameter at midshaft = 13.1 mm
L humerus: circumference at midshaft = 55 mm
acetabulum diameter = 48.52 mm

BURIAL 98-3

POST-CRANIAL

L.humerus: max diameter at midshaft = 19.32 mm
L. humerus: min diameter at midshaft = 13.72
L humerus: circumference at midshaft = 50 mm
L. ulna: physiological length = 207.72 mm
L. ulna: least circumference at midshaft = 30 mm
R. ulna: least circumference at midshaft = 33 mm
L femur: max length = 373 mm
L. femur: ant-post diameter at midshaft = 23.15 mm
L. femur: med-lat diameter at midshaft = 22.95 mm
L. femur: circumference at midshaft = 72 mm
L. femur: max bi-condylar breadth = 67.9 mm
L. femur: min bi-condylar breadth = 61.63 mm

BURIAL 98-4

POST-CRANIAL

L. femur: max head diameter = 40.56 mm
L. femur: ant-post diameter at midshaft = 22.92 mm
L. femur: med-lat diameter at midshaft = 24.06 mm

BURIAL 98-5

No osteometerics available

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EXPLORATION AND INVESTIGATIONS OF THE SINKHOLE TUNNELS, ACTUN TUNICHIL MUKNAL, BELIZE

Christophe G. B. Helmke
McGill University

INTRODUCTION

At the end of the 1997 field season a series of small tunnels branching off from the main stream way of Actun Tunichil Muknal were located and briefly explored. These tunnels are the most recently discovered area of ancient Maya activity inside that cave. This report provides a description of the archaeological investigations conducted inside the Sinkhole Tunnels in 1997 and 1998. A brief description of the tunnels and a preliminary analysis of the cultural material retrieved are also included. The periods of usage of the tunnels in relation to the overall chronology of the cave, will also be discussed.

SUMMARY OF INVESTIGATIONS

The discovery and speleological explorations of Actun Tunichil Muknal in the 1980s (Miller 1989a b c, 1990; Marochov and Williams 1992), were followed by the archaeological investigations of the cave in the 1990s. Descriptions of the chambers containing cultural remains are provided by the archaeological investigators of the Western Belize Regional Cave Project (WBRCP). The WBRCP has carried out research inside the cave in 1993, and from 1996 to 1998 (Awe et al. in press; Awe 1998). It was after more than a hundred entries into the cave that the Sinkhole Tunnels were discovered late in the 1997 field season. The concealed entrance may have played an important role in keeping the tunnels free of looting activity.

Preliminary exploration of the tunnels in 1997 revealed evidence of ancient Maya usage in the form of several hundred ceramic sherds. None of these tunnels displayed signs of looting. This feature represents a definite exception when compared to other sites in the Roaring Creek Valley. Due to time constraints, a full investigation of the tunnels was not possible at that time. The easy access to the tunnels from the main river passage of the cave, coupled with fear of looting, urged the removal of 3 unique or rare ceramic specimens. The results of this salvage operation are summarized by Griffith (1998: 50). The salvage operation (ATM-Salvage Operation 2) took place within the first 10m of the tunnels.

Extensive exploration, mapping, and a surface collection of all cultural material took place during the 1998 season. During exploration of the tunnels, a new passage was found in which a human fibula was discovered. Additionally, two partial ceramic vessels were located outside the tunnels, in the faults and breakdown on the opposite (northern) side of the stream way, a few meters above the level of the water. Other ceramic specimens were also noted high in the eastern portion of the breakdown of

the sinkhole (Michael Mirro pers. comm. 1998) but were not retrieved. Since no excavations have taken place in the tunnels, it is possible that additional human remains and artifacts still lie buried in alluvium. This report provides a description of the system of tunnels, a summary of the mapping procedures, and a preliminary analysis of the ceramic sherds and the human fibula that were collected as surface finds. Since only a portion of the artifacts have been analyzed, this report serves only as a provisional summary of the investigations inside the Sinkhole Tunnels. A more detailed report of the ceramic assemblage from the Sinkhole Tunnel will appear once analysis is completed.

DESCRIPTION OF THE SINKHOLE TUNNELS

Actun Tunichil Muknal (Fig. 1) is characterized by the stream or creek that flows through the cave's major stream way. Access to the system of tunnels can be gained via small passages located in the southern wall of the large stream way. The larger entrance to the Sinkhole Tunnels is situated 7.5 meters southwest of a prominent collapse sinkhole that partially exposes the stream way to daylight. The sinkhole lies approximately 150m west of the cave's eastern entrance, although the cave can also be entered from the sinkhole. The Sinkhole Tunnels are a geological extension of the stream way and are structurally associated with the breakdown of the sinkhole. To the west of the sinkhole the stream way constricts to an approximate average width of 5m and is unencumbered by breakdown. This allows for easy passage through to the resurgence sump located nearly 1.5km to the west.

The tunnels penetrate into the bedrock on the southern side of the stream way and the sinkhole. Pink brecciated limestone that has re-cemented after shattering is the stone which forms the Sinkhole Tunnels. The breccia measure on average 20cm in diameter although some are larger. All the tunnels in the southwestern portion of the system were formed by limestone dissolution. The northeastern tunnels wind through voids between large breakdown blocks. Since the solution tunnels are elevated several meters above the current level of the stream, they appear to have been formed by the perennially-active current at a time when the water table was considerably higher. As such, the western tunnels can be considered fossil stream beds, through which the creek once ran. The Main Chamber of Actun Tunichil Muknal is also elevated above the stream and may have been formed during the same geological time span. The northeastern tunnels penetrate partially into the lower sections of the breakdown which partly fills the outer collapse sinkhole. The exact positions where the tunnels culminate inside the breakdown, have not yet been located since the sinkhole itself has not been mapped. If a boundary is drawn between the section of the tunnel system that is formed by dissolution and that which is defined by breakdown, the southern wall of the sinkhole can be estimated (Figure 2). In summary, it appears that during the collapse of the ceiling of the principal cave passage, sections of the solution tunnels were destroyed by the breakdown that fills the sinkhole. During this episode the eastern sections of the sinkhole tunnels were formed.

The two entrances to the Sinkhole Tunnels are located approximately 3m above the level of the creek, and are accessible from the stream way by a short climb. The area that is accessible by humans represents a total length of roughly 80m (slope distance). A deep passage (Tunnel 7) that was not mapped in 1998 may add as much as 10m to the total length. Adding the length of the narrower passages that cannot be accessed, suggests a total length that is slightly in excess of 100m. The widest tunnel is 6m wide, while the narrowest is less than 1m wide. Ceiling height ranges between 2m and 0.5m, with some crawl spaces feeling as though they are a lot smaller. The majority of "floor" surfaces

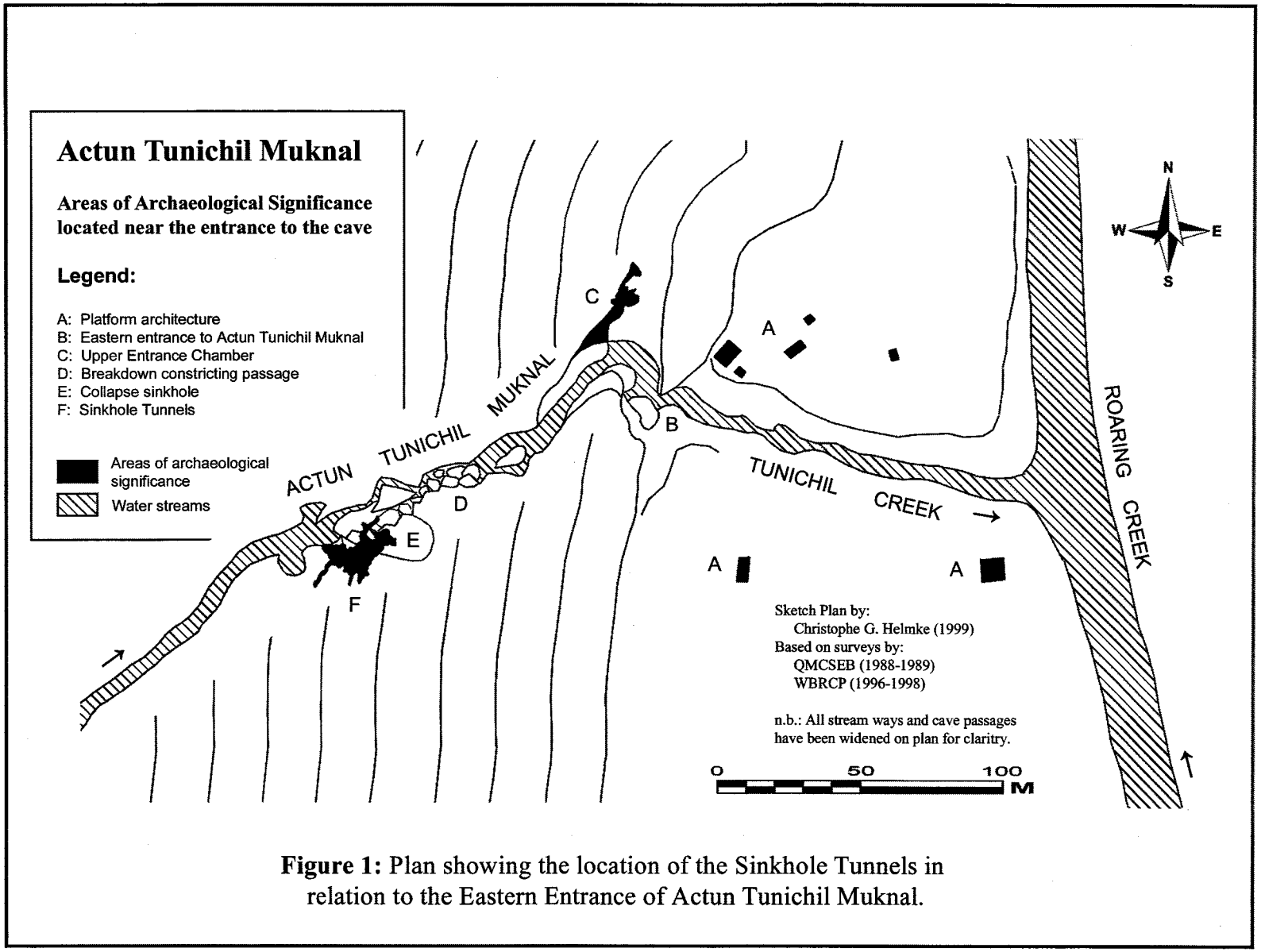

Figure 1: Plan showing the location of the Sinkhole Tunnels in relation to the Eastern Entrance of Actun Tunichil Muknal.

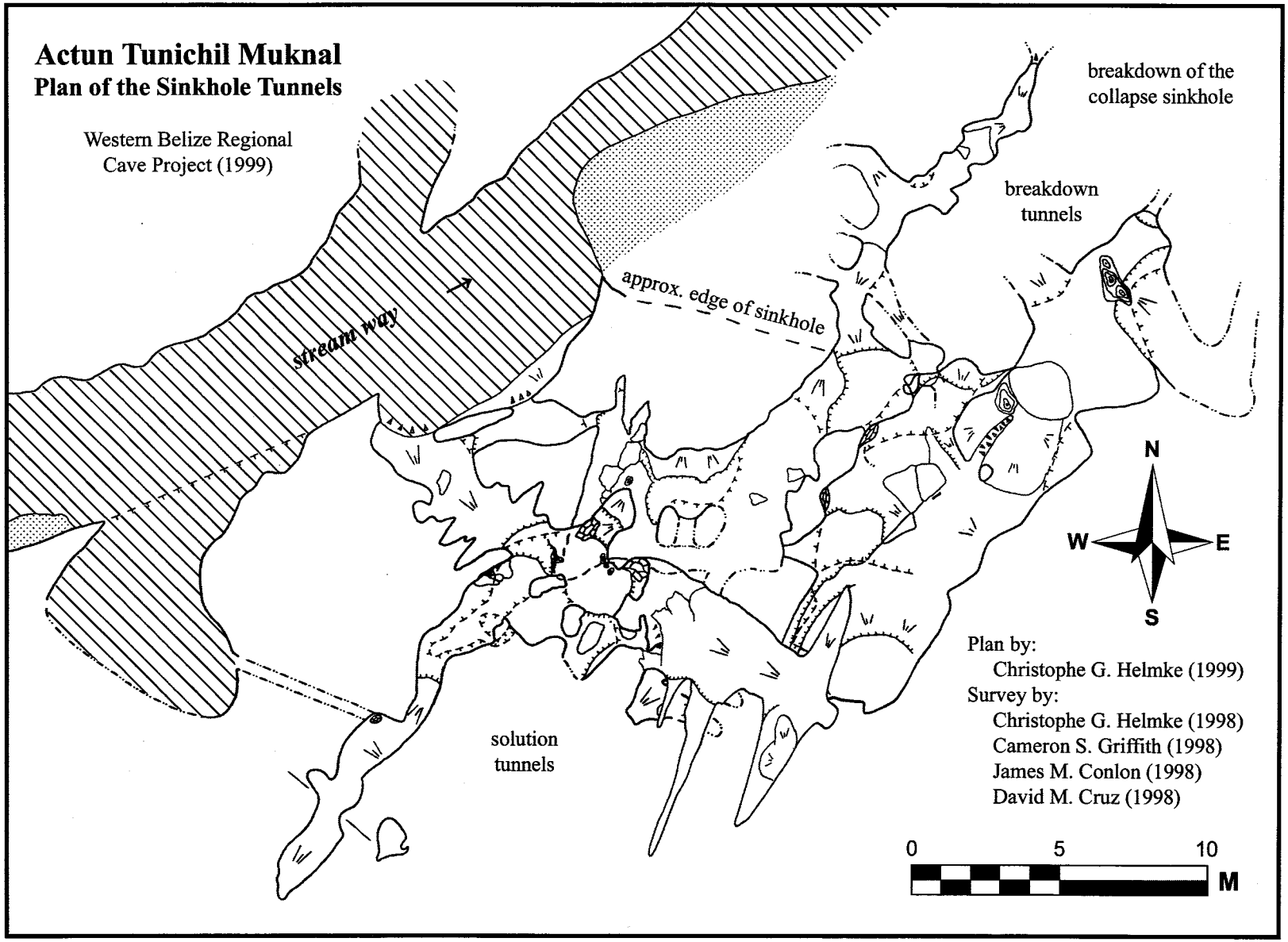

Figure 2: Plan view of the Sinkhole Tunnels.

are inclined, the steepest incline reaching a 63 degree angle. Coupling the narrowest passages with the lowest ceiling height makes for very slow and tortuous crawling. The same must have been true for the ancient Maya although they were of considerably smaller build. Due to the restrictive size of the tunnels only a few individuals could enter the tunnels at any time.

For descriptive purposes and to facilitate the gathering of provenience information during the surface collection, the system of tunnels was divided into separate areas on the map. These areas were labeled "Tunnel" 1 through 7, with a lower tunnel of two superimposed passages designated by the suffix "-sub". Although many of the tunnels connect to one another the size and/or lay out of the different areas were used as distinguishing characteristics. Prominent morphological features served as boundaries between each area. Although the distinctions between the tunnels are essentially arbitrary, they do convey a certain impression of ambient space that may also have been perceived by the Maya. The reader is referred to the map of the Sinkhole Tunnels indicating the area encompassed by each "tunnel" (Figure 3). A detailed description of the tunnels was prepared but is not included here for the sake of brevity (Helmke n.d.). Salient characteristics of the Sinkhole Tunnels are summarized in Table 1.

ARCHAEOLOGICAL INVESTIGATIONS

In 1997 the Sinkhole Tunnels were entered on two separate occasions. During the first entry ATM-Salvage Operation 2 took place and resulted in the retrieval of 3 ceramic specimens. At this time Tunnels 1, 2 and 4 were located but only partially explored. A subsequent visit the same year located and explored Tunnels 3 and 5. In 1998 the entire system of tunnels was explored on three separate occasions prior to launching archaeological investigations. Areas outside of the tunnels in the vicinity of the sinkhole were concurrently explored. These explorations were aimed at discovering the extent of the passages and the distribution of artifacts therein. This helped to establish the scale to use in the survey, as well as to design the procedures of the surface collection. The mapping operations took approximately 10 days. The surface collection was subsequently accomplished in 3 days. The end of the field season concluded the investigations inside the Sinkhole Tunnels.

Mapping Procedures

Survey baselines were set up by connecting datums to each other with string. Measuring the azimuth, slope angle, and length of these baselines allowed the surveying team to relate each connected datum in space. Since none of the tunnels have even floor surfaces, the baselines were not set up horizontally (i.e. level). As a result sloping baselines were exclusively used. Perpendicular and level offset measurements from the baselines were taken to secure the location of features. In some instances the sloping baseline would overshoot a feature and pass above it. In these instances it was necessary to use a plumb bob to integrate the feature to the offset measurement. Datums in superimposed tunnels were connected to each other vertically, with the use of a plumb bob. Consequently, duplicate datums appear in several passages but are represented as one datum in the horizontal plane of the map. It is hoped that the subsurface survey of the Sinkhole Tunnels can be plotted into a surface survey of the collapse sinkhole entrance in future seasons.

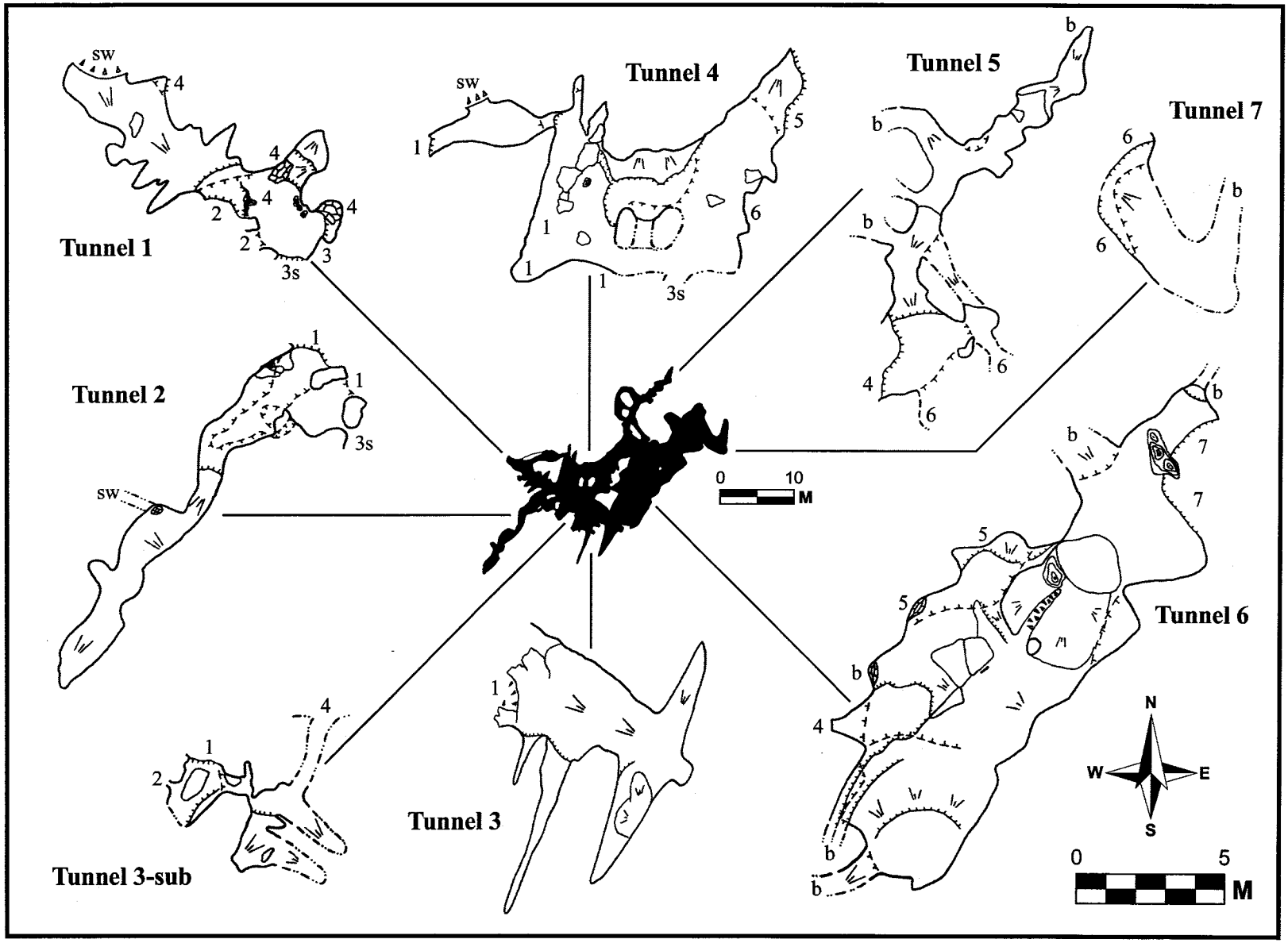

Figure 3: Plans showing the layout and size of the passages forming the Sinkhole Tunnels. Individual plans are shown extruded and offset to avoid overlap of the passages. Structural connections of the tunnels are also indicated.

The Surface Collection

No evidence of looting was seen inside the tunnels in either 1997 or 1998. This negative evidence, however, does not confirm that looting has not occurred. Since all the sherds in Tunnel 1 were found lying directly upon the bedrock floor, looting or displacement of material in recent years would have gone unnoticed. Nevertheless, the absence of looter pits in all tunnels that contain matrix suggests that no looting has taken place. All artifacts found in 1998 were partially embedded in undisturbed alluvial matrix, and no fresh breaks were seen. Consequently, the provenience of all the sherds inside the system of tunnels can be considered to be unaffected by modern human disturbance.

The surface collection followed the standard procedure formulated and employed by the WBRCP: 1) All visible artifacts are collected. 2) In cases whereby an artifact is seen protruding out of the ground the edges are cleared and a repeated attempt is made to retrieve it. 3) If there is any resistance or if removal of the artifact requires the least bit of excavation, it is left in place. Large or prominently visible artifacts were all photographed in situ. In instances where it was deemed necessary, plan views showing the distribution of artifacts within a cluster were drawn.

Artifacts were predominantly clustered in loosely defined groupings on the surface. In certain instances it was difficult to establish the boundaries of such groupings. Despite this, it seemed apparent that these clusters were the product of cultural or taphonomic processes. Thus, in order to ensure that the clustering was preserved upon collection, these artifacts were bagged separately. Setting up a grid system and assigning alpha-numeric provenience codes would have blurred the extent and content of these groups and was unwarranted due to the ample evidence of water disturbance. In the field all groupings were collected as separate lots and designated as "Clusters". In cases where the extent of a grouping was indistinct, boundaries were assigned and the artifacts were collected as a single lot. All clusters were numbered sequentially from 1 to 27, following the numerical sequence of the tunnels in which they are located (Figure 4). This procedure, though interpretative from the onset, preserves all provenience data and allows for the analysis of groupings that are potentially culturally significant.

TAPHONOMY AND ARTIFACT DEPOSITION

In several cases sherds were discovered wedged so tightly between rocks that these could not be retrieved (e.g. Clusters 2, 7, & 12). The presence of water-worn pebbles and remnants of cohune fronds (*Orbignya cohune* Dahlgren) in close proximity to, or wedged together with such sherds indicates that these were deposited in their modern context by strong water currents.

In passing it should be noted that the pieces of foliage and other forest debris that litter some sections of the Sinkhole Tunnels are a clear indication of periodic flooding and hydraulic activity within the system. In turn it can be assumed with relative certainty that the tunnels are structurally connected by swallow holes to the forest floor above the cave or by fissures to the collapsed sinkhole. Detailing the nature, frequency, and intensity of the flooding episodes would be the subject of a detailed geomorphological and structural appraisal of the tunnels. Michael Mirro has suggested that the foliage retained within the tunnels may be the result of the documented seasonal rise of the stream that flows through Actun Tunichil Muknal (pers. comm 1998). This hypothesis does not, however, account for the unequal distribution of foliage material between tunnels that are at similar elevations above the stream.

Exploring the matter in further detail is beyond the scope of this report, but may serve as the basis for an interesting geological analysis of the Sinkhole Tunnels in the future.

In other instances, sherds were found wedged into the fissures of breakdown "walls" (e.g. Clusters 16, 17, & 22). It is clear that these specimens were deposited there by natural causes, as is indicated by the alluvium that is wedged between the sherds and the bedrock. Sherds that are stacked in niches in the Main Chamber of Actun Tunichil Muknal (Moyes 1998; Helmke pers. observation 1996-1998) or similarly deposited sherds at Eduardo Quiroz Cave (Pendergast 1971: 112) are not so tightly wedged as to prohibit their extraction. These artifacts may represent the outcome of ceremonies involving the breaking of vessels, the removal of sherds, and finally the stacking of these sherds in niches (Pendergast 1971: 112). In contrast, the sherds from the Sinkhole Tunnels that were found wedged in fissures appear to have been locked into their modern location by strong water flow.

The best evidence of intensive water activity is indicated by sherds that display patches of a matte black color. These blotches do not represent slip since in some instances these patches occur on sherds of that were slipped a different color. Fire-clouding is also ruled out since it frequently does not affect the polished or glossy aspect of sherds. The black patches on the other hand do affect luster of sherds. Ceramics from underwater contexts are frequently stained organically, which can turn sherds a black color (Osterholtz 1999: 28). Consequently, it appears that several sherds from the Sinkhole Tunnels were stained organically by repeated contact with water. Organic stains on ceramics can be removed with a solution of 10 to 15 % hydrogen peroxide (Osterholtz 1999: 28). Tests will be conducted in 1999 to assess whether these stains can be removed with the hydrogen peroxide solution. Successful removal of these stains from the sherds would demonstrate that certain areas inside the Sinkhole Tunnels frequently flooded or were submerged for prolonged periods of time. In turn, these tests can serve to isolate the areas affected by water activity, based on the areas from which stained sherds were recovered.

Widespread evidence of hydraulic activity inside the tunnels suggests that many clusters of artifacts were not found in the locations where the Maya initially deposited them. Thus many clusters appear to be the result of taphonomic processes rather than representing culturally significant units.

In contrast, a few fragmentary vessels inside the Sinkhole Tunnels can be argued to be located near their place of cultural deposition (i.e. vessels of Clusters 5, 13, 15, & 19), although these instances represent exceptions to the rule. Areas that have been subjected to water activity can be determined based on the presence of water worn pebbles and coarse sand-sized alluvium. The direction of water flow can be determined by the dry channels left in alluvium. These data, along with the structural connections between tunnels, have been used to reconstruct the point of origin of sherds apparently displaced by water flow. Taking into account these factors, three areas of primary artifact deposition have been isolated: a) the southern half of the entrance tunnels (encompassing the southern end of Tunnel 1, eastern end of Tunnel 2, and northern end of Tunnel 3-sub); b) the western and eastern walls of Tunnel 4; and c) the southern portion of Tunnel 6 (Figure 5).

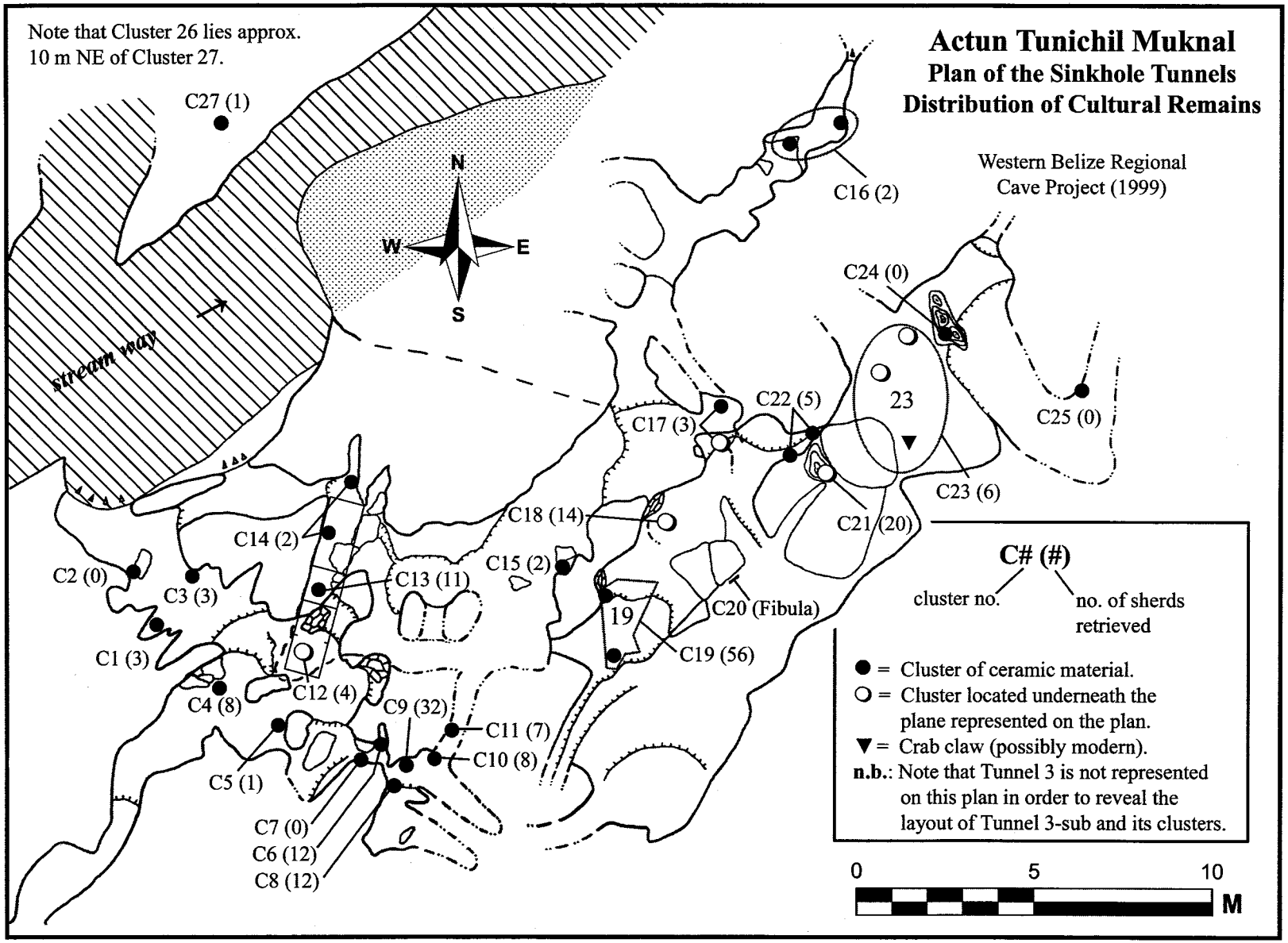

Figure 4: Plan showing the distribution of artifact clusters in the Sinkhole Tunnels.

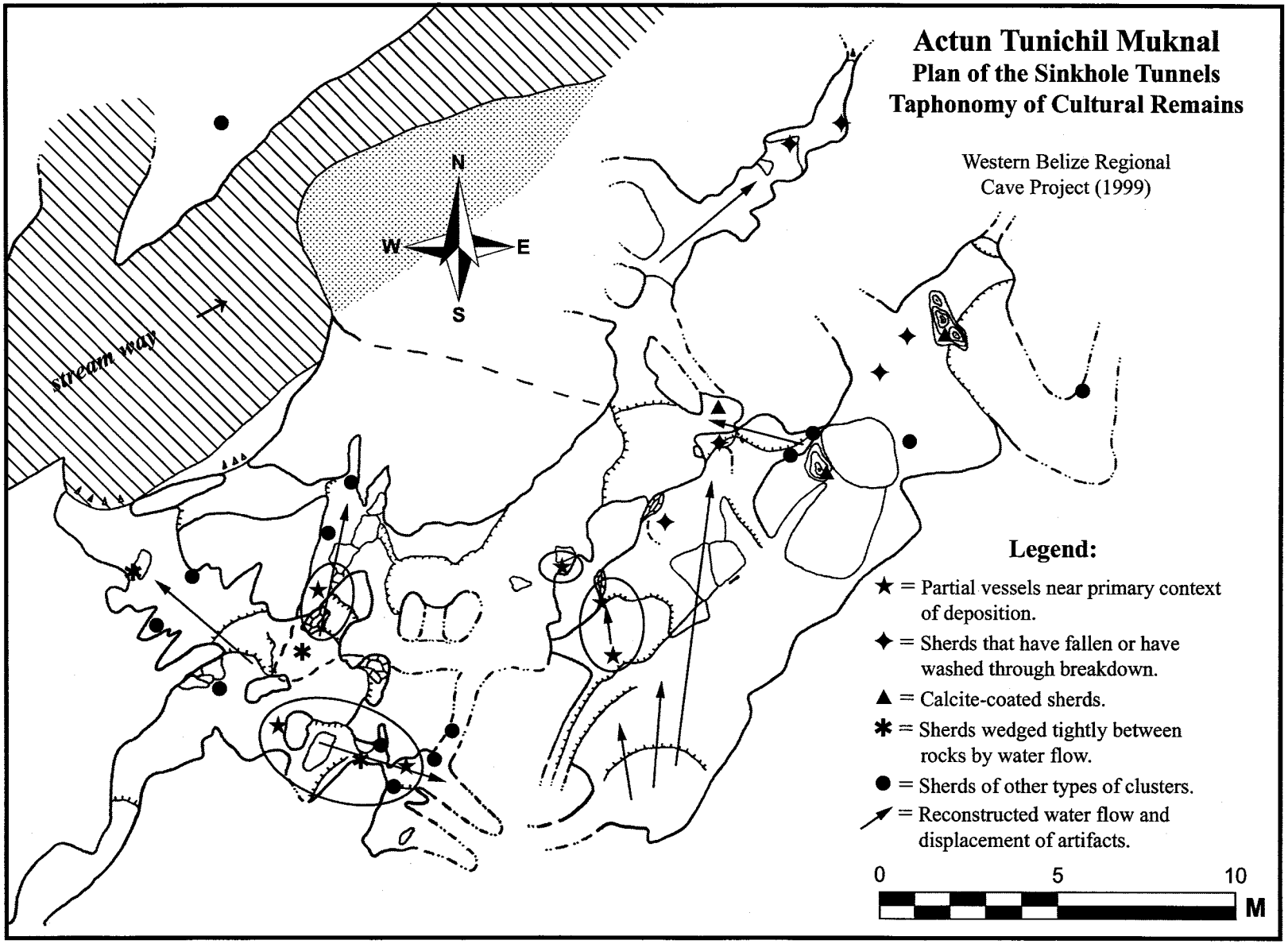

Figure 5: A reconstruction of the taphonomic processes involved in the deposition of the artifact clusters.

ARCHAEOLOGICAL SPECIMENS

The surface collection inside the Sinkhole Tunnels was conducted in order to retrieve all visible artifacts inside the system. Artifacts retrieved in this fashion form an assemblage that can be subjected to chronological assessment. The time span represented by this assemblage can be used to extrapolate the length of usage of these tunnels. Spatial distribution of diachronic ceramic types can be used to determine the length and period of usage of different areas within the tunnels. A diachronic spatial analysis of the frequency distributions of materials can then be used to establish areas of intensive usage. Examination of these elements can in turn reveal culturally significant patterning in the usage of the Sinkhole Tunnels.

With the exception of the human fibula, all archaeological material recovered in the surface collection is comprised of ceramic remains. Only 10 of the 27 clusters could be analyzed at the end of the 1998 season. Nonetheless, more than half of the 239 sherds were examined in 1998. At least one cluster from each tunnel was included in the initial analysis to gain a general overview of the material. The data presented here serves as a preliminary report since the ceramic analysis is not yet completed. Clusters analyzed in 1998 will be presented in numerical sequence below.

Clusters 1 & 3, Tunnel 1

Both of these clusters will be described together due to their relative proximity. Several ceramic sherds in total comprised both of these clusters. The body sherds that are too fragmentary to be identified are not described nor included in the total. Five large olla body sherds did not display sufficient diagnostic attributes and therefore could not be assigned type designations.

One of these has been modified into a circular shape (10cm in diameter) by spalling off the edges of the sherd. This sherd may have been used as the lid of an olla with a restricted orifice or as the lid of a censer (Jaime Awe pers. comm. 1998; see Awe 1985 for similar suggestion). A larger, though similarly modified sherd (ca. 30cm in diameter) was discovered in the Stela Chamber of Actun Chechem Ha during surveying operations. The discovery of a nearly complete Pedregal Modeled censer (Smith & Gifford 1966: 161; Adams 1971: 57, Fig. 106a; Sabloff 1975: 114-116; Figs. 217-225; Awe 1985) in that chamber, prior to the archaeological investigation of the cave, makes a strong case for the function of the sherd as the lid of a censer. The diameter of the censer, when recorded, may be prove to fall within the range of the modified body sherd. Hence, it is possible that the similar sherd from the Sinkhole Tunnels also may have functioned as a lid.

The two sherds retrieved in 1997 from these clusters offer a greater wealth of information than the olla sherds described above. A black-slipped rim sherd with a medial/lateral ridge also formed part of Cluster 1. The body profile of the vessel and the position of the ridge is a mode dated to the Tiger Run Complex (AD 600 - 700). On the other hand, the Balanza Black slip indicates ties to the Hermitage Complex (AD 300 - 600). The modal change from basal flange to ridge is documented for the Minanha Red type (Gifford 1976: 156-159) that spans the length of the Hermitage Complex (Gifford 1976: 157). Nonetheless the same was not documented by Gifford for the contemporary Balanza Black and Lucha Incised types (1976: 162). Since the Cluster 1 sherd is slipped with a Balanza Black type slip (see Gifford 1976: 161-162) it demonstrates that the modal change from flange to ridge did in fact occur for

the Balanza type although it is not documented for Barton Ramie. This furthermore indicates that although modally altered, the Balanza Black type persisted as late as the Middle Classic period (AD 600 - 700) in the Roaring Creek Valley. Consequently, this sherd may have ties to the Teakettle Bank Black: Teakettle Variety (Gifford 1976: 202-204, Fig. 118o) that dates to the Tiger Run Complex.

A rim sherd including part of the frontal body of a shoe pot was recovered from Cluster 3. The curvature of the body indicates that the sherd was part of a shoe pot (Jaime Awe pers. comm. 1998). The exterior of the sherd is decorated with undulating bands of incised applique and deeply crossed applique bosses. This mode of decoration is prevalent on ollas of the Socotz Striated type (Gifford 1976: 189) of the Hermitage Complex (Gifford 1976: 188-189). Two additional shoe pots have been discovered in the Main Chamber, but these are undecorated and deeply striated. The Sinkhole Tunnel shoe pot is the only decorated one discovered in Actun Tunichil Muknal thus far. In sum, based on the diagnostic types of Clusters 1 and 3, usage of Tunnel 1 appears to span the Hermitage and Tiger Run Complexes (AD 300 - 700).

Cluster 4, Tunnel 2

The 8 sherds forming this cluster are all unidentified and unslipped body sherds. Some of these sherds are striated, suggesting that these may have been parts of ollas. The large rim sherd of a wide orifice olla that forms Cluster 5 is diagnostic but was not examined in 1998.

Cluster 9, Tunnel 3-sub

Of the 32 sherds comprising this cluster, 21 are small and medium body sherds. Three large olla body sherds were also found. Diagnostic sherds include 4 olla rims, 1 bowl rim, 1 dish rim, 1 annular base of a dish, and a portion of a flat base. Among the olla rims the Cayo Unslipped (Gifford 1976: 276-283) and Socotz Striated (Gifford 1976: 186-189) types are represented. The two Cayo Unslipped sherds have a thin brown wash on the interior surface which is also characteristic of the type (Gifford 1976: 279). The Socotz Striated sherd was identified on the basis of the rim profile (see Gifford 1976: Fig. 105i) but is badly weathered and all evidence of striations have eroded. The bowl rim is a typical Garbutt Creek Red: Paslow Variety (Gifford 1976: 231-233). The dish rim indicates that it was part of a shallow dish with an exterior medial/lateral ridge. The interior was slipped red while the exterior was left unslipped. The annular base has a similar paste, is slipped with the same red slip on the interior and its exterior was also left unslipped. The profile of the base indicates that it too was part of a shallow dish. Consequently, both sherds are thought to have derived from the same vessel. Using the attributes of both sherds the vessel can be assigned to the Mountain Pine Red: Mountain Pine Variety (Gifford 1976: 193). The sherds of this cluster span a time period from the Early Classic through the Terminal Classic (AD300 – AD900).

Cluster 13, Tunnel 4

None of the sherds collected from Tunnel 4 could be examined at the end of the 1998 season. The partial vessel removed from Cluster 13 in 1997 will, however, be described. The specimen represents the fragmentary base of a cylindrical vase with tripod oven foot supports. The vessel has a bright orange paste, is completely unslipped, but has a well-burnished exterior. The interior was less well finished than the exterior and faint temper drag marks are visible. Only one of the three feet was found still adhering to the flat base and contained a ceramic rattler ball. The foot scars of the remaining

two feet are noticeable but the supports were not recovered. On the exterior, above the lower basal break is a deeply incised pseudoglyphic band that is framed by horizontal plain ridges. Between each pseudoglyph are vertical plain bands of similar dimension as the horizontal ridges. Immediately above the basal decorative band rises diagonal fluting. The majority of the body appears to have been decorated with diagonal fluting as is evidenced by a body sherd recovered in 1998 during the surface collection. Rim sherds of the vase were also discovered in 1998. Diameter measurements of the rim indicate that the orifice was smaller than the diameter of the base. Consequently, the body profile of the vase must have been slightly barrel-shaped. The rim was decorated with the same pseudoglyphic sequence as the base, but inverted. Remnants of the fluting can be seen on the lower portions of the rim sherds as well.

The vase shares attributes of several established ceramic types. The oven feet are a mode of the Late Classic (AD 700 - 900) as is the body profile of the vase. The fluting shows affiliations to the Gallinero Fluted (Gifford 1976: 262, Fig. 166) and Tialipa Fluted-incised types (Chase 1994: Fig. 13.9c; see also Canoa Incised: Gifford 1976: 254, Fig. 159d), while the incised pseudoglyphs are stylistically related to those of the Martins Incised (Gifford 1976: 262, 265, Fig. 167) and the Puhui-Zibal Composite types (Gifford 1976: 266, Fig. 168; see also Gifford 1965). All these attributes are characteristic of Late Classic, Tepeu 2 and 3 ceramics (AD 700 - 900) (see Smith 1955). A similarly fluted, but undecorated vase has been found at Altun Ha (Pendergast 1982: Fig. 93u). Although it has not been conclusively associated with a ceramic phase, it distinctly post-dates AD 700 (Pendergast 1982: 168). Thus, it is clear that the vase dates to the latter half of the Late Classic. Rather than pigeonholing the vessel to a particular type it is designated as a "special" specimen that at the present time is too unique to type. It is possible that the traits exhibited on this vase are the product of a regional variation outside of the range of variation of attributes associated with a type established at other sites. Consequently, the discovery of similar specimens in the future may substantiate its designation to a new or established ceramic type. This view is also shared by Joseph Ball (pers. comm. 1998).

Cluster 18, Tunnel 5

In all 14 sherds were retrieved from this cluster. Ten of these could not be identified as they lacked diagnostic attributes. These are represented by 1 large olla body sherds, 2 medium-sized body sherds, and 7 smaller body sherds. The diagnostic sherds include 3 olla rims, and the rim of a bowl. The ollas were identified as Jones Camp Striated (Gifford 1976: 215, 218-219), Cayo Unslipped: Cayo Variety (Gifford 1976: 276-279), and Cambio Unslipped (based on rim profile) (Sabloff 1975: 153-155, Figs. 288c, 289). The bowl is a Mount Maloney Black: Mount Maloney Variety (Gifford 1976: 243-245). The sherds thus represent a time span ranging from AD 600 - 900. As was mentioned above, these sherds may have fallen through breakdown from Tunnel 6. This possibility will be evaluated in 1999 by attempting to conjoin sherds from different lots.

Cluster 19, Tunnel 6

A large portion of this cluster (composed of 56 sherds) was examined in 1998. Of the five olla sherds in this cluster, 2 were securely typed as Zibal Unslipped (Gifford 1976: 222-225) and Cayo Unslipped (Gifford 1976: 276-282). A third olla rim has the profile of a Yaha Cream (Gifford 1976: 272-273, Figs. 177i, l, m) and an Alexanders Unslipped (Gifford 1976: 283-286, Fig. 184p). Complete ollas from Actun Polbilche (Pendergast 1974: 23, Fig. 6b; 27, Fig. 8a; 29, Fig. 8c) and one from Tarantula Cave (Helmke et al. 1999: Vessel 12) also have the same rim profile. All the specimens date

to the Terminal Classic, although in all instances clear associations with a single ceramic type is a matter of complication. A fourth olla rim has not yet been securely identified. A portion of the neck of an olla displays a mode of decoration that is prevalent on ollas of the Pantano Impressed: Pantano Variety (Sabloff 1975: 164, 166, Fig. 312). The absence of the rim on this sherd disables a secure type designation, but the decorative mode suggests a Late to Terminal Classic date.

A total of 4 bowl rims were identified in the cluster. Two bowl rims were recognized as being of the Garbutt Creek Red type (Gifford 1976: 230-233). Seven red-orange slipped body sherds may have been derived from the Garbutt Creek Red bowls although no attempt was made to conjoin these to the rim sherds. A third bowl sherd has a ring base with traces of unevenly applied red slip on its exterior. The profile is Late Classic, similar to bowls of the Yalbac Smudge-Brown type (Gifford 1976: 244-247) and has been assigned to the Vaca Falls Red: Vaca Falls Variety (Gifford 1976: 235-237). The fourth bowl sherd was securely identified as a San Pedro Impressed: San Pedro Variety (Gifford 1976: 196, Fig. 110h-k, 111i).

Ten dish sherds were recovered from this cluster. Nine of these conjoin to form part of a Platon Punctated-Incised: Platon Variety dish (Gifford 1976: 257, 259). The decorative mode of this dish is typical of the ceramic type but differs stylistically from the decorations of vessels represented at Barton Ramie (Gifford 1976: Fig. 164a, c, e, g, I). The specimen from the Sinkhole Tunnels has an incised line running along the exterior basal break, with a row of thumb impressions running beneath it. In addition, fields of four parallel incisions run vertically from the basal break to the rim of the dish. The tenth sherd represents a rim of a Tialipa Brown: Variety Unspecified dish (Gifford 1976: 254, Fig. 159a; Smith 1955: 172). This sherd also differs from the description of the established type in that the lower half of the interior of the sherd is of a black color. At the present time it is unclear whether this black color represents a slip or an organic stain.

The remaining 30 sherds from this cluster are undiagnostic and unslipped body sherds. Eight of these are too small to be subjected to any analysis. These are most likely derived from ollas. Based on the diagnostic types it appears that Cluster 19 dates predominantly to the Spanish Lookout Complex (AD 700 - 900), although two sherds were identified as dating to the Tiger Run Complex (AD 600 - 700).

Cluster 20, Tunnel 6

This cluster is defined by the human fibula. Since the fibula was missing both its proximal and distal ends, the specimen could not be used to estimate stature or to generate any additional information (Sherry Gibbs pers. comm. 1999). Unless the bone was deposited singly, it is quite possible that additional human remains are still buried in the alluvium of Tunnel 6. The fibula appears to have washed down into its present location, although its point of origin could not be determined.

Cluster 21, Tunnel 6

This cluster is represented by 20 sherds. Two of 3 olla rims recovered have been identified as Cayo Unslipped (Gifford 1976: 276-282). The third olla rim is thin-walled, has a red slip on its exterior and is most likely related to Tinaja Red: Tinaja Variety (Smith 1955: Fig. 47c, 1-7; Adams 1971: 23, Fig. 58b; Sabloff 1975: 158-160, Figs. 296-297) or Cayo Unslipped: Red-slipped Variety (Gifford 1976: 282-283). No type determinations have been assigned to the 3 olla shoulders from this cluster. A Garbutt Creek Red: Garbutt Creek Variety (Gifford 1976: 230-231) bowl rim was also located. Rare

examples from Barton Ramie are reported to have a small incision running along the exterior, just below the rim (Gifford 1976: 231, 233). The Cluster 21 specimen also has a horizontal incision running below the rim, but on the interior of the bowl. Regional variation may again account for the decorative difference on this specimen. The remaining sherds from this cluster lack diagnostic attributes.

Cluster 23, Tunnel 6

The northern breakdown area of Tunnel 6 was arbitrarily defined as a cluster. Six sherds were collected from this area. Only one diagnostic sherd was retrieved from the cluster. The bowl sherd displays a portion of rim and a pronounced, though relatively short, basal flange. The sherd was not available for study at the end of the season and was consequently not assigned to a particular ceramic type. The mode of the sherd indicates that it dates to the Early Classic (AD 300 - 600) or to the Protoclassic (100 BC - AD 300). Thus far, this sherd is the earliest ceramic specimen identified from the Sinkhole Tunnels. As a result this sherd stands in stark contrast to all other sherds from Tunnel 6, which have been dated to the Tiger Run (AD 600 - 700) and Spanish Lookout Complexes (AD 700 - 900). It is possible that this sherd was initially deposited in the collapse sinkhole, but subsequently fell through the breakdown into the northern portion of Tunnel 6.

Cluster 26, Stream Way

This cluster is represented by a fragmentary outflared and shallow dish. This specimen was discovered outside the Sinkhole Tunnels in a fault elevated approximately 3 meters above the stream way. This fault penetrates into the northwestern wall of the sinkhole that overarches the stream way. This wall lies opposite to the breakdown of the sinkhole that extends to the east and south. The interior of the dish is extensively pitted and the majority of slip has weathered. Nevertheless, traces of red and black designs are still visible. Apparently the interior was painted polychrome, although details of the decorative scene are difficult to distinguish. The exterior was left unslipped, exhibits a medial ridge, and a ring base. Based on these attributes the dish has been assigned to the Saturday Creek Polychrome type (Gifford 1976: 198-201), of the Tiger Run Complex (AD 600 - 700). To date this is the most complete Tiger Run phase dish recovered by the WBRCP in the Roaring Creek Valley.

Cluster 27, Stream Way

Less than 10m southwest of Cluster 26, another ceramic cluster with 5 sherds was discovered. Only the most unique specimen was collected in 1998. This cluster lies atop a large breakdown block that frames the western side of the stream way. The surface of this large boulder is nearly level but drops steeply to the stream that flows 3m below it along its base.

The ceramic specimen is bowl-shaped, unslipped, and thick-walled. The exterior is covered with deep thumb impressions that penetrate as much as 0.5cm into the paste. Abrasions along the lip of sherds are frequently taken as an indication of basal sherds. Absence of this feature indicates that the sherd does not represent the base of a vessel. The specimen could not be associated with an established type and apparently represents a "special" specimen. Similarities in body profile, thickness, and lip shape between the sherd and the lids of "chimneyed" incensarios from Altun Ha (Pendergast 1979: 72, Fig. 17a, b, r; 1982: 90, Fig. 61d) suggest that the specimen may have formed part of a censer. Since the sherd could not be successfully associated with an established ceramic type its dating remains problematic. Impressed types occur through the entire length of the Classic (AD 300 - 900), although this mode predominates during the Tiger Run and Spanish Lookout phases (AD 600 - 900) at Barton

Ramie (see Gifford 1976: 60). Nevertheless, none of the types from Barton Ramie are impressed as extensively, or as deeply, as the Cluster 27 specimen. The simpler "chimneyed" censers from Altun Ha date to the Ceh and Mac phases (AD 500 - 650), while the more elaborate censers with lids modeled in the form of gaping felines (Pendergast 1982: 128, Fig. 80e, 81a) date to the Pax phase (ca. AD 850 - 875). It is hoped that similar specimens, or sherds conjoining to the specimen, will be recovered in the future. These may clarify the function of the vessel, as well as assist in a ceramic type designation.

DISCUSSION

The ceramics from the Sinkhole Tunnels are dominated by the types most frequently encountered in the Roaring Creek Valley. All additional ceramic specimens are surprisingly varied and display a relatively pronounced regional variation. At the present time it is impossible to determine whether such variation is caused by the function or regionality of the ceramics. Both explanations need to be pursued further and may yield pertinent information regarding discrepancies in regional cave usage as well as elucidate which types of archaeological material were destined for usage in caves.

The relative frequency of vessel shapes represented in the Sinkhole Tunnels assemblage is dominated by ollas, which make up half of the sherds. An additional fourth of the assemblage is represented by bowls, particularly Late Classic tecomates. All other vessel shapes make up the remainder of the assemblage, with dishes representing as much as 18 %. Similar frequency distributions have been observed at Tarantula Cave (Helmke et al. 1999), and other caves in Belize. If the vessels that were deposited are representative of the activities conducted in caves, these frequencies will be significant with regard to the elements that comprised cave usage in antiquity.

Although the ceramic analysis has not been completed it is apparent that the ceramics from the Sinkhole Tunnels date between the Early Classic and the Terminal Classic. Since all the ceramics were recovered from the surface, outside of stratigraphic or sealed contexts, it is unclear whether the time span represented by the sherds parallels the period of usage. It could be argued that the earliest ceramics were brought to the tunnels in fragmentary or complete condition as curated or valued items. Additionally, at surface sites it is a customary practice to date architectural phases to the latest sherds contained in construction fill (e.g. Ehret & Conlon this volume). Taking these factors into account, the usage of the Sinkhole Tunnels can be firmly established to the Late and Terminal Classic periods (AD 700 - 900). Nevertheless, if it is considered that the ceramic assemblage amassed in the Sinkhole Tunnels is the product of ritual pilgrimages over a period of time (as is generally postulated by the current paradigm), then the Sinkhole Tunnels can be seen to have been used between the Early Classic and the Terminal Classic (AD 300 - 900).

One pattern that emerges from the preliminary analysis is that the number of diagnostic sherds increases exponentially from the Early Classic to the Terminal Classic. Although the assemblage is small and only a portion was been examined in 1998, the relative frequencies of diagnostic types are of significance. Ten percent were dated to the Hermitage Complex (AD 300 - 600), 20 % to the Tiger Run Complex (AD 600 - 700), and over 60 % to the Spanish Lookout Complex (AD 700 - 900). Inevitably these relative frequencies will alter once the analysis is completed, but their overall ratios are not expected to change significantly. Consequently, it is clear that the usage of the Sinkhole Tunnels peaked during the Late Classic. Similar observations have been made, based on a qualitative assessment

of diachronic ceramic distributions at several other caves (Awe 1994a, b). Social stress and changes in the manifestations of ritual behavior have been suggested as explanations of this dramatic rise in cave usage (Awe 1994a,b). No single factor can be isolated at this time to explain the causes of this alteration, but it is clear that cave usage systematically increased during the latter half of the Classic.

The Sinkhole Tunnels are the fourth area of cultural significance discovered inside Actun Tunichil Muknal. All the data formulated for the Sinkhole Tunnels take on a more significant dimension when they are compared to the material from the other chambers inside the cave. Another interesting pattern emerges when the distance at which these four areas lie from the entrance is taken into account. The largest concentration of Hermitage ceramics (AD 300 -600) is found in the Entrance Chamber that lies just a few meters from the entrance. The number gradually diminishes as the distance increases from the cave entrance, until only one Hermitage sherd is found at the Stelae Chamber. The Sinkhole Tunnels are located between these two areas and Hermitage ceramics from this locus number between both extremes. The Main Chamber lies furthest inside the cave and all ceramics identified in that chamber have been dated to the Spanish Lookout Complex (AD 700 - 900) (Moyes & Awe 1998). Thus, it is clear that early usage of Actun Tunichil Muknal was concentrated at the entrance and did not penetrate far into the cave. The opposite is true of the late usage of the cave. This pattern had previously been suggested by Awe (1994 a, b) for other caves in Belize. What is significant is that this pattern is duplicated at Actun Tunichil Muknal and that the discovery and investigation of the Sinkhole Tunnels reinforces Awe's (1994a, b) hypothesis. Additionally, this pattern had never been subjected to the comparison of relative frequency distributions. A final pattern that has been isolated by the ceramic analysis is that the intersite patterning of diachronic usage of the cave is reflected on a micro-scale within the Sinkhole Tunnels. Thus, the earliest ceramics are found in the entrance to the Sinkhole Tunnels (Cluster 27, Tunnels 1, 2, and 3-sub), while the largest concentration and the latest ceramics are found in the deepest chamber of the system of tunnels (Tunnel 6).

All the patterns discerned above appear to be diagnostic indicators of the types of activities conducted within caves. These patterns will be thoroughly examined in future seasons and at several caves in western Belize. It is believed that these data will be informative with regard to the changing role and perception of caves in Maya society over time and space.

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PRELIMINARY REPORT OF INVESTIGATION ON LEDGE 1 AT ACTUN YAXTEEL AHAU

Michael Mirro
Radford University

Jaime J. Awe
University of New Hampshire

INTRODUCTION

This report describes archaeological research that was conducted on Ledge 1 of Actun Yaxteel Ahau by the WBRCP in1998. Yaxteel Ahau was first reported by Jaime Awe after a brief reconnaissance that was conducted by members of the Belize Department of Archaeology in 1977. Geologist Tom Miller subsequently visited the site in the 1980's, produced the first map of the cave (Miller 1990) and coined the name Yaxteel Ahau. It should be noted, however, that the site was originally recorded as Pancho Carranza Cave (in the Department of Archaeology files in Belmopan) by Awe.

Following Miller's geomorphological work, a British speleological expedition visited the site and produced a brief report (Roberts 1990) which noted the presence of archaeological materials in the cave. The 1998 research by the WBRCP represents the first archaeological investigation of the site. Our study included more detailed mapping and exploration of the cave, with special focus on Ledges 1 and 2. This paper reports in detail the investigations conducted on Ledge 1. It describes the cultural materials recorded on the ledge, and notes that prehistoric Maya activity at Yaxteel Ahau extends from Late Preclassic to Late Classic times.

DESCRIPTION OF ACTUN YAXTEEL AHAU

Actun Yaxteel Ahau (Cave of the Ceiba Tree Lord) is located along the base of a hill range which borders the eastern side of the upper Roaring Creek Valley. There are several other cave sites in the area. To the south is Actun Uayazba Kab, Actun Tunichil Muknal, and a smaller cave known as Actun Nakbe (located at the terminus of a causeway that links this cave to Cahal Uitz Na). Actun Tunichil Muknal is located 1.7 km SW of the easternmost entrance of Yaxteel Ahau. Uayazba Kab is located about 0.5 km further south (see Conlon and Ehret this volume). Other caves in the area include Box Chi'ich, Sak T'u'ul, and Sak Ch'o; but archaeological documentation of these cave sites has yet to be conducted.

Approximately 1.8 km upstream from Yaxteel Ahau is Cahal Uitz Na, the only known major surface site presently known for the upper Roaring Creek valley. Cahal Uitz Na contains several courtyards with pyramidal structures, range-type buildings, a ball court plus several slate and limestone stelae (Awe and Helmke 1997).

The river that continues to shape Actun Yaxteel Ahau is a major tributary of the Roaring Creek. Miller states that: "Yaxteel is a large conduit that frequently intersects fossil levels about 20 meters higher. A major water source of the valley, it was given the ancient name the Maya were using for the river years before, when the Spanish arrived, " (Miller 1990:33). The cave is 1011 m in length. The Yaxteel Ahau stream originates from a sump in the rear of the cave and flows out of the main entrance (Miller, 1989,1990:34). A small tributary also enters the cave about half way to the rear.

Actun Yaxteel Ahau can be accessed through at least four entrances: the main entrance, a second entrance in a sinkhole at the eastern end of Ledge 1, a third entrance across the sinkhole, and a fourth entrance at the rear of the cave. Six areas of cultural significance were recorded in the cave. All of these areas are located on ledges (Ledges 1-6) above the river.

Ledge 1 is the first area of the cave (from the main entrance) that contains cultural remains. From east to west this ledge is well over 100 meters long and is approximately 40 meters at its widest point. The river forms the northern boundary of the ledge. Solid bedrock walls form the southern boundary. Across the river from the eastern edge is a large sinkhole. Daylight that comes in through this entrance brightly illuminates the ledge in the morning. To access the deeper sections of the cave it is necessary to walk through the water or cross the lower end of Ledge 1 through a section of breakdown. The river here varies from two meters deep to ankle deep. There are several rapids to the east and the river becomes a calm pool to the west. Near the eastern extremity of the ledge is the second entrance. This entrance is located on Ledge 4 on the opposite side of the river from Ledge 1. Entrance2 provides light for the eastern end of Ledge 1 but the middle section of the ledge receives very little to no natural light.

DESCRIPTION OF LEDGE 1

During our investigations Ledge 1 was divided into three areas which contained evidence of prehistoric Maya activity: the ledge, the breakdown, and the beach. The ledge consists of several shelves, solution tunnels, and small chambers that are located high above the stream and which are connected to each other. This area is accessed by either climbing over the breakdown or up a talus slope above the beach. Both the breakdown and the beach contain evidence of prehistoric Maya activity but cultural materials are not as concentrated as on the ledge. While very little work was conducted in the breakdown and beach areas in 1998, several areas of cultural significance were noted. These are described below.

The Breakdown

The breakdown consists of very large boulders, which, over time, have collapsed from the ceiling and from the wall on the southern bank of the river. Many of the boulders range in size from 5 to 12 meters in diameter. They are haphazardly stacked against the southern wall and create an incline which leads to the main entrance of the ledge. Travertine and drip-water formations (stalagmites) are relatively common on top of several of the boulders.

The lower part of the breakdown is more densely packed with rocks than the top. The cracks are filled in with gravel and sand. Flood debris has accumulated in some of the lower areas. Despite this compaction, there are many open gaps and spaces which provide access to regions underneath the breakdown. Close inspection revealed several cultural features in this area.

At the back of the breakdown, between a large slab of rock and the cave wall, is a small "rainy season" waterfall. The pool at the base of the waterfall was dry in June-July of 1998, however, a small deposit of jute shells was observed in this pool. Most of the shells have their tips removed suggesting anthropogenic modification in the past. Some of the shells are also covered with a thin layer of calcite. This may be due to the precipitation of calcite in the waterfall.

In the north end of the breakdown is a large boulder with a possible platform above it. The platform is formed by a line of three or four stones that apparently served as a retaining wall. The area behind the stones was filled with sand and forms a level surface on the boulder. The boulder is sloped and the stones of the retaining wall are aligned perpendicular to the slope. Several sherds and lithics were noted on the surface of the platform. Above the line of stones, on top of one of the largest boulders, is a small depression filled with guano. Sitting upside down under the southern side of the boulder is a small bowl about 12 cm in diameter. Underneath this bowl is an even smaller bowl, very crudely made, with finger impressions on the surface. In another depression, located on the northern side of this boulder, there is a near complete olla with a 3 cm chip broken off of the lip. The olla, roughly 22 cm in diameter at its widest, is situated with the orifice, or rim, resting on the ground.

The Beach

The beach is located upstream and to the east of the breakdown. Organic remains (in the form of leaves, nuts and twigs) on the beach surface suggests that this locus is seasonally flooded. Several large boulders block immediate access from the beach to the river. To access the latter, one must either climb over these boulders or squeeze between them. The rear section of the beach is bordered by a wall of exposed bedrock that is relatively vertical except at the base where it has been undercut by the water for several meters. The beach area ends in the east where a muddy talus slope descends from the ledge. The talus slope is the second major access up to the ledge.

Near the talus slope the undercut in the southern wall is deeper than anywhere else along the beach and resembles a rock shelter. The eastern half of the undercut is filled with collapsed debris from the talus slope. Along the center of the "shelter" is a line or rocks with a general north-south orientation. The east side of the rocks is filled with clay and suggests that the feature may represent another crude platform. In association with this feature there are a number of artifacts. At the extreme southern end is a dense concentration of ceramics. The pottery is distributed along the rear walls and extends to the edge of the shelter. There are only a few sherds found in the central area of the shelter. Below a stone near the wall is a granite mano. Amidst the sherds along the western wall there is also a fragment of a chert biface. Fewer cultural remains were noted in the lower levels of the beach. This may likely be due to the fact that this area floods during the rainy season or because of widespread looting at the site.

The Ledge

During mapping operations the ledge, which contains the greatest concentration of cultural remains, was divided into ten separate sub-areas. Described below, these sub-areas include Entrance 1, Chambers one through eight, and the Upper Chamber.

ENTRANCE 1

Entrance one forms the westernmost portion of the ledge. From here one can see across the river to the large breakdown near the main entrance to the cave. Diffused light illuminates the front or northern portion of the area. As one approaches the entrance through the breakdown it is necessary to cross a large 10 to 12 m deep crack by means of a boulder bridging the gap. The ceiling at the northern end is more than three meters in height. As one moves south towards the rear of the chamber, the ceiling height drops considerably and crawling is necessary. Elsewhere the walls of the chamber are deeply convoluted with alcoves, several of which contain very small tunnels leading to the other chambers on the ledge. A large part of the floor in the Entrance 1 area is either clay or bedrock except inside the alcoves where guano overlies clay. The eastern wall of the chamber contains many speleothem formations while the ceiling and west wall are composed of brecciated limestone.

There is a substantial amount of ceramic remains in Entrance 1. They are particularly concentrated in the rear portion of the chamber and consist mostly of olla sherds. Near the front of the chamber, only about six sherds were noted. In a small, dry gour pool on the western side of the passage there is also an obsidian blade fragment. In the alcoves on the sides of the passages, and within small niches in the flowstone, more sherds are found on the floor. In one of the small niches in the flowstone there is a deposit or cache of 50 or more jute shells. It appears that most of the jute had their tips removed. Mixed with these shells were several flecks of charcoal.

Several looter pits were recorded in Entrance 1. The first is located next to the jute cache and a second pit was noted just south of the jute cache at the entrance to a small alcove. The latter actually consists of two pits and contains no artifacts. The pits were excavated into a layer of clay beneath the guano surface. The first looter's pit is well over a meter square and ranges from 5 to 15 cm deep. Several artifacts were noted in the backdirt, including fragments of a stripped polychrome basal flange vessel, several body sherds, olla rims, and red slipped pottery.

Entrance1 connects to several other loci on the ledge. In the southern end of the chamber a small crawl leads to a low section of Chamber 4. From the northern end it is possible to access both Chamber 1 and the Upper Chamber. The passage to Chamber 1 is directly under the passage to the Upper Chamber. In the alcoves of the eastern wall it is also possible to enter the Upper Chamber as well as the alcoves of Chamber four.

CHAMBER 1

Chamber 1 is accessed via a small passage leading east from Entrance 1. The passage slopes down and opens immediately into the chamber. Inside the chamber it is completely dark save for a small niche in the northern wall that opens to a small ledge overlooking the river passage and the main

entrance. The ceiling of the chamber is approximately 2m in height at the center but decreases significantly near the walls. The room is circular in shape. The floor is relatively level and is made of a compressed guano matrix. The walls and ceiling are composed primarily of dry flowstone. In the southwest part of the room there is a concentration of columns which form several niches and alcoves.

Chamber 1 contains substantial evidence of prehistoric activity. Near the southwest wall, by the columns, is a dense concentration of ceramic sherds. Nearby we recovered a distal portion of an obsidian blade. On the opposite wall, to the north near a small crawlspace, there is another concentration of potsherds. A second obsidian blade was found west of this area, near an exit to Chamber 8. The blade was next to a circular depression dissolved into bedrock. Also worth noting is that against the eastern wall, at the base of a flowstone, there are several broken speleothems strewn across the floor. It is difficult to say whether or not they were purposely placed in this context in antiquity, but this could likely be the case. Next to the formations it appears that looters had attempted to reassemble several fragments of a large olla.

Three looter's pits were noted in Chamber 1. The first two were excavated along the southwest wall near the columns. One pit was excavated to bedrock but the other was shallower. Both are about 40 to 50 cm in diameter. Many potsherds and a few jute shells were noted in the backdirt. A third pit was excavated near a crawlspace in the north wall. This is more of a surface disturbance and seems older because it was covered by a coating of bat guano.

Chamber 1 connects to two other areas beside the Entrance. The southern part of the room leads into Chamber 2 via a small corridor. Another passage, divided by a large column, leads east into Chamber 8.

CHAMBER 2

Chamber 2 is completely dark. Surprisingly, the sounds of the river can be heard quite loudly in the room despite the fact that there are no direct passages to the river. The chamber shares many similarities with the other chambers on Ledge 1. At its center it is roughly two meters high and as one approaches the walls the ceiling height decreases. A line of columns in the southwestern portion of the room separates it into two sections: a flowstone slope and a lower more level area. In the vicinity of the slope the ceiling is very low and contains many drip-water formations. The lower part of the chamber is covered with guano above a thin layer of clay. The top of the guano has a crunchy feel to it probably as a result of calcification. The southern side of the chamber is decorated with speleothems. Stalactites, columns and stalagmites cover the ceiling, walls and floors. The northwestern part of the chamber is the back side of the columnous section of Chamber 1 and there are several deep alcoves in this area. On the east side a passage heads off to Chamber 3. Another passage to the north leads back to Chamber 1.

Chamber 2 has significant evidence of past and recent human activity. In the alcoves behind the columns are numerous potsherds on the floor. In this same locus there is a large area of gray ash roughly 70 cm in diameter and from 3 to 6 cm deep. A second concentration of potsherds is found near the south wall amidst the formations. A third concentration of sherds is found in the niche off the passage at the east end of the room. At the back of the niche are several olla sherds, a few basal-flanged

sherds and several unidentified body sherds. Also in this niche are four stones placed in a line with a fifth stone in front of them. Outside the niche, a chert biface was found on the floor.

Several other features were discovered in Chamber 2. The first consists of a line of three stones in a rough north-south orientation. The northern and southern stones are limestone and the central stone is a broken speleothem. Roughly 30 cm south-southeast of the latter stones is a slate cobble. A small olla rim fragment lies at its northern end. The second feature also consists of three stones in a rough east-west orientation. They include two limestone rocks and a broken speleothem. A granite cobble lies 15 cm north of the eastern stone. All of the stones fall between 12 cm to 25 cm in length. The third feature is composed of four stones that are smaller than those of the other features. They consist of three river cobbles on the east and a limestone rock on the west. Three broken speleothems are behind the line to the south and are associated with small flecks of charcoal. Similar arrangements of rocks and/or stones were noted at Actun Tunichil Muknal and it is possible that they may have served as hearth stones.

Recent human activity in Chamber 2 is represented by a number of looter's pits. The largest of these was excavated into part of the ash lens (and the guano behind it) near the columns in the northwest corner of the chamber. This pit was excavated to bedrock, it is elliptical in shape and measures 100 cm north-south by 80 cm east-west. A large number of potsherds were in the looter's backdirt. A second pit was excavated in a small dry pool at the head of the flowstone. This disturbance is no more than 30 to 40 cm in diameter. There are several sherds lying just outside the pit. Below this, the base of the flowstone was chopped and shattered, possibly in an attempt to look under it. A third small circular depression in the bedrock was excavated near the eastern passage. There are only a few sherds next to this depression.

CHAMBER 3

Chamber 3 is a large open area from which light can be seen entering the cave from the entrance to the east. Sounds from a set of rapids just below the ledge can also be heard. The chamber is fairly dry but after the onset of the rainy season drip water from the ceiling becomes active. The chamber can be divided into three distinct areas: an open, natural, platform, a small ledge and a lower area.

The platform is roughly level and appears to be formed by flowstone coming off the southern wall and by run off from a line of stalagmites forming the eastern end of the chamber. The southern wall is mainly brecciated limestone with a few flowstone formations. Towards the east end of the wall there is a greater concentration of stalagmites. Beyond the stalagmites the platform drops down to the talus slope near the beach. The ceiling of this area consists primarily of limestone with several stalactites.

The ledge overlooks the platform and is similar to a small rock shelter except that the ceiling is covered with formations. The ledge measures three to four meters east-west and two to three meters north-south. It is accessed by way of a dry flowstone waterfall. A small tunnel leads to a sharp drop down to the river in the northeastern corner. To the west, a low passage leads to another smaller chamber.

The lower area is located about a meter below the eastern end of the platform and can be accessed via a step-like flowstone slope. The southern wall of the lower area is concave 1.5 m above the floor and leads to a small ledge as one goes west. This forms the entrance to Chamber 4. The western end of the lower section ends in an area dense in formations. It is possible to climb over the formations and enter the Upper Chamber or to climb through them and enter Chamber 2. Two narrow passages also lead to Chambers 2 and 8.

All three areas of Chamber 3 have evidence of prehistoric cultural activity. In the lower area, the western end of the floor is covered with potsherds, stones and broken speleothems. A small low niche has several broken speleothems on the ceiling and floor. Along the northern wall there is a small dry pool that is completely filled with jute shells. Many other shells spill onto the floor. Most of the jute have their tips broken. No count was undertaken but there are well over 500 shells in this apparent cache. Another small niche, toward the eastern end of the lower area, contains numerous potsherds. North of this area, where the passage to Chamber 2 enters Chamber 3, the proximal end of an obsidian blade was found on the floor.

Cultural remains on the platform are fewer in number than on the lower area. Calcified into the formations of the eastern side are several olla sherds. Further east there is a small shelf with several sherds on it. There are also a few sherds scattered over the entire floor. In the extreme western end of the platform there is a feature consisting of three large rocks and two smaller rocks. Two of the large rocks are fragments of speleothems and one is limestone. The two small rocks include a piece of limestone and a speleothem. The three large rocks form a triangle. Earthen stains on one of the speleothems and on the floor suggests that this speleothem was recently moved from its original location. A looter's pit adjacent to the stones supports this interpretation. The looter's pit exposed a layer of ash and charcoal several centimeters thick, suggesting that the rocks may have functioned as a fire hearth. Just east of the limestone rock are several sherds from an olla. Also found on the platform, in a small drip hole above the passage to Chamber 2, is a small bead. A hole is drilled through one end of the bead and two incisions are on each side. The bead is made from a flat river pebble (slate) about 3 cm long, 1.5 cm wide and 0.3 cm thick.

The ledge contains the lowest concentration of cultural remains. In its northeastern corner, near the small tunnel that drops to the river, there are between 10 to 15 fragments of an olla.

Several open pits reflect recent looting activities in the chamber. One looter"s pit is above the formations in the southeast corner of the chamber. The soil profile of this pit shows a 2 cm layer of clay covering a 3 cm layer of grey ash and charcoal. A large potsherd with soil adhering to it suggests that the looters may have been using the sherd to dig the pit. The second pit is located next to the possible hearth described above. It is very small, measuring about 20 cm by 21 cm, and descends to a depth of 16 cm. The stratigraphy of this pit consists of a thin layer of guano covering ash and charcoal to a depth of 5 cm. Below that is a half centimeter layer of hard clay followed by another layer of ash (to a depth of 9 cm), above a layer of reddish clay (at 13 cm) and yellowish clay (at 16 cm). Two more pits are located in the lower area. One beside the jute cache is 30 cm by 50 cm and was excavated through the guano surface to a layer of reddish clay. Several olla sherds were noted in the fill. A second disturbance, in another niche along the southern wall, has a variety of sherds in the fill.

CHAMBER 4

Chamber 4 is located at the southwestern corner of the ledge. At this point there are no natural sources of light but the river is still audible from across Chamber 3. The area comprising Chamber 4 consists of a long narrow east/west corridor, with two alcoves on the north side and several niches in the south wall. The eastern portion of the chamber allows plenty of standing room but as one heads west the floor gently slopes up to 1.3 m below the ceiling. At this end the chamber connects to Entrance 1. Inside the first, or eastern, alcove are several niches and crawl ways. One of the latter provides access into the Upper Chamber. The western alcove is accessed by crawling between two columns. This alcove is L-shaped and is over 2 m in height. Through a crawl at the western end of the alcove one can also access Entrance 1.

The floor in Chamber 4 varies depending on location. The extreme eastern end of the chamber is made of clay banks that appear to have eroded out of the niches in the southern wall. The western end is exposed bedrock. Inside the alcoves a layer of guano overlies the clay floor. The floor of the western end of Chamber 4 is densely covered with potsherds. This concentration continues east down the chamber for 4 or 5 m. It appears that this may be part of the same concentration of potsherds noted in Entrance 1. Inside the western alcove, the sherd concentration also continues. Just outside of the western alcove there is a feature that is composed of several rocks that appear to have been moved from their original location. The rocks include a piece of slate, a flake of slate, two pieces of granite, three speleothems and six limestone. There is a large concentration of sherds in the immediate area of the rock cluster as well as charcoal.

Two looter's pits were noted in the western alcove. These pits are small, and measure 25 cm by 25 cm and 50 cm by 35 cm respectively. The smaller of the two pits was dug to bedrock and there are a few sherds next to it. The other pit is more of a surface disturbance, but there is a large concentration of potsherd adjacent to it. In the western end of the chamber the flowstone wall has also been smashed.

Minor looting activity was also noted in two of the niches in the southern wall. The eastern niche has evidence of surface disturbance while the western niche has a small pit that is about 5 cm deep and covers an area 55 cm by 35 cm. There are several sherds of a single vessel in the back dirt of this pit.

CHAMBER 5

Chamber 5 is located east of the natural platform in Chamber 3, directly above the main river passage. Water flowing over a large set of rapids in the stream below can clearly be heard in the chamber. There is also some ambient light in the chamber but it is impossible to see any of the entrances.

Chamber 5 is long and narrow and its floor is covered with clay which seems to have flowed from a horizontal fracture running along the southern wall. The northern side of the chamber has two large boulders resting on the edge of a cliff overlooking the river. Along the fracture in the south wall there are several niches that one can crawl into. In the middle of the chamber, toward the rear of the southern wall, there is also a large alcove with a high ceiling.

Several areas within Chamber 5 contain cultural remains. The alcove in the southern wall has a number of large olla fragments clustered on the floor. There is also a concentration of ceramics on a small ledge underneath one of the large boulders on the northern side of the passage. It is, however, difficult to access this ledge. On a smaller boulder in the center of this area is one third of a ceramic dish. Another large fragment of the same dish lies between two boulders. Visible soil stains on the vessel fragments suggest that they are not in primary context. In fact, it is apparent that looters were quite active in this area. Along a crack on the eastern base of the alcove they excavated into the floor and left a number of potsherds just outside the crack. Many of these potsherds consisted of olla fragments with rope-like appliques. There was also a possible human rib within the backdirt. More evidence of looting was noted beneath the easternmost of the two large boulders on the north side of the chamber. Two pits were excavated below this boulder and several rocks and sherds were left beside the pits.

CHAMBER 6

Chamber 6 can be accessed from the eastern end of Chamber 5. This area is partially lit by natural light coming in from the eastern entrance. At the east end of the chamber it is also possible to see out into the sinkhole and the river can be heard clearly from this location.

Chamber 6 has similar qualities to Chambers 1 and 2. The walls and ceilings are composed primarily of flowstone and exposed bedrock, and several large stalactites descend from the high ceiling. A large column forms the northern end of the chamber. The floor is relatively flat and is composed of 1 to 2 cm of guano overlying clay or silt. A large undercut below the flowstone above forms a 1 to 2 meter deep alcove on the southeast wall. Traversing over the flowstone and up a small slope one can also access Chamber 7.

Prehistoric and recent human activity in Chamber 6 consists of several concentrations of potsherds, two possible hearths, and several looter pits. In the center of the chamber, next to a limestone rock, there are several olla fragments. North of this area, against the large column at the northern end of the chamber, is a cluster of three limestone rocks arranged in a rough equilateral triangle. There are several smaller stones, including one speleothem and one olla rim sherd, just to the west. On the opposite (south) side of the room two limestone rocks form another equilateral triangle with a protruding piece of bedrock. Flecks of charcoal associated with both sets of rocks strongly suggest that these features may have served as hearths.

The western section of Chamber 6 has been severely disturbed by looting activities. Within a niche, that extends to the large eastern boulder in Chamber 5, is a large looter's a pit measuring 160 cm north-south and 52 cm east-west. The pit descends 20 cm in the southern end and 10 cm at the northern end. A number of probable deer bones and several potsherds were found next to this pit. South of this pit a large, 96 cm by 90 cm, section of the floor has several scratch marks that were made with a sharp implement. The soil in this area is gray and filled with charcoal. There are also several olla sherds scattered over this area. Another looter's pit lies to the west of the scratched area. This pit is 137 cm by 90 cm and is 50 cm deep in the southeast end and 15 to 20 cm deep in the north. The top 1 to 2 cm of the soil profile consists of bat guano. Below the guano is a layer of calcified clay to a depth of 25 cm followed by softer clay that descends to the bottom of the pit. The top 5 cm of this clay layer

contains flecks of charcoal. Immediately below the charcoal, however, the matrix appears to be devoid of cultural remains. A number of potsherds were lying on the floor surrounding this pit. On a rock next to the pit there was also a distal portion of a chert uniface along with several other sherds.

CHAMBER 7

Chamber 7 is the easternmost chamber of the ledge. From the northern end of the chamber an overlook provides a view of the river and of Entrance 2. Sunlight from Entrance 2 provides adequate illumination in the chamber. Chamber 7 is roughly L-shaped, it has several flowstone formations, and connects to Chamber 6 via a narrow passage that slopes downward. The eastern wall of the chamber is made of calcified breakdown and has several nooks and niches in between boulders. The western wall is formed mostly by a beautiful white flowstone. Other parts of the chamber are covered with speleothem formations.

There is significant evidence of cultural activity in Chamber 7. In the southeast corner, near a section of breakdown, there are several human remains, including a rib fragment, a long bone broken into three fragments, and several smaller pieces of bone. Many of the latter are covered with calcium carbonate. Next to the western wall there are 18 rocks arranged in a roughly circular pattern. Thirteen of the rocks are limestone and five are speleothems. The speleothems range in size from 15 to 70 cm long and the limestone rocks range between 20 to 45 cm. A number of olla fragments are scattered between and around the rocks. Many other olla fragments were noted in several of the niches and nooks in the eastern wall and on the floor in the northern half of the chamber.

Looting activity is evident throughout Chamber 7. There are a series of five small pits near the circular rock feature. The largest of these pits is located against the wall and is about 75 cm by 72 cm. The pits were excavated into clay which appears to be sterile. Within the same area the looter's chipped through the calcium carbonate floor at the base of a formation. In a niche in the eastern wall there is another 30 cm by 30 cm pit excavated into clay. A few olla sherds lay adjacent to this area. One other pit was excavated near the bones but the backdirt suggests that the matrix here is sterile.

CHAMBER 8

Chamber 8 is actually a small open ledge which overlooks the river and the entrance to the west. The chamber is long and narrow with a ceiling that is about six meters high. Natural light illuminates the entire chamber. The north side of the chamber is covered by several large boulders that form part of a breakdown. Beyond the boulders the ledge drops off to the river 10 to 15 meters below. The southern wall consists mainly of dry flowstone. There are several niches in the base of this wall. The eastern end extends to Chamber 3 and contains a dead-end passage and an incline that leads to the Upper Chamber.

Chamber 8 has several dense concentrations of potsherds. Between two rocks and under another in the breakdown is a small nook which contains a large number of sherds. On a ledge, a small circular depression carved out of the bedrock is filled with layers of sherds. There is a large chipped cobble on top of the potsherds and many of the latter are on the verge of falling down to the river below. The floor of the eastern end of Chamber 8 is sparsely covered with pottery.

At the center of the south wall, in a small alcove formed by the wall and a large boulder, is a cluster of speleothems and rocks. The cluster includes five to seven limestone rocks, three or four speleothems, and one flat slate cobble. Within the cluster of rocks is a large rim fragment of an olla and several other body sherds. The entire chamber displays little or no evidence of looting activities.

THE UPPER CHAMBER

The Upper Chamber is located directly above Chamber 1 and Chamber 2. At its northern extreme the chamber overlooks the river far below. Morphologically, Chamber 8 is similar to Chamber 1 and Chamber 2. The walls and ceilings are of the same dry flowstone and it contains several speleothems. Growing from the ceiling are a few bulbous shaped stalactites. At the north end, tree roots descend towards the floor from a crack in the ceiling. The floor is covered with guano. The western half of the chamber forms a passage that leads back to Entrance 2. The south side of this passage contains a few alcoves. The east side connects to two higher passages that lead down to Chamber 3 and Chamber 8 two or three meters below. The southeastern wall of this chamber connects to a small room and then drops to Chamber 3 or connects to the eastern alcove of Chamber 4.

Potsherds are everywhere in the room, but they are not as dense as in other places on the ledge. The major concentration of pottery is along the walls. In the western part of the room there are two cultural features. In an alcove off the western passage there are two piles of stones at opposite ends. The pile to the south consists of 11 speleothems of different sizes, one slate cobble, and three limestone rocks. A number of potsherds lie between the rocks. Several potsherds were also noted in a small crevasse behind the stones. On the opposite side of the alcove a second feature includes three speleothems, one piece of flowstone, and one fragment of slate. Associated with this rock pile are a number of sherds and a jute shell.

Looting activities were noted in a few areas of the Upper Chamber. At the center of the western half of the chamber there is a large disturbed area that measures 330 cm north-south by 100 cm east-west. Near the north end of the chamber, next to the wall, there are several potsherds and speleothems that appear to have been moved from their original context. Near another pit, excavated in the northern part of the chamber, are six displaced potsherds. Three other small pits, with diameters ranging between 18 and 38 cm, were noted along the northwest wall.

RESEARCH CONDUCTED IN 1998

As indicated above, research during the 1998 season in Actun Yaxteel Ahau concentrated in two areas of the cave: Ledge 1 and Ledge 2 (the breakdown and beach areas were reserved for the 1999 season). Work on Ledge 2 focused on the mapping and cataloguing of artifacts and other cultural remains. The research on Ledge 1 included mapping, surface collection, and an inventory of all features and looter's pits.

Mapping on Ledge 1was conducted on a scale of 1:100. This scale was selected partly due to the size of the area (Ledge 1, including the breakdown, is over 100 meters long), partly because of time constraints, and because the disturbed contexts of most artifacts would make contextual analysis of the

cultural remains relatively futile. Cultural and geological features were recorded on the map following a set of conventions developed by the Western Belize Regional Cave Project, (Helmke, 1998). Ceramics were hatched in areas where they were concentrated. Looter's pits and other features were generally plotted in accordance to their size.

The area was mapped using 55 datums. Several datums were set adjacent to areas with high concentration of cultural remains (to ensure greater accuracy in the recording of these features). Three mapping techniques were generally employed. These techniques include triangulation, tape and compass and measuring off a base line. Smaller baselines were set using triangulation while others were set using a Brunton compass and tape.

Each feature was assigned a specific number. Features generally consisted of hearths, clusters of bone or animal remains, and clusters of rocks that appeared to have been manipulated by the ancient Maya. Looter's pits and modern activity were not included in this category. Photographs were taken of most of the features and some were sketched. A more thorough examination of the features is scheduled for subsequent field seasons.

All the looter's pits were also assigned individual numbers. North-south, east-west and depth dimensions were taken for each to determine their relative size. Artifact types within looter's backdirt were noted, and a brief description of soil types and matrix exposed by the pits was recorded. The latter provided important information on natural and cultural stratigraphy.

Surface collections were conducted on the ledge and in the breakdown. Within the ledge the artifacts of three looter pits were collected. These pits were in the area of Chamber 1, Chamber 5 and Chamber 6. These areas were selected because of an abundance of ceramics in the fill and because they had a number of diagnostic ceramic types that could be used to determine the chronology of human activity on the ledge.

Several lithic artifacts were also collected from the surface. These were generally recovered for comparative purposes and because they were located in areas that were heavily trafficked. Three obsidian blades, one chert biface, one chert uniface, and a slate bead were removed from Ledge 1.

Two large sherds forming two thirds of a dish were collected from Chamber 5. These sherds were found on a rock where they were most likely left by looters. In the breakdown, on top of a very large boulder, a nearly complete olla and two smaller bowls nested within each other were collected. These ceramics represent three of the four complete vessels discovered on the ledge and because of their relative accessibility we decided to remove them from the site. Photographs were taken of the olla and bowls prior to their removal.

LOOTING ACTIVITY ON LEDGE 1

Actun Yaxteel Ahau bears considerable evidence of vandalism and disturbance by looters and casual visitors to the site. There are looter's pits in almost every area, including places of difficult access. The location and a brief description of each looter's pit was recorded, and a total of 37 pits were identified. These pits, however, do not represent the total damage done to the ledge area. There are

many areas where no excavation took place but there is clear evidence that pottery was removed from its original location or taken from the site.

The length of looter's pits was between 44 cm by 65 cm, they range between 10 cm to 330 cm in width and between10 to 30 cm in depth. Most of the pits are generally circular in shape. Several trends are apparent in the looting activities. Most of the pits are excavated into solid clay. Generally, there seems to be no artifacts in the clay below the surface. Several of these pits are even excavated in areas devoid of artifacts. Many pits are also found in guano and guano covered clay. Three sections of flowstone were smashed suggesting that the looters attempted to retrieve objects underneath or had limited knowledge of cave formation processes.

Looting activity was identified in several different loci. Many of the excavations were dug into sherd clusters and four pits were excavated into rock clusters. The latter generally resulted with a rearrangement of the rocks, making it difficult to determine the in-situ configuration of these features. Eight excavations were dug where there were no visible or apparent artifacts in the immediate vicinity. About 12 pits were excavated in either a niche or under a rock. Two pits were excavated in travertine pools and most of the others are in open areas of the ledge. Another interesting observation is that in five instances the looters used a sherd to excavate a pit. This suggests that at least some of the looting may have been conducted by casual visitors to the site. We are aware that several expeditions occasionally stop at Yaxteel Ahau and it is possible that they may be partly responsible for some of these activities. It is therefore imperative that their guides be instructed on the legalities of these activities and of the need for their participation in the protection of these cultural resources.

Some of the looter's pits revealed three different soil profiles on Ledge 1. One stratigraphic sequence consists of clay that descends to an unspecified depth or to bedrock. The second is represented by guano overlying a similar layer of clay, and the third has guano directly over bedrock. Several sources of clay were noted on the ledge. These include the southern wall in Chamber 3, 4 and 5 and the eastern wall of Chamber 7. A narrow fracture in the walls of these chambers allows water laden with clay to seep onto the ledge. The movement of clay is evident in two areas in particular. In the profile of Looter Pit 9 in Chamber 5 there is a layer of charcoal and guano covering a layer of clay which overlies another layer of charcoal resting on a layer of clay. In Looter Pit 12 in Chamber 3 there is a 2 cm layer clay covering a 3 cm layer of charcoal and ash on top of a clay layer. This feature likely represents a prehistoric hearth. The layering of clay over ash deposits provides a unique opportunity for examining the stratification of cultural deposits (which is generally rare in caves), and for allowing a division of artifacts into earlier and later time periods.

CULTURAL FEATURES

Sixteen cultural features were mapped and recorded in detail on Ledge 1. Several other features were identified but have yet to be plotted on the map or given specific feature numbers. Of the 16 features recorded 12 are rock clusters. A rock cluster is defined as three or more rocks in close proximity to each other that appear to have been intentionally placed together in the past. The other features include two jute caches, one concentration of bones, and one ash lens.

Rock clusters are by far the most common cultural feature on Ledge 1. There is at least one of these clusters in all but three chambers of the ledge. All the rock clusters contain at least one limestone rock. Eleven of the rock clusters contain speleothems, five have slate cobbles, two have granite cobbles and one has unidentified river cobbles. Seven of the rock clusters have associated ceramics nearby.

There are three general patterns of rock clusters on the ledge. There is the seemingly haphazard cluster of rocks, there are stones in a linear alignment, and stones arranged in triangles. The "haphazard" clusters are generally limestone and speleothems arranged in either a pile or tight cluster. One exception is Feature 15 where the rocks are more scattered. Of these clusters two do not have a piece of slate nearby and four do. The slate in each cluster is usually a smooth flat cobble, occasionally chipped or flaked. They measure anywhere from 12 cm to about 40 cm. Feature 15 includes a piece of slate and granite. Both of these stones are chipped and the flakes were noted in the cluster. Features 8 and 9 are approximately 2 m across from each other within two niches in a small alcove in the Upper Chamber. The rocks in both of these clusters are very close together and both contain a piece of slate.

Three of the rock clusters are "lines" of stones. Two of these (Features 3 and 4) are closely aligned to the cardinal directions. They are located fairly close to each other in Chamber 2. One cluster, Feature 4, is roughly east-west and the other, Feature 3, is roughly north-south. Both of them consist of two limestone rocks next to a speleothem. The north-south cluster has a flat slate cobble nearby and the east-west cluster has a granite cobble nearby. Although we have identified these clusters as "lines of stone" it is likely that they could have been moved from their original location. If this was the case, it is then possible that they may have served as three stone hearths or as supports for large jars.

Several of the rock clusters appear to have served as hearths. These generally consist of triangular arrangements of three stones (Sharer, 1994:483). The most prominent triangular formation is Feature 14 which consists of two limestone boulders and one speleothem. One of the speleothems appeared to have been recently removed from its original location. This is made apparent by a stain on the floor of the cave which matches a stain on one side of the speleothem. If the speleothem were placed back on top of the stain it would produce an equilateral triangle. In the profile of a looter's pit adjacent to the stones there is a layer of ash and charcoal that is clearly visible underneath a thin layer of guano. The ash and charcoal supports the interpretation that these features served as hearths.

Features 12 and 13 also contain three stones that form a triangle but the absence of visible ash or charcoal preclude their designation as hearths. If future excavations fail to record charcoal or ash an alternative explanation for these features is that they may have served as pedestals for large vessels that may have been looted. This type of association (rocks serving as pedestals for vessels) has been noted by WBRCP archaeologists in both Chechem Ha Cave and Actun Tunichil Muknal.

Non-ceramic Artifacts

Several different types of non-ceramic artifacts were recovered by the surface collection in Ledge 1. These artifacts include a slate bead, a chert biface, a chert uniface projectile point, and three obsidian blade fragments.

The first obsidian blade fragment was discovered in the southwestern section of Chamber 1. It lay adjacent to two looter's pits in a small alcove with active speleothem formations. It is possible that the looter's may have found it in their excavation before discarding it nearby. The fragment is 3 cm long, 1.4 cm wide, and 0.4 cm thick. It is slightly curved and consists of the proximal portion of a prismatic blade.

The second obsidian artifact was lying next to a circular depression on the floor of a passage leading from Chamber 1 to Chamber 8. It is possible that this blade fragment may have been dislodged from the guano covered floor by heavy human traffic through the area. The fragment is 3.1 cm long, 1.9 cm wide, and 0.7 cm at its thickest. The portion collected is a proximal end of a prismatic blade. It is thin and ovoid in shape.

The third fragment was discovered on the guano covered floor of a passage that connects Chamber 2 and Chamber 3. This specimen too may have been inadvertently dislodged from its original context by heavy traffic through this area. The fragment is 4.6 cm long, 1.2 cm wide and 0.5 cm thick. It is curved and is also a proximal end of a prismatic blade.

Obsidian blades are not rare in cave artifact assemblages. Indeed, these artifacts appear to have been used in cave rituals from the Late Preclassic through the Postclassic periods and some may have been employed in blood letting rites (Awe et al. 1997; Brady et al. 1997). It is also important to note that all three obsidian blade fragments in Ledge 1 were found in areas that are naturally decorated with active speleothem formations. The nearest cultural feature to the obsidian blades is in Chamber 2 which contains two of the previously described rock clusters. These features are about 5 to 10 m from the blades.

The chert biface and the chert projectile point fragment were both recovered from dubious contexts. The projectile was found on top of a small rock in the back dirt between two looter's pits in Chamber 6. It is difficult to determine which pit the point came from or if it was taken from somewhere else and left behind by the looters. Several small polychrome sherds that were found next to the point indicate that the looters may have selected some pieces and left the others behind. The point is made of a tanish brown chert and consists of the proximal end of a stemmed projectile. It is 6.8 cm long, 5.5 cm wide at the base above the stem, and 1.5 cm thick.

The chert biface was discovered on the floor of the passage connecting Chambers 2 and 3 and also appeared to have been moved from its original location. The tool was produced from a brownish white chert. There are pieces of cortex still on the biface. The distal end is broken off and the remaining portion of the tool is 11.0 cm long, 5.5 cm wide and 2.7 cm at its thickest point.

The slate bead was found in a small hole created by water dripping from the ceiling in Chamber 3. It has a bean shape, and was made from a flat river pebble 3.2 cm long, 1.8 cm wide and 0.5 cm thick in the center. The bead is biconically perforated and two incisions extend from one end to just beyond the perforations on either sides. The longest incision is 1.3 cm long. No other artifacts were discovered in close proximity to the bead.

It is peculiar that no manos or metates were found on Ledge 1. "Grinding stones have been noted to be one of the most commonly occurring cave artifacts," (Brady et al, 1997:97) and this pattern is certainly true in western Belize. We should point out, however, that they are present in several other areas of Actun Yaxteel Ahau (i.e. the lower breakdown and other ledges). Their conspicuous absence on Ledge 1 may therefore reflect differences in prehistoric activities from one area of the cave to the next.

Ceramic Artifacts

The ceramic artifacts from Ledge 1 include materials that were recovered during thorough surface collections of three looters pits (Looter's Pits 5, 11, 20) and specimens that were collected from other loci on the ledge. Among the latter were three whole vessels and two thirds of another vessel. Given the widespread looting of the cave, it is possible that these whole vessels were never discovered by the looters and are thus in primary contexts.

All the ceramic material reported herein were primarily collected for use in establishing the chronology of prehistoric activity on Ledge I. Type: variety designations were determined by Chris Helmke, Jaime Awe and other project personnel with some assistance from Dr. Joseph Ball of San Diego State University. Although detailed analysis of the ceramics have yet to be concluded, several diagnostic types have been identified and some interesting patterns are beginning to emerge. The description provided below will first present information on the ceramic specimens that were recovered from contexts other than looter's pits, followed by a description of the materials recovered adjacent to looter's pits or in their back-dirt.

The large pottery fragment, which represents two thirds of a dish, was found in the central area of Chamber 5. It was found lying on a boulder with several smaller sherds located next to the boulder. Soil which still adhered to several sherds suggested that they were excavated by looters prior to our investigation and thus were in secondary contexts. The interior of the dish is slipped red. Its exterior is unslipped and is encircled by filleting along the shoulder. The vessel has been tentatively designated as Mountain Pine Red of the Tiger Run complex in the Belize valley (Gifford 1976: 193-195) and dates to the early part of the Late Classic period (AD 600 - AD 700).

The three complete vessels were discovered in the breakdown area below the chambers of Ledge 1. As noted above, all three vessels appear to have been in primary contexts. The large jar (or olla) was found lying upside-down below a large boulder. It measures 22 cm in diameter at its widest point, and has a rim diameter of 15.3 cm. The vessel is completely unslipped, but has black fire-clouding on its interior. The exterior is grey and is covered with light striations. A small 3 cm wide chip has been spalled off the lip of the olla and probably represents ritual "killing" of the vessel. The olla has tentatively been typed as a Succotz Striated, and dates to the Early Classic (AD 300 - AD 600) period (Gifford 1976: 186-189).

The other whole vessels (two small bowls) were discovered near the olla. They were positioned upside-down, with the larger bowl placed over the smaller one. The larger bowl is 12 cm wide at the rim, and the smaller one is 7 cm at the rim. Both bowls are completely unslipped. The larger bowl has a smooth burnished surface. The smaller vessel is crudely made with uneven sides and is covered with

finger impressions. The type: variety designation of these vessels has not yet been determined, but both may be varieties of Cayo Unslipped (AD 700 - AD 900) (see Gifford 1976: 314-315). They also share modal similarities with vessels that were found (containing copal) in caves within the Caves Branch area and with several small bowls excavated in the eastern structure at the Ponces site in the lower Roaring Creek valley.

Pottery recovered adjacent to Looter's Pit 20 in Chamber 1 represents the most diverse collection of ceramics from Ledge 1. A total of 83 potsherds, 1 jute (*pachychylus sp.*), and one lithic were surface collected from around the pit. Identified ceramic types include Early Classic (AD 300 - AD 600) Balanza Black: Variety Unspecified and red-slipped Mopan Striated; Middle Classic (AD 600 - AD 700) types such as Mountain Pine Red and Silkgrass Fluted, and Late Classic (AD 700 - AD 900) Yalbac Smudge-brown. These ceramics span the entire Classic period and are coeval in date with material recovered in Chamber 5.

Surface collection in Chamber 5 concentrated on materials associated with Looter's Pit 11. A total of 104 potsherds were retrieved from this area. Many sherds were fragments of ollas decorated with filleting, incising, and/or incised appliques that are rope-like in form. Identified types include Early Classic, Dos Arroyos Orange-polychromes (Gifford 1976: 173-180), Succotz Striated, and a regional variety of Succotz Striated which is consistently decorated with rows of filleting and appliqued bosses with crossed incisions. Middle Classic types are represented by Sotero Red-Brown, Macal Orange-Red, and Zibal Unslipped. The Late Classic pottery is dominated by jar fragments of the Cayo ceramic group (Cayo Unslipped). One sherd, possibly of Late Preclassic (300 BC - 100 BC) date, was identified as Hillbank Red. Another body sherd is decorated with a coiled, rope-like design, that is appliqued over a field of striations (i.e. LP11-10). It is possible that this sherd is a fragment of a bowl, that should be designated as a "special" type. It is impossible to determine whether this body sherd is a fragment of an olla until other similar specimens have been discovered. In any case, similarities to other types indicate that this sherd may date to the Early Classic. The collection of ceramics from LP 11 indicates a strong Early Classic to Middle Classic assemblage (AD 300 - AD 700), with possible antecedents in the Late Preclassic and continuity into the Late Classic period.

The surface collection in Chamber 6, concentrated on materials associated with Looter's Pit 5. A total of 100 ceramic sherds, and 5 fragments of animal bone were collected. The faunal remains consisted of two fragments of a mandible, two fragments of a vertebra, and one piece of a rib. All bones were identified as being those of deer (David Cruz, personal communication 1998). The ceramics in this collection span the Late Preclassic to the Terminal Classic (300 BC - AD 900) and represent the longest period of continuous activity for any area of Ledge 1, and for all areas in Actun Yaxteel Ahau. Type: varieties identified thus far include: Late Preclassic (300 BC - 100 BC) Sierra Red (Gifford 1976); Protoclassic: (0 - AD 300) Aguacate Orange: Holja Variety; Early Classic (AD 300 - AD 600) Pucte Brown, Aguila Orange, Yaloche Cream-polychrome; Middle Classic (AD 600 - AD 700) Mountain Pine Red, Macal Orange-Red; Late Classic / Terminal Classic (AD 700 - AD 900) Cayo Unslipped, Mount Maloney Black, Yalbac Smudge-brown. The ceramics from LP 5 further indicate increased usage of this area over time. This is particularly evident by an increase in the overall quantity of ceramics, and number of types, over time.

In a recent reevaluation of the hallmark ceramic types of the Protoclassic (Brady et al. 1998), it has been argued that although Aguacate Orange first appears towards the end of the Protoclassic (i.e. late facet of the Xakal complex: AD 100 - AD 350), the type only appears in high frequencies during the subsequent Madrugada complex (ca. AD 50 - AD 350). At Cahal Pech, this complex appears to occur in contexts that are stratigraphically independent from ceramics of the Xakal complex (350 BC - AD 350) and those of the Ahcabnal complex (AD 350 - AD 600). Interestingly, true Aguacate Orange also occurs in low frequencies in cache contexts at Las Ruinas de Arenal during the Ahcabnal complex (Brady et al. 1998: 27). In sum, although Aguacate Orange has traditionally been dated to the Protoclassic, it is now apparent that the type cannot be easily assigned to a ceramic complex. The absence of a stratigraphic context for the Actun Yaxteel Ahau specimen, precludes clear chronological assignment for this sherd. It is apparent, however, that this type represents a "functionally specialized ceremonial ware" that was valued beyond the cessation of its manufacture. Of particular interest is the fact that the LP 5 specimen is a true Aguacate Orange sherd (Joseph Ball personal communication 1998) and is thus not only important as a temporal indicator but also for its socio-cultural implications.

Collections from the three areas revealed very different ceramic assemblages temporally and stylistically. This may be due to the different geological setting (umbral - dark zone) in which they were discovered, as well as their original stratigraphic context (relative depth of each looter pit varied from unit to unit). Below is a discussion of the individual characteristics of each chamber where ceramics were collected.

Looter's pit 5 in Chamber 6 is located in a niche in the side of a boulder off the main open area in the chamber. Roughly rectangular in shape, the length of the pit measures 160 cm in length and 52 cm in width, with a depth ranging from 25 cm at the southern end to approximately 10 cm at the northern end. Diffused natural light enters the area from the Sinkhole Entrance to the cave. The ceilings are several meters high and covered with formations while the floor is primarily guano covered clay and consists of 28 square meters of level space. The looter pit in this chamber is the only pit on Ledge 1 to definitely contain Late Preclassic and Protoclassic ceramics. Furthermore, of the three areas where surface collections were undertaken this chamber represents the only area where there is sufficient light to see with out the aid of artificial light.

Looter's pit 11 is situated in the central area of Chamber 5. It is located against the wall in the central part of the chamber in a 1 m deep crevasse. The depth of excavation is indeterminable because there is no natural surface to compare with nearby. The crevasse is roughly 100 cm long and 25 cm wide. The soil is comprised of clay with charcoal inclusions. Very little to no natural light illuminates this area, thus artificial light is necessary to travel through the chamber. The ceiling in Chamber 5 is very high and the floor consists of large breakdown boulders with level clay surfaces in between. Looter's pit 11 is fairly close to Looter's pit 5, approximately 5 to 6 meters, however, the ceramics vary greatly. The ceramics of this area date to the Classic Period (although there is a possibility of one Late PreClassic sherd), and are stylistically different except for one type and variety.

Looter's pit 20 is in the entrance of Chamber 1. This pit is located near a wall and is adjacent to a cluster of formations. The pit is roughly circular in shape and has a diameter of 40 cm. It was excavated to bedrock and measures only 13 cm deep. The floor consists of guano overlying a very thin layer of clay above the bedrock. This chamber has 25 to 30 square meters of level floor area. The

ceiling is about 2 m high in the center and decreases toward the walls. No natural light enters this chamber and it is therefore completely dark. The ceramics from Looter's pit 20 consist solely of Classic period types and are stylistically different from Looter pit 11, and from all but one of the ceramics in Looter's pit 5. The fact that the floor of the chamber is level as it is in Chamber 6 near Looter's pit 5 may explain the overlap of ceramics.

Our preliminary study of the distribution of ceramics in Ledge 1 suggests that there could be a correlation between the physical characteristics of caves and the age and type of ceramics found within them. On Ledge 1, for example, Classic Period ceramics such as Yalbac Smudge-brown were discovered in both areas where the floor was level and open. At the same time, Late Preclassic and, to some degree, Early Classic pottery was only found in umbral to penumbral areas close to entrances. The temporal and stylistic differences in ceramic assemblages within this cave context could therefore reflect: a) changes in ancient Maya cave use over time, and b) differences in the types of prehistoric activities from one area to the next. They suggest that early Maya cave use was centered near the entrances to caves, in areas with natural ambient light. Obviously, Ledge 1 in Yaxteel Ahau represents a very small sample size from which to infer this type of relationship, and a much greater sample must be examined to confirm this correlation. Future studies by the WBRCP will therefore make a concerted effort to examine the distribution of ceramic types and forms within all chambers in the cave to confirm or negate this type of contextual distribution.

CONCLUSIONS

The 1998 investigations of Ledge 1 at Actun Yaxteel Ahau produced a detailed map of this section of the cave, identified several areas of prehistoric Maya activity, established a chronology for the site, and noted that the cave has been the target of extensive looting during the last decade.

Despite the widespread vandalism, the research noted that the artifact assemblage within Ledge 1 included the following materials: pottery, obsidian blade fragments, chert projectile points, and stone beads. Manos and metates were conspicuously absent from this assemblage. Animal remains included a large quantity of jute and possible deer bones. Human remains were scarce and limited to a few small fragments. Cultural features were represented by rock clusters, hearths, and a possible platform. These features often included speleothems, limestone rocks, and occasionally slate. Pottery forms were dominated by fragments of large jars or ollas. Ceramic types indicate that the Ledge was used from Late Preclassic to Late Classic times with most intensive usage during the later time frame.

Investigations planned for 1999 will focus on mapping the breakdown area and the beach, on recording the features in these areas, and the excavation of several units on Ledge 1. These excavations will hopefully provide stratified samples of Late Preclassic through Late/Terminal Classic pottery and enable us to establish a more comprehensive ceramic sequence for the site. Beside offering a unique opportunity to study ancient Maya cave use over a span of approximately 1200 years, the investigations at Yaxteel Ahau will also enable us to examine differences and similarities in prehistoric Maya activity over space and time.

Acknowledgments

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PRELIMINARY REPORT OF INVESTIGATIONS ON LEDGE 2, ACTUN YAXTEEL AHAU

Vanessa Owen
Colorado State University

Sherry Gibbs
Trent University

INTRODUCTION

During the 1998 field season, the WBRCP focused attention on several sites in the Roaring Creek Valley, including Actun Yaxteel Ahau. This cave was first recorded by Jaime Awe in 1978, and he noted that it contained substantial evidence of prehistoric activity. In 1986 geomorphologist Tom Miller (1990) explored 1 km of stream passage and produced the first map of the site (Figure 1 from Miller 1990:33). The WBRCP made a brief reconnaissance of Yaxteel during the 1997 field season in order to formulate a research strategy for investigations in 1998. The research goals outlined for Yaxteel Ahau included detailed mapping of areas with evidence of cultural activity, data collection, and the analysis of osteological and cultural materials.

Previous non-archaeological investigations in Yaxteel Ahau (Miller 1990, Roberts 1990) had identified four ledges with prehistoric cultural remains. These ledges were numbered sequentially from the entrance to the rear of the cave (Figure 1). In1998 members of the WBRCP focused primarily on Ledges 1 and 2, re-identified Ledges 3 and 4, and discovered two new ledges that were designated as Ledges 5 and 6. This paper presents a preliminary report of the investigations on Ledge 2, and provides a description of the artifacts and osteological material that were recorded in this locus.

DESCRIPTION OF ACTUN YAXTEEL AHAU

Actun Yaxteel Ahau, Maya for "Cave of the Ceiba Tree Lord" (Colas and Awe 1998: personal communication) is located approximately 1 kilometer north of the main entrance of Actun Tunichil Muknal (see Awe et al 1997a,b; Gibbs 1997a,b). The cave is approximately 1 kilometer in length and reaches up to 22 meters in height and 20 meters in width. A perennially active cave stream originates in a resurgent sump at the terminus of the cave then flows northwest through the main entrance, where it forms a tributary of the Roaring Creek. During the rainy season (May to October) water levels within the cave can fluctuate substantially within a very short period of time.

Actun Yaxteel Ahau
Roaring Creek Valley
Cayo District, Belize
Preliminary plan of Ledge 2

Western Belize Regional
Cave Project (WBRCP) 1999

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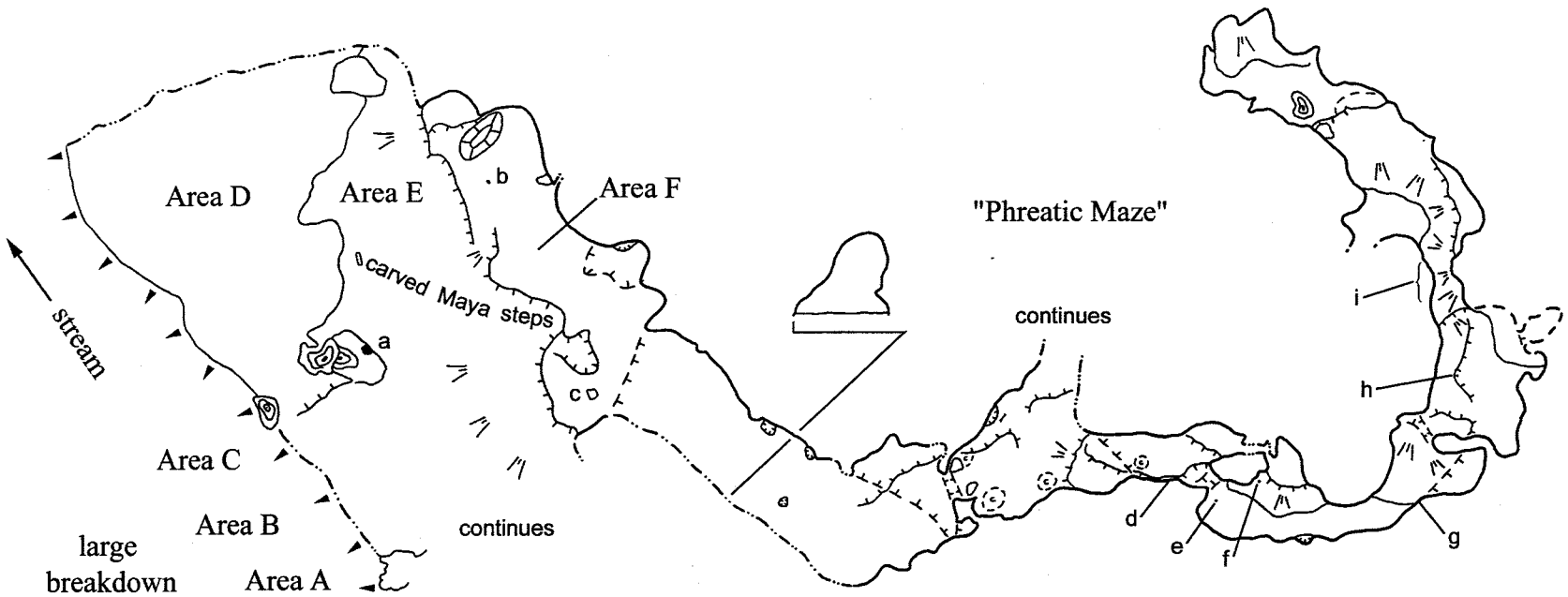
Plan by:
Christophe G. Helmke (1999)
Survey by:
Christophe G. Helmke (1998)

Revised: 00 / 00 / 0000

Legend:

a: hearth feature
b: fragmentary mano
c: granite metate
d: torch tampings
e: bone tube
f: perforated tooth
g: torch tampings
h: burnishing stone?
i: torch tampings



LEDGE 2

Ledge 2 is located above the northern bank of the river, approximately 300 meters from the main entrance. The ledge represents part of the upper fossil levels of the cave (Miller 1990:33) and is completely within the dark zone area of the site. In comparison to other ledges in the cave, Ledge 2 is unique in that it is the only area with a large quantity of human remains. The latter are deposited with numerous artifacts over most of the surface area of the ledge. This wide distribution of cultural materials, and the uneven and at times slippery condition of the ledge floor, greatly inhibits movement across the surface. Because of this uneven topography and to facilitate contextual analysis of the cultural remains, we decided to subdivide the ledge into several areas. These sub-areas included Areas A, B, C, D, E , F and the Lower Ledge (Figure 1).

AREAS A-C

Areas A, B and C are three small landings or level areas that are located along the southwestern border of Ledge 2. During our investigations a ladder was used to ascend from the stream passage to Area A. From this point one has to climb up to Areas D to access the other sections of Ledge 2.

AREA D

Area D is bordered to the south and west by an over-hang that drops abruptly to the cave stream. The floor slopes gradually down toward this overhang, and the presence of bone material at the edge suggests that water activity may have washed human and cultural material off the side of the ledge. The northern limits of Area D is defined by the cave wall, and the eastern border is defined by Area E, a slope that connects Areas D and F. Area D is characterized by a number of gour pools and travertine formations and is littered with disarticulated human remains, ceramics, and several other ground and chipped stone artifacts.

AREA E

Area E is a wide (more than 15 m) slope that extends upward from Area D to Area F. At mid-section it has a series of steps that were carved into the clay surface, possibly to facilitate access between Areas D and F. Architectural modifications like that of Area E have been noted in Actun Uayazba Kab, and in Waterfall Cave (Awe, personal communication 1999). Like Area A, Area E also has human bone, stone artifacts and ceramic material scattered over its surface.

AREA F

Area F is a narrow (approximately 3 m) strip of level surface that lies at the summit, or east, of the sloping Area E. It is bounded by the cave wall to the north and south. At the southeastern end of Area F there is a phreatic passages that terminates at a narrow (2.5 m wide) chamber with beautiful and active cave formations. Within the chamber the skeletal remains of a single individual,

several potsherds, and a crystal were found. The material from the passage and chamber were recorded separately from the other material in Area F to provide analytical control over the spatial distribution of the cultural remains.

LOWER LEDGE

Located to the northwest of Area D, the Lower Ledge forms a natural bridge that crosses the main stream passage. The surface area of this ledge is uneven and was thus subdivided into two areas: Lower Ledge A (LL-A) and Lower Ledge B (LL-B). LL-A represents the lowest and eastern section of this area, whereas LL-B is the upper or western section of the ledge. Human bone, ceramic, lithic, and faunal material were observed throughout the Lower Ledge. A mound of debris immediately adjacent to the pitch from Area D appears to be the result of wash-down from above. The debris includes decomposing vegetation, cohune nuts, rock, animal bones, land snails, and a partially decomposed mammal. This wash-down debris suggests that there may be an opening to the surface above, however no opening could be observed. Various attempts were made in an effort to investigate the suspected opening, but they were unsuccessful because the area is too steep. The significance of the debris is that it provides evidence of modern taphonomic processes and reinforces the need for careful examination of materials in this area to ensure separation of modern and ancient deposits.

RESEARCH METHODOLOGY

The primary objective of the investigations on Ledge 2 was to record all evidence of prehistoric human activity. Due to time constraints, no excavations were conducted. All cultural materials recorded were therefore limited to surface contexts. Work began with a thorough inspection of the Ledge and the identification of all bone material and artifacts. These areas were subsequently demarcated with flagging tape to reduce the risk of damage to the cultural remains and to facilitate movement on the Ledge. Despite a thorough survey, however, we could not locate many artifacts previously identified by Roberts (1990). This was likely due to the unspecific provenience provided in Roberts' report, to erosion, or to recent looting activity in the cave.

A baseline was set up in Area D at a 340° azimuth. Clusters of bones and artifacts were mapped off of this baseline and each major cluster was assigned a specific number. Plans were made at a scale of either 1:10 or 1:5 depending on the detail required for each cluster. While plans were being produced, some artifacts were removed and markers were left in their place. This strategy was adopted in response to the constant threat of looting. The artifacts were taken to the field lab and then documented and analyzed.

The mapping of Areas A, B and C was followed by the extraction of all removable bone and ceramic remains. Some artifacts, however, were cemented to the floor by calcium carbonate and because their removal would have damage them, they were left in place. On all the plans bone was identified with letters and ceramic remains with numbers. At the time of removal, bone and ceramic remains were tentatively identified and plotted. Any object left *in situ* was also noted and analyzed.

In order to preserve any possible microwear or residues, lithics were not washed.

DESCRIPTION OF ARTIFACTS

During the 1998 field season all artifacts observed on the surface of Ledge 2 were documented. Although many of the finds remain "in situ" on the ledge, several objects were removed to ensure that they would not be looted. Analysis of each artifact was conducted either on the ledge or in the lab. Due to time constraints, some of the artifacts have yet to be fully analyzed. The following is a preliminary report summarizing all of the artifacts recorded in 1998, including detailed descriptions of those objects which have been analyzed.

Ceramics

Ceramic remains represent the largest category of cultural remains recorded on Ledge 2. Vessel forms consist of large and small ollas, bowls, and a tripod dish. Types that have presently been identified include Tinanja Red, Cayo Unslipped, and Roaring Creek Red (Helmke, personal communication), all dating to the Late and Terminal Classic periods. A detailed ceramic analysis will be conducted in 1999-2000 with the goal of establishing a more precise chronology for the utilization of the ledge.

Shell

Shell artifacts were discovered in various areas of Ledge 2. In Cluster 1, along the west end of the North Wall in Area D, a perforated *oliva* shell was identified next to a number of human bones. Due to the artifact's fragile nature, it was not removed from the clay matrix. The shell measures 2.44 cm in length and 1.55 cm in width. The drill hole measures approximately 4 mm in diameter. The proximal end of the shell appears to have been cut.

Two other shells were discovered east of this cluster. The first, found next to a cluster of bones, was extremely fragile and had fractured in several places. The general morphology and type of shell was difficult to determine based on direct observation alone. To prevent further damage, the artifact was left in situ and approximate measurements were taken. The shell measured about 4.5 cm in length and 4.3 cm width. The surface of the shell was white and flaky with a pearled finish. Further analysis may help to determine its genus and species.

The second shell was found east of Cluster 1, close to the North Wall and Cluster 2. The shell measures 2.5 cm in length and 9 mm in width. A number of identical shells were discovered in the wash-down on the Lower Ledge in association with leaves and other debris. This context suggests that the latter specimens may have been moved, by natural processes, from their original location.

One of the more notable shell artifacts found on Ledge 2 is a large perforated *oliva* shell (Figure 2a) that was discovered in Area E. Measuring 4.9 cm in length and 2.4 cm in width, this

shell is larger in size than the other perforated *oliva* found on Ledge 2. The perforation is approximately 4.0 mm in diameter and its uneven edges suggests that the hole had been punched rather than drilled. Perforated *oliva* shells are often discovered in the form of *tinklers* which were sewn onto ritual clothing (Willey et al. 1965:508).

A number of conch shell artifacts were also discovered on Ledge 2. One artifact was located accidentally while raising the ladder. Another fragment of a tubular conch shell bead, broken at one end, (Figure 2b) was dislodged from the clay matrix in Area E. The fragment is 2.1 cm, and 9 mm in diameter. In Lower Ledge A, a section of *columella* and a thick body fragment were found in close proximity to one another. The fragmented *columella* has an approximate length of 5.3 cm. The thick body fragment measures approximately 5.9 cm in length, 2.5 cm in width, and 1.4 cm in thickness. A more detailed examination should determine if these two pieces represent manufacturing detritus.

A large number of jute shells (*Pachychilus spp.*) were discovered in association with clusters of ceramics, disarticulated bones, and charcoal in the main tunnel of the Phreatic maze. A total of 56 jute were identified. Thirty five had the tips broken off, suggesting that they may have been ritually consumed (Graham et al. 1980:158). It should be noted, however, that examples of jute shells with broken tips have been found to occur naturally (Norbert Stanchly, personal communication). Three other jute were discovered on the Lower Ledge B, also with their tips removed.

MacLeod and Puleston (1979:74) previously suggested that concentrations of jute in caves "represent at least the beginning of the fabled road leading into the underworld." It has also been suggested that jute may have been consumed in ritual feasting (Healy et al. 1990). Since the jute on Ledge 2 were not found in high concentrations, and since approximately 40% do not have their tips broken off, it is unlikely that they were all ritually consumed in Yaxteel Ahau. According to Jaime Awe (1999 personal communication) an alternative explanation is that concentrations of jute shells may represent offerings to cave deities for bountiful harvest and game.

Jade

The only jade artifact discovered on Ledge 2 was a tubular jade bead decorated with two incised lines at one end (Figure 2c). The bead was found in Area E, next to a number of ceramic sherds. The bead measures 2.9 cm in length, and 7.0 mm in diameter. The diameter of the hole is 2.5 mm. An identical bead was discovered at the Sacred Cenote at Chichen Itza as part of an elaborate jade necklace that dates to the Late Classic (Rands 1965:563).

Bone

During the mapping of Area C, two bone beads (Figure 2d) were discovered side by side in the clay. One is a shade lighter than the other, but both are generally yellowish-beige in colour. Although the darker bead is broken, the preservation of both beads is excellent. They have a smooth

Artifacts from Ledge 2, Actun Yaxteel Ahau

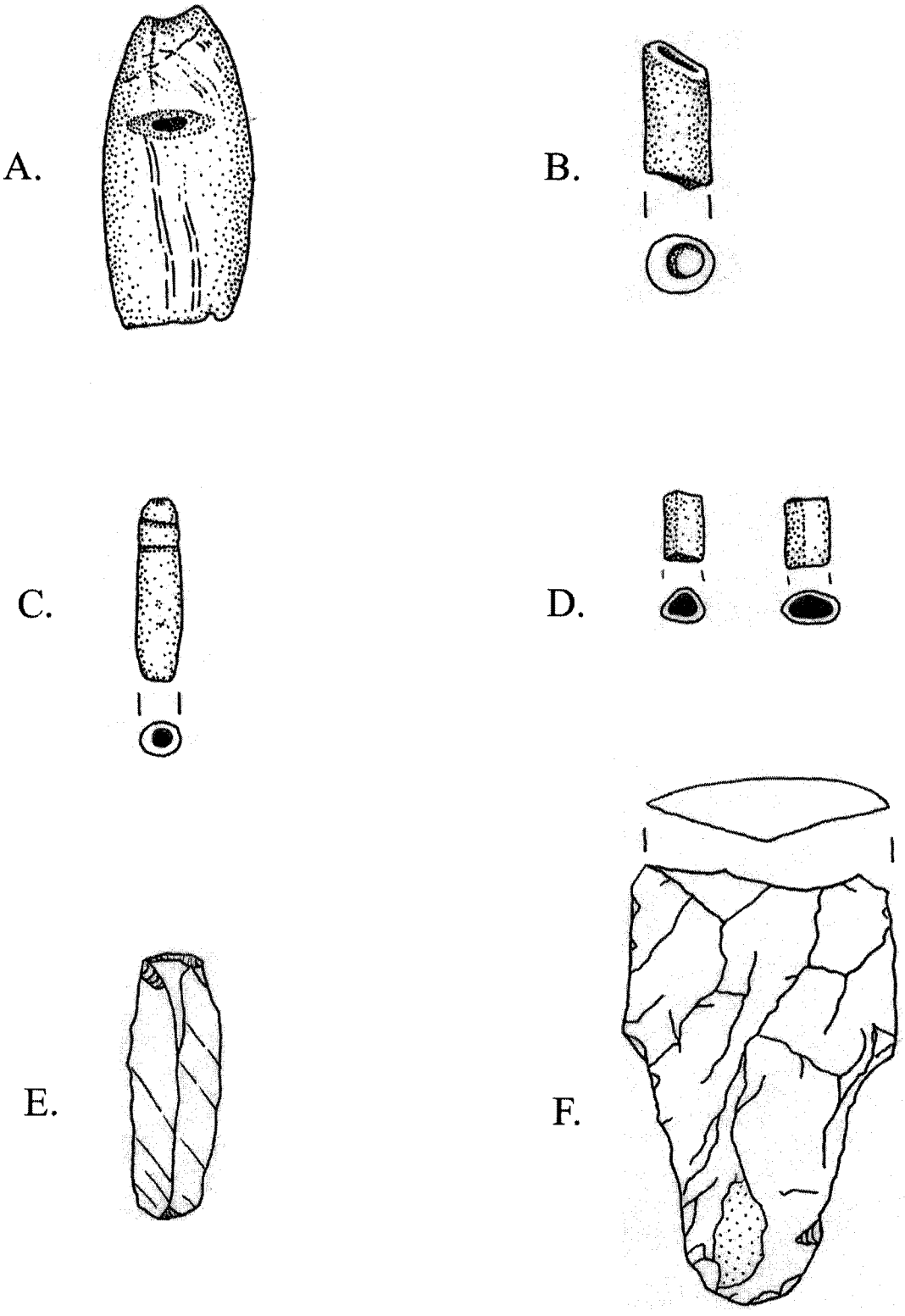


Figure 2. Artifacts (a-f) mentioned in the text.

glossy finish and are relatively similar in shape and size (the lighter bead measures 1.1 cm in length and 5.8 mm in width, while the darker bead measures 1.1 cm in length and 7.0 mm in width). Given the morphology and gracility of the bone, it is possible that the beads were constructed from the long bones of a bird (Rhan-ju Song, personal communication 1998).

Chipped Stone

A number of chipped stone artifacts were discovered on Ledge 2. Although most of these artifacts are made of chert, there are a few other chipped stone implements fashioned out of other materials. For instance, just outside of the entrance of the Passage, a slate chopper was found in association with a metate, ceramics, and human bone. On LL-B, an obsidian blade fragment (Figure 2e), measuring approximately 4.0 cm in length and 1.4 cm in width was discovered in a gour pool near a tip of a chert biface. The presence of an obsidian blade suggests the possibility of ritual bloodletting and ritual activity in this area (McLeod and Puleston 1979:75).

As indicated previously, the majority of the chipped stone artifacts are manufactured out of chert. Of these, many are sections of bifacially worked implements such as the basal fragment of a blade or projectile point (Figure 2f) found on LL-B. Only the lower portion of this bifacial tool was recovered, and it measures approximately 6.8 cm in length and 4.2 cm in width. The chert is opaque and tan in colour, which differs from the other chert found on Ledge 2. Further analysis of chert types in the area may provide insight into the origin of this chert. The form of the tool suggests that it dates to the Classic period.

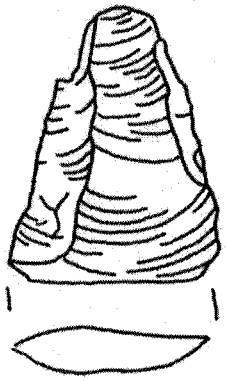
Three other bifacial fragments found on Ledge 2 appear to be a part of a possible laurel leaf blade. Two mid-sections and one tip, crafted from a caramel-coloured translucent chert, are similar in thickness and manufacturing technique. The larger of the two mid-sections (Figure 3c), measuring 5.9 cm in length, 5.0 cm in width, and 8 mm in thickness, was found between two clusters of limestone cobbles in a gour pool on the Area D (see below). The second mid-section (Figure 3b), though slightly smaller in width and length, was encountered on LL-A within the cobbles and stones that line much of the floor. The tip (Figure 3a) was found on LL-B in a gour pool in close association with the obsidian blade. The fragmented nature and varied distribution of these three pieces suggests ritual breakage and deliberate redeposition, rather than being dispersed from one locale to various others through water activity.

Other chert artifacts discovered on Ledge 2 include a tan-coloured chert blade, found in the hollow of the top step on Area E, as well as a number of flakes, two of which were found together in Area D, and six of which were dispersed throughout the Lower Ledge. Further analysis on these objects will be conducted in the 1999 season.

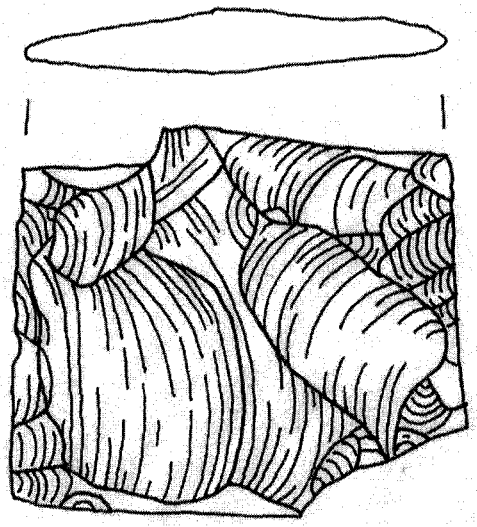
Ground Stone

Several ground stone artifacts, including a number of manos and metates made from granite, were discovered on Ledge 2. Interestingly, the manos were not found in association with the

A.



B.



C.

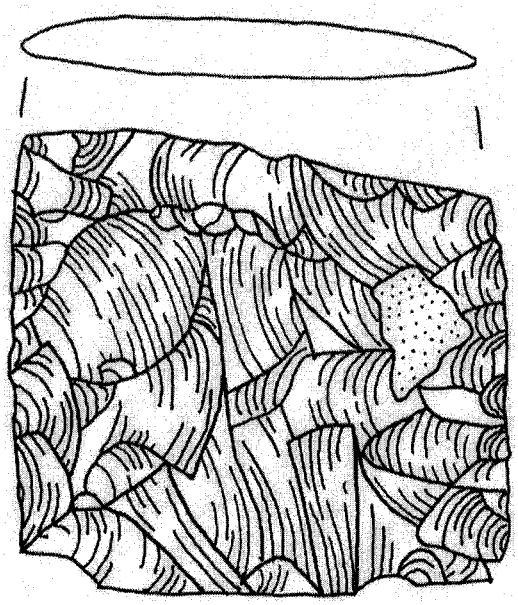


Figure 3. Chert fragments from Ledge 2, Actun Yaxteel Ahau.

metates. While this distribution could reflect displacement of cultural materials by looters, it is important to note that only in one instant (i.e. Actun Tunichil Muknal) have we discovered manos and metates in direct association. On Ledge 2 a partial mano was found in Area F in association with pottery and a few human bones. It measures 11.0 cm in length, 7.3 cm in width, and 5.4 cm in thickness (at the broken end). A second mano was discovered in Area F, just below the entrance to the Phreatic Maze. This complete specimen has a length of 17.3 cm, a width of 8.0 cm and a thickness of 6.2 cm. The surrounding area is blanketed with limestone rocks, olla fragments and ceramic sherds.

At the entrance to the Phreatic Maze, half of a metate was found in association with human bone, ceramic sherds, olla rim fragments, and a slate chopper. This metate fragment measure 25 cm in length, 25 cm in width, and has a depth of 6.5 cm below the lip. The metate was made from a dark grey granite with white inclusions.

Within the phreatic passages, a second metate fragment was discovered in a cluster of olla rims and potsherds. The fragment is 19 cm in length, 24.5 cm in width, and 5.7 cm in depth. Although not as deep as the other metate fragment, they are relatively similar in size. The granite of this metate appears lighter due to a higher number of white inclusions. The surface is dotted with black flecks of what may be charcoal. Both metate fragments found on Ledge 2 are consistent in form with the "turtle-back" variety (Willey et al. 1965). Similar metates have also been observed in Actun Tunichil Muknal. According to Coe (1965:599), "the fact that the turtle-back type is preponderantly of granite may be significant in view of the relative proximity of granite in the Pine Ridge area."

There is also an unusual granite boulder nestled in a pile of rocks on the Lower Ledge. One side of this boulder is flattened as if it had been ground which may indicate that this is a possible metate preform. Further analysis needs to be conducted on this artifact.

Grinding stones are commonly found in cave artifact assemblages and may represent implements used in ritual events. Brady et al. (1997:94) have suggested that such artifacts were used in the production of ceremonial bread. McLeod and Puleston (1978:72) have noted that "halves of granite metates, occasionally accompanied by a mano, turn up in association with the paraphanalia of autosacrifice, though they are also found in chambers containing human remains." The presence of these ground stone artifacts on Ledge 2, in conjunction with other types of artifacts and human remains, reflects a similar pattern.

Miscellaneous (manuports)

A number of manuports, were encountered on Ledge 2. A slate cobble was noted in the Passage through the Phreatic Maze, approximately 15 cm away from a broken speleothem. Both were situated on the Passage floor along with ceramic sherds and jute shells. These objects were designated as manuports, since neither slate nor speleothems occur naturally in the Passage. A second speleothem was found in a gour pool on the Main Ledge within one of two clusters of rocks.

During a brief reconnaissance of Ledge 2, an area just above the eastern alcove revealed that a several stalagmites and stalactites had been removed from this area. Whether or not this can be attributed to looters or the ancient Maya is difficult to ascertain; however, given the provenience of the two speleothems found thus far, the latter is more likely.

The two clusters of limestone rocks in the gour pool also represent manuports because they do not naturally occur in these contexts. The distance between the two clusters is approximately two meters. The northern cluster consists of five large limestone rocks (fist-sized) and six smaller ones. The south cluster consists of six large rocks, four smaller ones, and one speleothem situated on its broken end. Flecks of charcoal are distributed throughout the pool. The area between the two rock clusters is practically devoid of ceramic remains and bone. Only two small sherds (one in the north cluster and one in between the clusters), and a mid section of a biface (situated between the two clusters) were within the gour pool. Human remains were also present in the gour pool but were cemented to the floor by calcium carbonate deposits.

On the Lower Ledge (LL-A) three pieces of quartz, two of which are cuboid in shape, were found near the wash-down area. It is difficult to determine whether the crystals represent natural deposits or whether they are manuports. Further investigations will attempt to determine the origins of the quartz. Both Brady and Prufer (in Bower 1998:57) have noted the presence of crystals in some cave assemblages, and have suggested that crystals were used by shamans in ritual ceremonies.

A number of river cobbles were noted among the limestone rocks and other stone that line the Lower Ledge. Although not much attention was paid to these cobbles during the 1998 field season, more investigations will be made in order to determine their origin. There are a number of possibilities for their presence on Ledge 2. All of the river cobbles are found on the LL-A around the area of the wash-down. It may be possible that some of these cobbles were brought into the cave from above which may explain why many of them were broken. At the same time, the river cobbles may have been transported to Ledge 2 by the ancient Maya. Some researchers have suggested that river cobbles and limestone were often used in caves as hearth stones or torch supports (Graham et al. 1980:158,169). In such cases, charcoal is usually associated with the rocks. This possible relationship will be investigated in the 1999 field season.

HUMAN REMAINS

There is a very high concentration of human bone in all areas of Ledge 2. These remains are predominantly commingled and fragmented, and for the most part do not appear to be in primary context. In 1998 all bone clusters and associated artifacts were mapped. The sex and age of some of the remains were also determined. The population on the ledge represents both infants and adults, as well as females and males. A previous report by Coons (1986) indicated that there were 20 articulated skeletons lying on the surface somewhere on the ledge. A subsequent trip by a group of spelunkers (Roberts 1990) noted that skeletal material existed, but only a MNI of 7 individuals were identified from the disarticulated and fragmented remains. Roberts (1990) also describes several jade artifacts and a clay whistle that are not currently present, and may have been looted. Tom Miller

(personal communication 1989), with whom Coons worked, explains the discrepancy between the two reports in the following manner. He noted that, not being an archaeologist, Coons guesstimated the number of individuals at 20, and simply assumed that the remains were "articulated".

Bone that could be removed from Ledge 2 was brought back to the lab for analysis. Bone that was too fragile or was cemented to the cave floor by calcium carbonate was left in situ. Preliminary observations, including age and sex determinations, have been made where possible and the minimum number of individuals is presently an approximation since our analysis is still incomplete.

In Area A, which covers an area approximately 115 cm by 120 cm, human remains included a number of vertebrae, two femora (a right and left), a tibia, a fibula, ulna fragments, a rib fragment, some cranial pieces, including a frontal fragment, and 5 incisors, a canine, a premolar and a molar, and a number of hand bones. The human remains were located primarily on the edges of this small landing, and because most of the bones were coated with calcium carbonate very little information could be gleaned from the remains. It is very possible, however, that the bones belong to a single individual.

Area B, is 170 cm from the climb up to Area C, and measures approximately 5 meters east-west. The remains of one adult, 2 juveniles, or possibly one infant and one child, were discovered on Area B. Careful examination of the infant remains indicated that it was in a semi-articulated form. The remains are in a small depression a few centimeters from the edge of the level section of the landing. It appears that the head is to the south, and the pelvis and legs are to the north. While it was mentioned that none of the remains were articulated, there are cases where only specific elements of the skeleton are semi-articulated. This was the case for a foot located to the west of Area B, just before it drops off. The adult individual was represented by a number of cranial fragments, long bone fragments and vertebrae.

Area C, which is approximately 3 meters from east to west and 2 meters north to south, has remains of at least one adult individual. There is a left and a right incomplete femur, cranial fragments, radial fragment, ulna fragment, right clavicle, and three tarsals. The bones, like those in other areas of the ledge, are very fragile and soft, hence they were not all retrieved, or identifiable.

Human remains in Area D, which is over 13 meters long, north to south, and approximately 10 meters east to west, were subdivided and mapped in 7 main clusters. Bone that did not constitute a cluster was triangulated from the nearest datum. The first three clusters were located along the north wall. The only bones in this area that appear to be articulated were a left tibia and foot bones in cluster 3. The MNI of the three north wall clusters are 2 adults. There were no juvenile bones in this area.

On the north wall, in a tiny niche directly above cluster 3, was a pelvis. Both the left and right innominate bones, a sacrum and the 3 lower lumbar vertebrae were present in a semi-articulated position, presumably belonging to one individual. The sex of this individual was probably female, approximately 40 to 50 years of age. The bone was poorly preserved, which meant that only certain

traits could be ascertained. The right and left sciatic notch were both indeterminate, falling between male and female, however both innominates had a very deep and wide preauricular surface, indicating a female. The pubic symphysis also indicates this individual was probably a female. On both there was a ventral arc, subpubic concavity, and a sharp ischiopubic ramus. The age range was based on the surface and rim of both the auricular surface and the pubic symphysis. There was also some arthritic lipping on the lumbar vertebrae with some pitting on the surface of the bodies. Why the remains were located so high above the floor is not clear. It is possible that the remainder of the individual was below in one or all of the three clusters. This may also represent the remains of a primary interment in a seated position. Over time as decay took place the lower limbs and upper torso may have fallen below.

Cluster four was located in a gour pool to the south of Area D. The cluster contained the remains of just one individual, but the bones were disarticulated and fragmented. Most interesting are the teeth. The four maxillary incisors are filed in two patterns. The first left and right incisors represent Romero's B4 and the second left and right incisors represent Romero's A2 (Romero 1958, 1970). From the rest of the teeth it seems that this individual might have been a young adult. None of the bones thus far analyzed could be used to provide an age or sex for this individual.

Just south of cluster four and near the stalagmitic column in Area D, was a right pubic bone. The pubic symphysis is intact, which was useful in determining the sex and age of the individual. Based on the sharp medial aspect of the ischiopubic ramus, the ventral arc, the sub-pubic concavity and the distance from the pubic rim of the obturator foramen to the pubic symphysis, it is suggested that this individual was female. This female appeared to have been approximately in her late 40's at death based on the surface and rim of the pubic symphysis when compared to Gilbert & McKern's samples.

Cluster 5 was to the north of cluster four, in a much smaller gour pool. There were the remains of a juvenile, or infant, represented by dentition, long bones and vertebrae. The bones are very fragile and require further analysis.

The remains in cluster 6 were located to the east of cluster 5. They appear to be that of an older adult due to the high amount of attrition on the teeth. Located to the northeast of cluster 4, the remains in cluster 7 are that of a juvenile, or child, based on the long bones and dentition.

The remainder of the human remains in Area D were not very diagnostic and were not included in the determination of MNI. Bones were located on the slope of Area E, leading up to Area F, as well as throughout the passage in the Phreatic Maze. There were few bones in Area F except for the far southern end, near the mouth of the Phreatic Maze. Some of the remains in the passage belong to a juvenile, which were located at the north corner, just to the west of the entrance to the phreatic passages. There was also an individual located at the rear of the phreatic maze, in what we referred to as the crystal room. These remains were located at the bottom of a steep mud slope just under the overhang of a wall. This was a semi-articulated adult, sex undetermined. There do not appear to be any other remains in this area. Elsewhere, only a few bones were noted in the

Lower Ledge. These remains include a tibia, some metatarsals, and a probable femur. The remains from the Lower Ledge have not yet been analyzed.

Thus far the remains that have been analyzed on Ledge 2 suggests that there is an MNI of 13 individuals: 8 adults, 2 of which are female, 3 infants and 2 children. As analysis proceeds this figure could likely change. Ultimately, completion of the analysis will also confirm or negate Coons (1986) suggestion that there were remains of 20 individuals on Ledge 2.

DISCUSSION

Data collected by the WBRCP suggests that taphonomic processes have greatly affected the cultural remains on Ledge 2 of Actun Yaxteel Ahua. Environmental (mud slides), prehistoric (Maya) and recent (looting) human activities (see Nawrocki 1995) have all had an impact on the human remains and artifacts and have made it difficult to determine the primary context of these materials. They further make artifact associations tenuous and the dating of specific prehistoric activities problematic.

The environmental effects on the human and cultural remains are the most evident. Water flow from the surface and drip water acitivity in the cave have resulted in considerable erosion on Ledge 2. Natural cave formation processes, such as the build up of calcium carbonate, has also covered cultural materials. Erosion, however, has certainly caused the most damage. This is evident from the location of human remains and artifacts at the very edge of the ledge and from the clay covering various artifacts. Indeed, evidence suggests that there have been major mud-flows between the time that the site was used by the ancient Maya and the present.

Past cultural factors that would have affected the remains are rather subtle and to some degree difficult to identify. Recent human disturbance in the form of looting, however, is very apparent. For example, artifacts that were previously reported on the ledge (jade) could not be located by the WBRCP research team in 1998. There were also numerous boot prints and an empty pack of cigarettes on the floor and what may be shallow looter's pits.

As a result of these taphonomic factors the primary spatial distribution of the remains on this ledge has been difficult to discern. An earlier report indicated that there were 20 articulated skeletons on the ledge (Roberts 1990). Our investigations noted that human remains are literally strewn all over the main areas of the ledge and we tentatively identified an MNI of 13 individuals. It is possible that future excavations may reveal more human remains.

The general distribution of artifacts suggests three primary areas of prehistoric activity on Ledge 2.. These areas include the Lower Ledge (both A and B), Area D, and the passage into the Phreatic Maze (including the entrance area). As previously mentioned, taphonomic pressures may explain the concentration of artifacts on Areas A, B. C, and D because water may have washed materials down from above. However, it is unlikely that the concentration of artifacts in the Passage and Lower Ledge can be explained by this same phenomenon. At the same time, the density of

artifacts on the Lower Ledge, Area D and the Phreatic Maze may be explained by the flatness of these areas (which could have made them desirable for ritual activity).

The existence of ritual pathways in caves is a topic that is gaining much interest in Maya speleoarchaeology (Awe personal communication 1986; Moyes and Awe 1999). Ledge 2 provides an excellent locus for the study of such activity. Areas A,B, and C represent three consecutive "landings" which lead up to Area D. In many respects, Areas A to C are like as giant stairs which lead up toward the main or most expansive section(Area D) of Ledge 2. When one actually stands on the landings the idea of a pathway becomes more apparent. The north wall of each landing has natural steps in the rock allowing for relatively easy access up to the next level. Once on Area D (or main section of Ledge 2), one is practically directed toward Area F and the entrance to the Phreatic Maze by the carved steps on Area E. The steps, in some ways, are akin to those that rise up toward temple-pyramids at surface sites. Lofty temples were often the place where ceremonies took place, with the ruler or priest emerging from the small 'false' room or doorway. Victims that were sacrificed during such rituals were reportedly thrown down the stairs of the temple to the ground below (Bassie-Sweet 1991; Bensen 1985; Vogt 1969). Is it possible that the carved stairs in Area E reflect the stairs of a temple-pyramid with the passage into the Phreatic Maze as the small temple room? If individuals were sacrificed on the narrow level surface of Area F and then thrown down the stairs to the other sections of the ledge below it could partially explain the distribution of human remains on Area D.

It may also be inferred from the artifact assemblage that ritual feasting could have occurred on Ledge 2 . The presence of jute, ceramic vessels, various lithic implements, charcoal, hearths and ground stone artifacts may be attributable to food preparation within the cave. In many contemporary Maya ceremonies (i.e. chachac), food is often prepared, consumed, and offered to the gods and ancestors during the rituals (Awe personal communication 1998). Hopefully, investigations conducted in the 1999 field season will provide more clues into the ceremonial specialization of Ledge 2 in Yaxteel Ahau.

CONCLUSION

During the 1998 field season, investigations in Actun Yaxteel Ahau focused on Ledges 1 and 2 because they contained considerable evidence of prehistoric cultural activity. Ledge 2 was particularly significant because of the relatively large amount of human bone and artifacts that had been noted on the ledge. Our investigations presently suggest that the remains on Ledge 2 were associated with prehistoric Maya rituals that included human sacrifice, the possible consumption of ritual food, and the offering of various material goods (jade, shell, projectile points, and ceramics). Ceramic remains indicate that these activities were predominantly conducted between Late to Terminal Classic times. The natural and modified topography of Ledge 2 further indicate that the ancient Maya may have followed specific ritual pathways through caves, a practice that may reflect similar patterns at surface sites. Plans for the 1999 field season include a focus on ceramics, the continuation of work on the Lower Ledge and the completion of the skeletal analysis. It is anticipated that work in Actun Yaxteel Ahau will be completed by the end of the 1999 field season.

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SUMMARY OF THE 1996 AND 1998 INVESTIGATIONS AT LABERINTO DE LAS TARANTULAS, CAYO DISTRICT, BELIZE

Christophe G. B. Helmke
McGill University

Cameron S. Griffith
Indiana University

Michael J. Mirro
Radford University

INTRODUCTION

This paper presents a preliminary report on archaeological data gathered over the course of five visits to Laberinto de las Tarantulas (a.k.a. Tarantula Cave) between 1996 and 1998. Although intensive investigations have not yet taken place, each visit has significantly increased the quantity of information available. Because investigations at the site are still underway, this paper only presents a report on the data obtained thus far. A detailed description of the morphology of the cave and associated artifacts will be presented in a future report, following a thorough and complete investigation of the cave.

Important discoveries made in 1998 include the identification of architectural features and the discovery of a series of interconnected and unlooted passages that contained several ceramic vessels. No evidence was found to suggest that these passages had been entered by people since the Maya used the cave. The following paper provides a preliminary analysis of the cultural materials from these passages. These will be studied in terms of their potential as functional, temporal, and status indicators. The discovery of a stela-shaped monument made of slate is another notable discovery (Awe et al. in press). The presence of this slate monument is significant with regard to the social and ritual function of the cave. The architectural features and the monument demonstrate the importance of this small archaeological site.

SITE DESCRIPTION AND LOCATION

The cave has been formally designated in published materials as Laberinto de las Tarantulas (e.g. Awe et al. in press; Awe et al. 1998). Nevertheless, for the sake of brevity the site will be referred to in this report as Tarantula Cave. In 1996 countless troglophilic tarantulas (see Reddell 1981: 3-4) were seen throughout the cave, hence the name of the site. Two years later, however, none were seen. The presence of these arachnids may be due to seasonal differences as the explorations in both years took place during the dry and rainy season respectively.

Our investigations have identified two entrances to Tarantula Cave thus far. Both are on the western flanks of the hills defining the eastern perimeter of the Roaring Creek valley. The location of

the site has not yet been secured by GPS-derived UTM coordinates or by land survey. Based on government maps at a scale of 1:50 000 the location of the cave can be described as lying 1.7 km north of Actun Yaxteel Ahau, 3 km northeast of Actun Tunchil Mucnal, and 3.5 km north-northeast of Cahal Uitz Na. The entrances lie at a low elevation above the valley bottom, perhaps as low as 20 meters above the surrounding terrain.

During the first visit to the site it was apparent that looting was extensive (Awe et al. in press; Awe et al. 1998). Evidence for these illicit activities was present in the form of displaced sherds and sherds with fresh breaks. Sherds at the entrance to the cave also appear to be in a secondary context since they were found lying directly upon the forest floor. Every subsequent visit indicated that looting activities have continued. Indications of recently shifted and upturned rocks were noted. Presumably the stones were moved in an attempt to search for, or retrieve, artifactual materials. Despite the fact that no clear looter's pits were seen, several shallow pits (no larger than 50 cm in diameter) were noted along the base of cave walls. Since these were only seen in the upper passages that contained whole ceramics, the presence of these pits is puzzling. In all instances at other sites, the presence of looter's pits generally signals the absence of complete vessels. This does not seem to be the case at Tarantula Cave. Consequently it is suggested that the small pits in the upper passages are the result of rodent activity rather than deliberate human search for artifacts.

The cave passages are defined almost exclusively by large breakdown blocks. Some remnants of passages, including the lower entrance, were evidently formed by limestone dissolution. Despite this, no true dissolution chambers were documented in 1998. The cave appears to have been formed by the collapse of a chambered resurgence of a stream that drains off the foothills of the Mountain Pine Ridge. The cave is characterized by a maze of small and interconnected passages. Only two small areas have high enough ceilings to permit standing. Since all other passages of the cave are small, squeezing and crawling between breakdown is the only mode of locomotion (Figure 1).

INVESTIGATIONS

To date the archaeological investigations at Tarantula Cave have been limited to exploration, mapping, and documentation of artifacts. These efforts were not completed during the 1998 but it is hoped to complete these efforts in 1999. Each type of investigation will be described and discoveries made during these operations are summarized below.

Exploration

In 1996 Tarantula Cave was only briefly explored. Many important features were noticed, but time prevented anything more than a cursory examination. Visits to the cave in 1998, were aimed at further exploration along with recording as much of the cultural material as was possible. Summarized below are descriptions of the main features noted during the exploration of the cave and of discoveries made in 1998 .

Exploration revealed that the Stela Chamber could be accessed by two separate passages (Passages 6 and 7). The passage providing easier access was marked by a wooden staff that was erected in the floor below the opening to the passage. This staff was apparently driven into the ground by looters

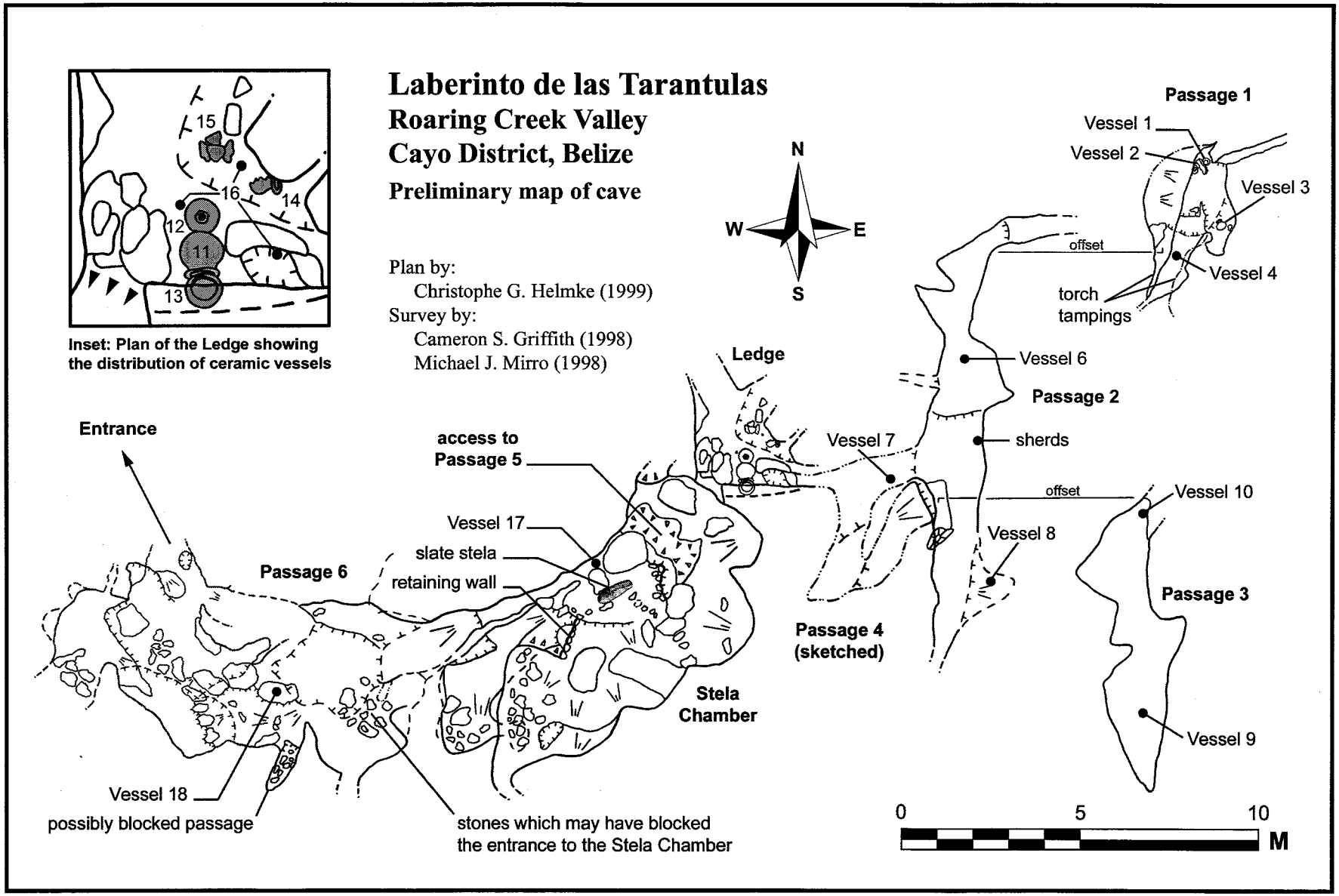
Laberinto de las Tarantulas
Roaring Creek Valley
Cayo District, Belize
Preliminary map of cave
Plan by:
Christophe G. Helmke (1999)
Survey by:
Cameron S. Griffith (1998)
Michael J. Mirro (1998)
Inset: Plan of the Ledge showing the distribution of ceramic vessels
15
16
14
12
11
13
N
W
E
S
Passage 1
Vessel 1
Vessel 2
Vessel 3
Vessel 4
offset
torch tampings
Ledge
Vessel 6
Passage 2
sherds
Vessel 7
offset
Vessel 10
Vessel 8
Passage 3
Passage 4 (sketched)
Vessel 9
Entrance
access to Passage 5
Vessel 17
slate stela
retaining wall
Passage 6
Stela Chamber
Vessel 18
possibly blocked passage
stones which may have blocked the entrance to the Stela Chamber
0
5
10
M

Figure 1

between the 1996 and 1998 visits. The same type of marker was found adjacent to a path indicating the location of the Slate Altar group in the periphery of Cahal Uitz Na (Mirro et al. this volume, see also Helmke et al. this volume).

The 1998 explorations also confirmed the presence of architectural features within the cave. These were hastily noted in 1996 but their presence was not confirmed until two years later. These dry-laid retaining walls define the eastern and western sides of the Stela Chamber. The Stela Chamber is elevated above all the passages that lead to it from the entrances. Measured from wall to wall the chamber measures 9 m long (northeast to southwest) by 4.5 m wide (northwest to southeast). Breakdown in the chamber slopes sharply downward from the walls to the center of the room. Consequently the actual area that can be circulated is quite modest. The floor surface of the room measures only 2.5 m (north-south) by 3 m (east-west). It is at the center of this small surface that the slate stela was erected (see Awe et al. in press). Sizeable breakdown blocks that apparently have collapsed from the ceiling give the room its elevated appearance. The Maya erected dry-laid retaining walls on the eastern and western flanks of this pile of breakdown. The walls retain soil and colluvium that were transported to the chamber to create a level surface atop the pile of breakdown. It should be noted that without these architectural modifications it would have been difficult to erect the stela. Consequently it appears that the retaining walls were constructed to facilitate the erection of the slate monument. The western wall is over six courses high and the upper courses are coated with calcium carbonate. This substantiates the antiquity of the wall. Detailed documentation of the architectural features is planned for the 1999 season.

During mapping operations it was noticed that a large concentration of limestone blocks were clustered at the base of the passage leading up to the Stela Chamber (Passage 6). The quantity and position of the limestone blocks suggested that these may have once blocked the passage to the Stela Chamber. Widespread evidence of looting in the cave may account for the dismantled condition of this hypothetical blockage. Although it cannot be proven that the passage was indeed blocked-off in antiquity, the frequency with which walled-in chambers occur in cave sites in the Maya area (e.g. Awe 1998; Brady 1997; Carot 1989; Dunham & Prufer in press; Mirro et al. this volume), leaves this interpretation as a very likely possibility. Rocks that are piled up between breakdown blocks elsewhere in the cave may also represent other blocked passages that were not dismantled by looters. Investigations in 1999 will examine these features in closer detail. The presence of intentionally blocked passages in Tarantula Cave would add credibility to the suggestion that the passage leading to the Stela Chamber was indeed blocked in antiquity.

Exploration of the Stela Chamber revealed that two passages extend northward from this room (Passages 4 & 5). The upper passage (i.e. Passage 4) is only accessible from a ledge that overlooks the Stela Chamber. The lower passage (i.e. Passage 5) is accessible through a large depression in the northern portion of the Stela Chamber. This passage was only briefly inspected in 1996 and 1998. Artifactual material was noted and the presence of shallow pools of water may indicate that it continues down to a small stream. Conversely, it is also possible that the pools are a result of flooding during the rainy season. This passage will be explored in 1999.

The ledge leading to the upper passages was discovered by Mike Mirro. It is located in the northern extremity of the Stela Chamber, on the opposite side of the depression that leads to Passage

5. The ledge is approximately 5.5 m above the floor of the Stela Chamber. Access to it can only be gained by "chimneying" between the sloping ceiling and the breakdown. This ledge connects to a series of passages running northward from the ledge. Three complete vessels were discovered on the surface of this ledge and numerous other sherds representing 3 additional vessels were also noted. Small dead-end passages extend to the north and east of the ledge but terminate after less than 5 m. A small hole in the southern end of this ledge (approximately 60 cm in diameter) drops down to Passage 4. The edge of the hole may have been intentionally lined by flat slabs of limestone. A larger limestone slab found lying adjacent to the hole is large enough to serve as a cover. It is possible that during ancient usage of the cave the hole was concealed by shifting the larger slab over the hole.

Below the hole is a short narrow crawl space (Passage 4) in which one complete vessel and other sherds were noted. The constricted passage stemming from the hole leads to a relatively spacious hall. The larger hall was designated Passage 2 and has a high ceiling (approximately 10 m high) permitting easier circulation and standing. The eastern edge of this passage is a cliff-like limestone wall that may have been exposed during faulting. The western wall is formed by large stacked breakdown blocks that overarch and lean onto the eastern wall. One complete and one fragmentary vessel were found in this passage. Minute charcoal fragments are sprinkled over the entire floor of Passage 2. Two small chambers defined by voids in the breakdown extend below the northern and southern ends of Passage 2. These were designated Passages 1 and 3 respectively. In Passage 1 three complete and two partial vessels were found. Additionally, calcite-coated torch tamp marks were seen on the western and eastern wall of the narrow tunnel connecting Passages 1 and 2. In Passage 3 one complete and one fragmentary vessel were located. Ceiling height in Passage 3 is variable and ranges from 1 m in the south to 2 m in the north. Charcoal fragments were also seen on the floor of the passage. Thus in sum a total of 9 complete vessels and 7 partial vessels were discovered in the northern passages.

Small sub-aquatic coral-like formations were seen on the eastern walls of Passages 1 and 3. These appear to pre-date Maya usage as none of the artifacts display these types of concretions. These indicate that Passages 1 and 3 were once submerged in antiquity and that the breakdown collapsed prior to usage by the Maya.

Mapping

Mapping operations in 1998 completed just under 60 m (horizontal distance) of detailed survey at a scale of 1:50. As it was unknown how much time could be afforded for investigations, the surveys were begun from the inside of the cave and worked their way out. With the exception of the Stela Chamber all tunnels mapped inside the cave were designated as "passages" and numbered sequentially. Consequently the deepest passage mapped is Passage 1 with numerical designations increasing as one moves closer to the entrance of the cave. Only a short segment of mapping needs to be completed to tie the mapped passages to the cave entrances. Other passages that were not explored in 1998 will be mapped in 1999. It is hoped that the mapping can be completed in just a few additional visits.

All mapping was carried-out by setting up semi-permanent datums that were connected by string and integrated by azimuth bearings and distance measurements. Offsets measured from these baselines were used to plot the morphological and cultural features of the cave. Datums were left in the cave to facilitate the resumption of mapping operations in 1999 from known reference points. A map of the site will be compiled and produced once all mapping operations are completed. The map in the present

report is only included to clarify the configuration of the cave, as well as to indicate the distribution of cultural material.

Artifacts

Artifacts identified at Tarantula Cave are exclusively represented by ceramic sherds and whole vessels. No cultural materials from other artifact classes were discovered. Artifacts remaining in the extensively looted lower passages of the cave (Passages 5 - 7 and the Stela Chamber) cannot be taken as a representative sample of materials deposited there by the Maya. The discovery of the unlooted upper passages (Passages 1 - 4 and the Ledge) thus provides a more representative and comparative sample. Since all of the 9 complete vessels were discovered in the upper passages it seems likely that the lower passages once contained a similar frequency of complete vessels. If complete vessels had been present in the lower passages, these would probably have been removed by looters following the original discovery of the site prior to 1996.

At the time of the investigations no decision had been made concerning the removal of complete vessels for safekeeping. As a result all complete vessels discovered in 1998 were examined and photographed in situ and were left inside the cave. During the first 1998 exploration three fragmentary ceramic specimens were collected. Their provenience was recorded on the maps and in field notes. Although all specimens were collected as surface finds only one of the specimens was in a primary context. The other two had recently been retrieved by looters and placed on prominent bedrock outcrops, presumably in hopes of assembling entire vessels from fragments. A similar instance is documented for a partial vessel in Chamber 6 of Ledge 1 of Actun Yaxteel Ahau (Mirro this volume). Comparison to the assemblages that have been retrieved from other sites in the Roaring Creek valley suggested that the three collected specimens represent rare types. It is this characteristic that recommended the removal of these sherd specimens from the site.

Although the ceramic sample listed in the appendix is far from the complete inventory of all the ceramic vessels inside Tarantula Cave, it appears that ollas constitute approximately half of the documented assemblage. Bowls with incurving sides and squared lips of the Garbutt Creek Red type and shallow Z-angle dishes with everted rims form the second most important grouping. This second grouping of bowls and dishes constitutes the other half of the assemblage. Specialized forms including a vase and shallow dish with tripod supports represent the smallest component of the assemblage. Similar proportions have been noted for form distributions at other cave sites in Belize (e.g. Pendergast 1971; 1974; Helmke this volume). Of particular note is that Daylight Orange: Darknight Variety sherds appear to predominate over Roaring Creek Red sherds. Despite the fact that ceramic analyses have not yet been completed, data from other sites in the Roaring Creek valley suggest that Roaring Creek Red systematically predominates over the Daylight Orange: Darknight Variety. The discrepancy observed for the Tarantula material may be due to temporal differences. Nevertheless, differences in function and the status of cave users should not be excluded from the equation until in-depth analyses of the Tarantula material are completed.

SUMMARY

Relatively few data have been gathered from Tarantula Cave. Nevertheless, based on the ceramic types identified for the vessels discovered in the upper passages, it is apparent that they date to the

Terminal Classic (AD 800-900). As a result it seems clear that the upper passages were used during an isolated and relatively short period. Dating the period of usage of the lower passages will be difficult since many artifacts are now in secondary contexts. Preliminary identifications made in the field suggest that Late Classic ceramics (AD 700-900) were also deposited in the lower passages. Ceramic types pre-dating the Late Classic have not yet been identified. Comparison to the patterns observed at other sites in the Roaring Creek valley indicates that early ceramics are found near the entrance to caves. No research was undertaken to identify whether this pattern is present at Tarantula Cave. It is possible that modern disturbance has eliminated any evidence of early usage near the entrance. Thus, based on all the data presently available, usage of the cave can be assigned to the Late Classic.

The social and ritual implications of the material discovered within Tarantula Cave are exceptionally distinctive. The small stela suggests a focus for ritual activities (see Awe et al. in press). As a result it is possible that the cave functioned as a pilgrimage site. Generally, stelae at surface sites are associated with elite patrons. Therefore it is likely that the same sumptuary laws were associated with the monument of Tarantula Cave. The presence of a Cabrito Cream-polychrome sherd (see Appendix) in close proximity to the stela adds support to the interpretation that individuals of high status utilized the Stela Chamber. Additional analysis needs to be undertaken before more of the social implications can be ascertained.

APPENDIX:
CERAMIC SPECIMENS FROM TARANTULA CAVE

This appendix briefly describes each discrete artifact recorded thus far at Tarantula Cave. All ceramic specimens presented below were designated as "vessels". The designation of "vessel" includes all complete ceramic containers and all sherd clusters that appeared to conjoin and constitute reconstructible vessels. While not all vessels are necessarily intact or represented by 100 % of the sherds, the majority of the vessels presented are over 50 % complete. An exception is the one polychrome sherd recovered that was obviously derived from a distinct vase. This sherd is thus presented as a discrete vessel. The principal attribute that differentiates all vessels at Tarantula Cave is their completeness and their provenience. As was alluded to above, the majority of complete vessels are from primary contexts while sherd material and fragmentary vessels are prevalent in the heavily looted passages. Due to the fragmented and disturbed nature of the material in the heavily looted passages, an inventory of such material was not undertaken.

The vessels are presented according to the passage where they were discovered and by vessel designation. The numerical sequence attributed to each vessel increases with the numerical designations of the passages in which they are located. Since the passages were numbered from the inside of the cave outwards, the vessel designations follow the same sequence. As a result Vessel 1 is located in Passage 1 and Vessel 18 in Passage 6.

The vessel descriptions follow an abridged and modified structure of the one designed by Pendergast for the Actun Polbilche material (1974). For all specimens the following information is presented: 1) provenience, 2) form, 3) size, 4) surface, 5) type, 6) color, and 7) remarks. Provenience information records the passage or area within the cave in which the vessels were found. Additional details are given to describe the particular context. Under this heading it is specified which materials were removed from the cave by WBRCP personnel. If a vessel is fragmentary or composed exclusively of sherds, details concerning the contextual distribution of conjoining sherds are also given. "Form" defines whether a vessel is complete, broken, or fragmentary. These three categorizations are aimed at relating the state of preservation of a vessel. A one-word form description is also used at the start of this heading. Forms identified for the Tarantula ceramics are: a) ollas, b) bowls, c) dishes, d) tripod dishes, and e) vases. Description of the body profile and appendages such as annular or ring bases are indicated when present. The "size" heading includes rim diameter and vessel height. In cases where the body of the vessel exceeds the rim diameter, a maximum body diameter is also given. Wall thicknesses were not obtained during the 1998 season. Consequently, none are presented here. "Surface" describes the texture and presence or absence of slip on the exterior and interior surfaces. Fire-clouding when present is also indicated under that heading. The "type" section records the ceramic type of the vessels. The type names established by Gifford for the Barton Ramie typology (1976) were used here for type determinations. In cases where the type represented does not occur at Barton Ramie other sources were relied upon. The time period represented by the types immediately follow the type names. In cases where intersite references were deemed of relevance these are also presented. A qualitative assessment of the color of the visible surfaces of the vessels was made in the field. These determinations of color identify the slip, the base color, and/or the color of fire-clouding. Where appropriate a section of

remarks was included. No paste or temper descriptions are available due to lack of time in the field. As the data presented below is based on a series of hasty field notes, certain fields were left blank since no data were available at the time of writing. During the 1999 field season additional data on the vessels will be generated and compiled.

PASSAGE 1

Vessel 1

Provenience: Passage 1: northern end. Associated with Vessel 2. Both vessels lie underneath a small cluster or pile of apparently fallen speleothems that wedge the vessels against the wall.
Form: Complete bowl with incurving sides. Flattened base. No annular or ring base noted.
Size: Rim diam. 18 cm, max. diam. n.d., height n.d.
Surface: Unslipped and fire-clouded exterior. Interior slipped.
Type: Garbutt Creek Red: Paslow Variety (Gifford 1976: 231 - 233, Fig. 142a). Spanish Lookout Complex (AD 700 - 900).
Color: Exterior unslipped. Color of fire-clouding n.d.. Interior slip is brown to dark orange.

Vessel 2

Provenience: Passage 1: northern end. Associated with Vessel 2. Both vessels lie underneath a small cluster or pile of apparently fallen speleothems that wedge the vessels against the wall.
Form: Broken bowl. Incurving sides. Flattened base. No annular or ring base noted.
Size: Rim diam. 14 cm, max body diam. n.d., height n.d.
Surface: Unslipped and fire-clouded exterior. Interior slipped.
Type: Garbutt Creek Red: Paslow Variety (Gifford 1976: 231 - 233, Fig. 142a). Spanish Lookout Complex (AD 700 - 900).
Color: N.d. on exterior base color or color of fire-clouding. Interior dark orange slip.
Remarks: Bowl was broken into two conjoining sherds by a speleothem. Bowl is complete, but fragmented.

Vessel 3

Provenience: Passage 1: eastern portion of passage.
Form: Complete olla. Wide orifice, globular body, rounded base, direct outcurving rim and neck.
Size: Rim diam. 15.5 cm, max. body diam. ca. 20 cm, height 22 cm.
Surface: Smooth unslipped interior and exterior surface.
Type: Related to Cambio Unslipped (Smith 1955: Fig. 67a, 1-4; Adams 1971: 18; Sabloff 1975: 153-155) and Cayo Unslipped: Cayo Variety (Gifford 1976: 276-282). Boca Complex (AD 771-909) and Spanish Lookout Complex (AD 700 - 900).
Color: Tan colored exterior and interior.
Remarks: One small fragment of charcoal was found under the olla. Smaller olla body sherds were seen in a cluster near base of Vessel 3.

Vessel 4

Provenience: Passage 1: southern end. All sherds found in a narrow cavity in the breakdown. Seven sherds found in a cluster approximately 25 cm in diam., 1 basal sherd was found 1.25 m northeast near Vessel 3. This vessel was collected.

Form: Fragmentary shallow flat-bottomed dish with outflaring sides and tau-shaped tripod supports. A small ridge runs along the basal break. Approximately one-third of the dish is represented.
Size: Rim diam. ca. 25 cm, diam. of base n.d., height of sides n.d., height of tripod supports n.d..
Surface: Exterior and interior slipped.
Type: Tinaja Red: Tinaja Variety (see Smith 1955: Fig. 47c, 1-7; Adams 1971; Sabloff 1975). A similar specimen is illustrated in Gifford (1976: Fig. 82s) but incorrectly labeled as "Minanha Red"(Joseph Ball pers. comm. 1998). Tau feet are generally added to Tinaja Red dishes after 800 AD. Identical specimens from Altun Ha date to the Pax Phase (AD 825 - 900) (Christophe Helmke pers. observation 1999; Pendergast 1990: 143; Fig. 64b). This implies a Terminal Classic date for the specimen recovered in Tarantula Cave. Dishes of this form are not reported from Seibal or Altar de Sacrificios (Sabloff 1975: 158-160, Figs. 296-305; Adams 1971: 23, Figs. 58b).
Color: Interior and exterior are dark red.
Remarks: Small pieces of charcoal were found underneath the cluster of sherds.

Vessel 5
Provenience: Small and narrow tunnel between Passage 1 and 2.
Form: Fragmentary. Vessel form n.d. Ring base.
Size: Ring base diam. 11 cm, height of ring base 1 cm.
Surface: Unslipped.
Type: Too fragmentary. Possibly Late Classic (AD 600 - 900).
Color: N.d.

PASSAGE 2

Vessel 6
Provenience: Passage 2: northern portion. Lying sideways atop breakdown.
Form: Complete bowl. Slightly incurving sides with ring base. One triangular notch chipped off the rim. Conjoining sherds are lying in bowl.
Size: Rim diam. 26.5 cm, max. body diam. n.d., height n.d., ring base diameter n.d., ring base height ca. 1 cm.
Surface: Unslipped below medial break and extensively fire-clouded exterior. Slipped on exterior above the medial break, and slipped interior. Thumb impressions are present along the exterior medial break. An incised line runs below the rim on the exterior.
Type: Similar to Vaca Falls Red: Vaca Falls variety(Gifford 1976: 235-237, Fig. 144b). Spanish Lookout Complex (AD 700 - 900).
Color: Unslipped exterior surface n.d.. Slip on interior and exterior is red-orange. Fire-clouding is dark brown verging on black.

Vessel 8
Provenience: Passage 2: southern portion. Lying on downward-sloping colluvium under a low overhang extending into the eastern wall.
Form: Fragmentary olla. Half of rim present, body present only to widest diameter. Base is missing.
Size: Rim diam. > 24 cm, max. body diam. ca. 30 cm, height >20 cm.
Surface: Unslipped exterior and interior surfaces. Lightly striated exterior.
Type: No type determination assigned.

Color: Unslipped surfaces are a red-brown color.

Additional Sherds in Passage 2

Four additional olla body sherds were located. These sherds were found in a cluster in association with smaller sherds. The cluster lies in the center of the passage along the eastern wall. Another sherd found near Vessel 7 may conjoin with sherds of this cluster.

PASSAGE 3

Vessel 9
Provenience: Passage 3: southern end. Vessel lies on top of an elevated and level surface at a point where the ceiling drops to 1 m in height.
Form: Complete olla. Globular body, rounded base.
Size: Rim diam. 16.5 cm, max. body diam. ca. 25 cm, height 21 cm.
Surface: Unslipped exterior and interior surfaces. Light striations on exterior. Small applique band with incised rope-like design just below the neck, running along the shoulder.
Type: Cayo Unslipped: Cayo Variety (Buff, Impressed-appliqued) (Gifford 1976: 279, 282, Fig. 182). Spanish Lookout Complex (AD 700-900).
Color: N.d.

Vessel 10
Provenience: Passage 3: northern end.
Form: Fragmentary bowl. Bowl with incurving sides. Base missing.
Size: Reconstructed rim diam. 18.8 cm, max. body diam. n.d., height n.d..
Surface: Exterior n.d.. Interior slipped.
Type: Garbutt Creek Red (Gifford 1976: 230 - 233). Spanish Lookout Complex (AD 700 - 900).
Color: N.d.

PASSAGE 4

Vessel 7
Provenience: Passage 4: narrow passage between the ledge and Passage 2. Base is partially imbedded in the alluvium of a dry stream bed. May have been deposited to present location by hydraulic activity.
Form: Complete Olla. Wide orifice, globular body, rounded base, outcurving rim and neck.
Size: Rim diam. 20 cm, max. body diam. n.d., height n.d..
Surface: Smooth slipped exterior. Interior n.d..
Type: Related Tinaja Red: Tinaja Variety (Smith 1955: Fig. 47c, 1-7; Adams 1971: 23, Fig. 58b; Sabloff 1975: 158-160, Figs. 296-297). Late Classic (AD 700-900). Unlike the incurved base of the slipped olla illustrated in Adams (1971: Fig. 58b), Vessel 7 has a rounded base. Additionally Tinaja Red ollas at Seibal usually have restricted orifices, unlike Vessel 7. Despite these differences, the slip and profile of the neck and rim are similar to Tinaja Red ollas of the Peten.
Color: Exterior has a red slip.

Additional Sherds of Passage 4

Two additional sherds were located. One olla body sherd was found near Vessel 7. This sherds may conjoin with the cluster of Passage 2. Additionally a rim sherd of a Daylight Orange: Darknight Variety (Gifford 1976: 301 - 302; Fig. 199) dish was found near Vessel 7 imbedded in the alluvium of the dry stream bed. This sherd may have washed down from the ledge as Daylighy Orange: Darknight Variety sherds were found to be concentrated on that ledge.

THE LEDGE

Vessel 11

Provenience: Ledge: southern end. Associated with Vessels 12 and 13.
Form: Complete olla. Wide orifice. One fourth of the length of the rim has been lightly chipped-off.
Size: Rim diam. 26-27 cm, max. body diam. 36 cm, height 34 cm.
Surface: Unslipped exterior and interior. Exterior lightly striated. Kill hole perforates side of body.
Type: Related to Cambio Unslipped (Smith 1955: Fig. 67a, 1-4; Adams 1971: 18; Sabloff 1975: 153-155) and Cayo Unslipped: Cayo Variety (Gifford 1976: 276-283). Boca Complex (AD 771-909) and Spanish Lookout Complex (AD 700 - 900).
Color: Uniform dark brown exterior surface. Interior surfaces n.d.. Numerous patches of guano on exterior surface do not appear to have tainted the color.
Remarks: Vessel 13 appears to have served as a lid for Vessel 11. Primary associations of this kind are documented for vessels inside Actun Chechem Ha. Also see remarks for Vessel 12, below.

Vessel 12

Provenience: Ledge: southern end. Associated with Vessels 11 and 13.
Form: Complete olla. Narrow orifice. Approximately half of the rim has been spalled off.
Size: Rim diam. 12 cm, max. body diam. ca. 35 cm, height 36 cm.
Surface: Smooth unslipped exterior and interior surfaces. Kill hole perforates base.
Type: Related to Alexanders Unslipped: Alexanders Variety (Gifford 1976: 283; Fig. 184p). Spanish Lookout Complex (AD 700 - 900).
The profile of the neck and rim of a specimen designated by Gifford as an Alexanders Unslipped (1976: Fig. 184p) is identical to the profile of Vessel 12. Nearly identical specimens have found at Actun Polbilche (Pendergast 1974: 23, Fig. 6b; 27, Fig. 8a; 29, Fig. 8c). Body profiles, rims, sizes, and proportions of the Polbilche specimens are all very similar. Major difference is that the Tarantula specimen shows no signs of slip or wash on exterior.
Color: Base color of lower portion is light brown grading into dark brown in the upper portion. Small patches of guano have tainted the upper portion. Minuscule specks of calcite concretions abound on the lower base.
Remarks: Leans against Vessel 11. A small ridge of dust and debris has accumulated at the point where the body of both ollas meet. This ridge appears to confirm the ollas are in primary context.

Vessel 13

Provenience: Ledge: southern end. Associated with Vessels 11 and 12.
Form: Complete bowl. Bowl with incurving sides and annular base.
Size: Rim diam. 34 cm, max. body diam. ca. 36, height ca. 7 cm.
Surface: Exterior and interior surfaces are slipped and extensively fire-clouded.

Type: Garbutt Creek Red: Garbutt Creek Variety (Gifford 1976: 230 - 231; Fig. 140). Spanish Lookout Complex (AD 700 - 900).
Color: Exterior and interior surfaces have a red slip. Fire-clouding is dark brown verging on black.
Remarks: Associated with Vessel 11. It appears that Vessel 13 was used as a lid for Vessel 11. Primary associations of this kind are documented for vessels inside Actun Chechem Ha.

Vessel 14
Provenience: Ledge: eastern portion. Lying along eastern wall underneath low overhang.
Form: Fragmentary olla.
Size: Rim diam. 18 cm, max, body diam. 25 cm, height ca. 23 cm.
Surface: Exterior and interior unslipped. Exterior lightly striated.
Type: No type determination assigned.
Color: N.d.
Remarks:

Additional Sherds on the Ledge

Vessel 15
Provenience: Ledge: eastern portion. Cluster of sherds lies near Vessel 4. Also located under overhang near eastern dead-end passage that extends eastward from the ledge. Cluster is formed by 3 sherds. One lies under a rock.
Form: Fragmentary olla(s). Sherds are similar in proportions to Vessel 11.
Surface: Unslipped exterior and interior surfaces with light striations on the exterior.
Type: All diagnostic elements are missing.

Vessel 16
Provenience: Ledge: scattered over southern portion of ledge. Total of 4 sherds. One sherd lies near Vessel 12. Two sherds between Vessel 14 and 15, and one in the upper portion of the hole leading to Passage 4.
Form: Fragmentary dish(es). Z-angle body profiles, with rounded and everted rim. Pronounced ring bases always present.
Type: Daylight Orange: Darknight Variety (Gifford 1976: 301 - 302, Fig. 199). Transitional between the Spanish Lookout Complex and the New Town Complex (AD 850 - 1000).
Remarks: Additional sherds of this type were found at the intersection between Passages 2 and 4, near Vessel 7. These may have once formed part of a single vessel. Based on preserved resist decorations on the interior surfaces of the sherds, it was not possible to determine if they were all decorated with the same motif.

STELA CHAMBER

Vessel 17
Provenience: Stela Chamber: central portion, secondary context. A small cluster of sherds was found between a rock outcrop and the northern wall of the Stela Chamber, just 1 m north of the slate stela. All sherds were apparently in a secondary context. One specimen was collected.
Form: Fragmentary vase. Cylinder vase with flat base.

Size: Too fragmentary, n.d..
Surface: Exterior is painted polychrome on cream surface. Interior is unslipped.
Type: Cabrito Cream-polychrome ceramic group (Joseph Ball pers. comm. 1998). Terminal Classic (AD 800 - 900). Although very little remains of the figurative scene, the sherd apparently depicts a portion of a headdress. Iconographic elements preserved on the sherd show affiliations with the program represented on vase K 2796 from Naranjo (Reents-Budet 1994: Figs. 2.32; 2.33; 6.1; 319-320).
Color: Unlike the common reds and oranges of the Cabrito type, the vessel has been fired to a dark brown with black painted designs.
Remarks: Cabrito Cream-polychrome ceramics have been found in high-elite contexts, and may be indicative of royal status (Joseph Ball pers. comm. 1998).

PASSAGE 6

Vessel 18
Provenience: Passage 6: secondary context. Was found resting on top of a prominent rock. This specimen was collected.
Form: Fragmentary. Outflaring pedestal base. Vessel form possibly dish.
Size: Max. diam. of base n.d., height ca. 10 cm.
Surface: Unslipped interior and exterior surfaces. No traces of slip remain. Thorougly eroded surface suggests that slip may have been worn off.
Type: Too fragmentary. Terminal Classic (AD 800 - 900). In the Terminal Classic/Early Postclassic transition, outflaring pedestal bases are frequently found on Roaring Creek Red dishes (Graham 1987; see also Gifford 1976: 240 - 243; Figs. 149, 150, & 151k). Two similar specimens have been discovered in the Main Chamber of Actun Tunchil Mucnal. Similar specimens have been found at Altun Ha (Pendergast 1982: Fig. 93c; 1990: Fig. 46j) and Actun Polbilche (Pendergast 1974: Fig. 10d).
Color: Tan to buff colored base color.

ENTRANCE

The sherds at the entrance were only briefly inspected. Among the dozens of sherds most notable specimens were 3 Daylight Orange: Darknight Variety (Gifford 1976: 301 - 302; Fig. 199) rim sherds and 1 high ring base. All are diagnostic of the Terminal Classic/Early Postclassic transition (AD 850 - 1000).

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Watchmen. Last but not least we would like to graciously commend all Fer-de-Lances for embracing the revolutionary motto "Don't tread on me" on our nocturnal return trips to the Xibalba Hilton.

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AN ANALYSIS OF THE ARCHAEOLOGICAL SPECIMENS AT IAN ANDERSON'S 'JUNGLE ADVENTURE CAMP', CAVES BRANCH VALLEY, BELIZE

Christophe G. B. Helmke
McGill University

INTRODUCTION

The Western Belize Regional Cave Project, under the direction of Jaime J. Awe of the University of New Hampshire, is one of the first archaeological projects in the Maya area to investigate ancient Maya cave sites in a systematic fashion. Previously, most cave sites were the focus of salvage operations and limited excavations thus have never provided detailed and regional information about ancient Maya use. The difficult access to sites and tedious working conditions in caves are often credited for this bias. Since its inception the WBRCP has aimed to treat cave sites with the same methodological rigor to which archaeological investigations of surface sites are subjected. Inclusion of cave sites and materials from caves that are outside the immediate research objectives of the project add a wealth of comparative data that can hardly be ignored.

The study of the collection of artifacts retrieved from several caves in the Caves Branch Valley which is stored at Ian Anderson's 'Jungle Adventure Camp' is one such endeavor. None of the artifacts in this collection were assembled during archaeological investigations, nor were the circumstances during which these artifacts were collected governed by archaeological methods. Although the choice of artifacts which were gathered is dependent upon modern aesthetic appreciation, it still represents a sample of important diagnostic specimens. This small but rich assemblage is useful as a preliminary appraisal of the temporal depth of cave usage in this valley. It is also a valuable means by which to assess the types of materials that were deposited in caves by the ancient Maya. Regional differences in the types of artifacts assembled in caves are only beginning to emerge and although a search for differences is insightful, it is becoming apparent that there was a highly codified system of symbolic behavior that was shared by the Maya of the western Belize sub-region. More detailed examinations of these issues will be incorporated in forthcoming research reports and volumes summarizing the investigations of the WBRCP.

The artifacts are presented according to the raw material from which they are made. Only ceramic and lithic specimens are represented in the collection, and consequently they will be described in accordance with these two categories. Each artifact has been labeled sequentially from 1 to 17. This sequence represents the order in which the specimens were examined. For each category an effort was made to present the specimens in a chronological sequence although minor discrepancies exist.

CERAMIC SPECIMENS:

Specimen 1: This vessel is represented by 11 sherds (Fig.1:1). The exterior is decorated with geometric designs, particularly rectangular-shaped spirals. Similar motifs are depicted on baskets and

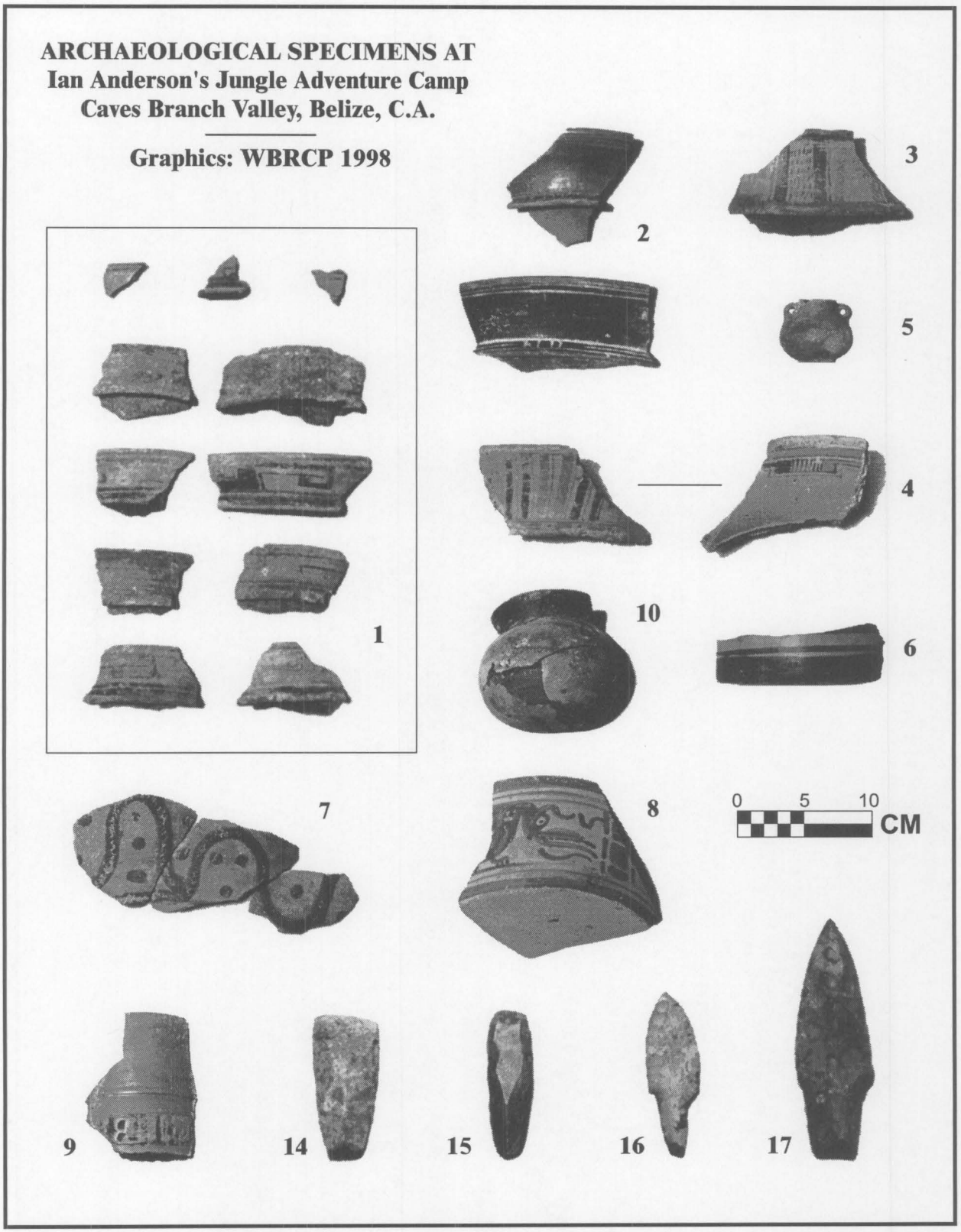

Figure 1: Sample of the specimens forming the collection.

dishes on the lintels of Yaxchilan (cf. I. Graham 1979, 1982; I. Graham & Von Euw 1977). The background of the vessel is painted orange. The rectangular spirals are painted black. Black and red horizontal lines are painted along the exterior of the rim. The interior has two parallel black painted lines along the edge of the rim.

It is of the Dos Arroyos Orange Polychrome type (Gifford 1976: 173-174). It dates to the Early Classic period (AD 300 - AD 600) and is diagnostic of the Hermitage ceramic complex.

Specimen 2: This vessel is represented by 2 sherds (Fig.1:2, & Fig. 2). Rim diameter is 30.3 cm. The interior is entirely slipped black. The exterior is slipped from the rim to edge of the upper surface of the basal flange. The exterior has 3 parallel and horizontal incised lines below the rim, as well as on the upper surface of the basal flange. Two groupings of vertical lines (one grouping is composed of 4 lines, the other of 5) interrupt the horizontal lines on the basal flange. Other specimens are illustrated in Gifford (1976: Fig. 88a, e, f, p. 165) which have similar exterior decorations. The most salient difference between the Barton Ramie examples and the one from the present collection is that the latter lacks the internal incising that is present on all the Barton Ramie specimens of this type. A representative and complete Lucha Incised bowl is also on display in the Museum of Natural History in New York.

It is of the Lucha Incised type (Gifford 1976: 164, 164). It dates to the Early Classic period (AD 300 - AD 600), and diagnostic of the Hermitage ceramic complex.

Specimen 3: This vessel is represented by 1 sherd (Fig.1:3). The specimen has a sharply down-pointing flange, and everted rim which is 1.6 cm long. The exterior has been painted in polychrome on a light orange background, alternating in pairs of thick black and red vertical lines. These thick lines enclose a field of short vertical dashes of the same color as the pair of thick lines enclosing them. Black and red horizontal lines are painted along the edge of the rim and basal flange. The section below the basal flange on the exterior is unslipped, but fire-clouded to a dark grey color. The interior is partially slipped to a light orange. Two horizontal dark orange bands define the upper edge of the rim on the interior.

The sherd is related to Dos Arroyos Polychrome but is most likely an Actuncan Orange Polychrome (Gifford 1976: 170-172). It dates to the Early Classic (AD 300 - AD 600) Hermitage ceramic complex.

Specimen 4: This vessel is represented by 1 sherd (Fig.1:4). The exterior and interior are painted polychrome. The exterior is painted with paired red and black vertical banding, similar to Specimen 3. The field of small vertical dashes is, however, replaced by a thin vertical black line. The basal flange is decorated with red bands and black dots. The interior is slipped to a light orange, and has a red and black geometrical design painted along the red horizontal line defining the edge of the rim. It is probably of the Actuncan Orange Polychrome type (Gifford 1976: 170-172) and Early Classic in date.

Specimen 5: This is a miniature olla (jar) with handles (Fig.1:5). It is approximately 4.5 cm high and 5 cm at its widest point. It has a 2.9 cm rim diameter. The exterior seems unslipped, but has multiple fire-cloudings ranging from black to light tan in color.

It may be related to the Sotero Red-Brown type (Gifford 1976:315), and thus can be assigned to the Tiger Run ceramic complex (AD600-AD700).

Specimen 6: This vessel is represented by the base of a bichrome cylindrical vase (Fig.1:6). The exterior is slipped to a deep orange and has black horizontal banding painted on it. The interior is unslipped. The sherd represents a fragment of a Late Classic (AD 600 -AD 900) cylindrical vase of undetermined type.

Specimen 7: This vessel is represented by 3 fragments (Fig.1:7) of an olla (jar). The interior and exterior surfaces are unslipped but undulating lines enclosing fields of large dots were painted on the exterior. Post-firing, cross-hatched incising was added on top of the painted designs. A similar specimen was discovered in looter's backdirt on Ledge 1 inside Actun Yaxteel Ahau, in the Roaring Creek Valley. This second specimen is also represented by fragments of an olla (jar).

The sherds may be of the Sucotz Incised/Striated type (Gifford 1976: 186-189).

Specimen 8: This vessel is represented by one sherd (Fig. 1:8, Fig. 3). The exterior is painted red and orange-on-cream, in a design representing a water bird. The interior is slipped to a light orange and has red horizontal banding painted along the rim. Rim diameter is 21.3 cm. Similar specimens have been discovered inside Actun Chapat, Chechem Ha Cave, and Pottery Hill Cave, but in the latter instances the birds were painted on the interior base and/or on the interior walls of the vessel. The smaller size of Specimen 8 may account for the fact that the bird was painted on the exterior.

The bowl is clearly of the Cabrito Cream-Polychrome type. This type dates to the Terminal Classic (AD 700 - AD 900) and is associated with elite status. One common figural theme represented on vessels of this type is the "Holmul Dancer Theme" (Reents-Budet 1994: 179-186; 1985; 1991). Cormorants are also commonly represented. Perhaps a good analog for Specimen 8 is MS 0606 (see Reents-Budet 1994: Fig. 5.22).

Specimen 9: This molded-carved vessel is represented by one sherd (Fig. 1:9, Fig. 4). This sherd is a rim sherd of a molded-carved barrel-shaped vase. The rim diameter is 13.8 cm. The exterior has a deep orange slip. The interior is unslipped and has a tan base color. The paste is light orange to tan color. Small calcite inclusions are less than 0.5 mm in diameter. A portion of hieroglyphic text is preserved along the lower edge of the sherd. Two full glyphs are represented as well as parts of a third. The glyphs represent the end of the Primary Standard Sequence and the beginning of the Nominal Section. The PSS typically introduces glyphic texts that were painted on Classic period vessels, while the nominal section records the name of the patron or owner of a vessel. This type of ceramic vessel dates between AD 800 and AD 900.

Almost identical specimens have been found in Footprint Cave and Chanona Cave (E. Graham et. al 1980) as well as in Actun Tunichil Muknal (Helmke et. al 1998). These vessels are of the Belize Valley Molded-Carved type (Helmke et al. 1998), part of the Spanish Lookout ceramic complex. These vessels were widespread in the greater Belize Valley during the Terminal Classic (ca. AD 850 - AD 900), and other specimens have been found as far distant as Altun Ha (Pendergast 1990; Helmke n.d.).

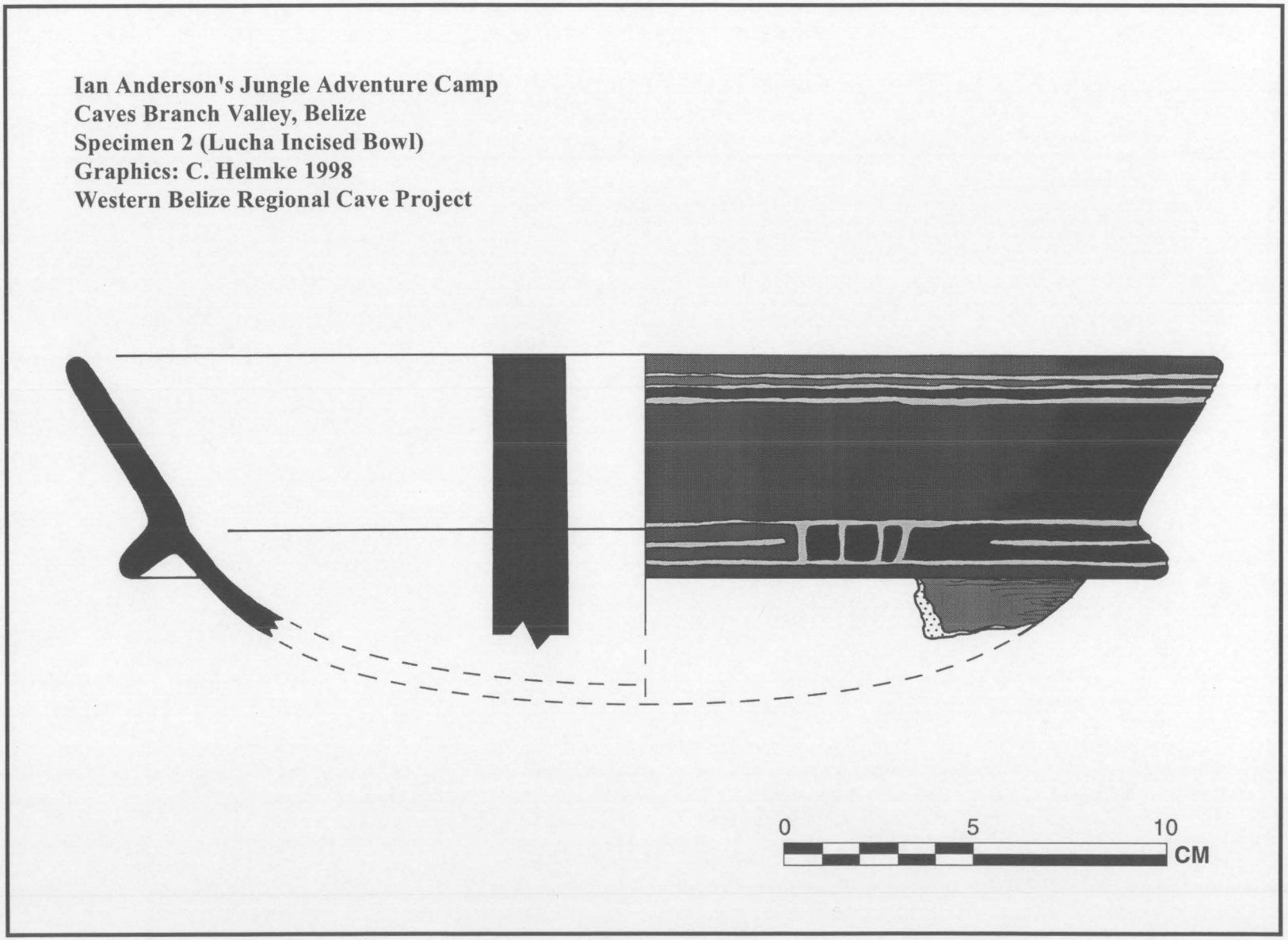

Figure 2: Drawing of Specimen 2.

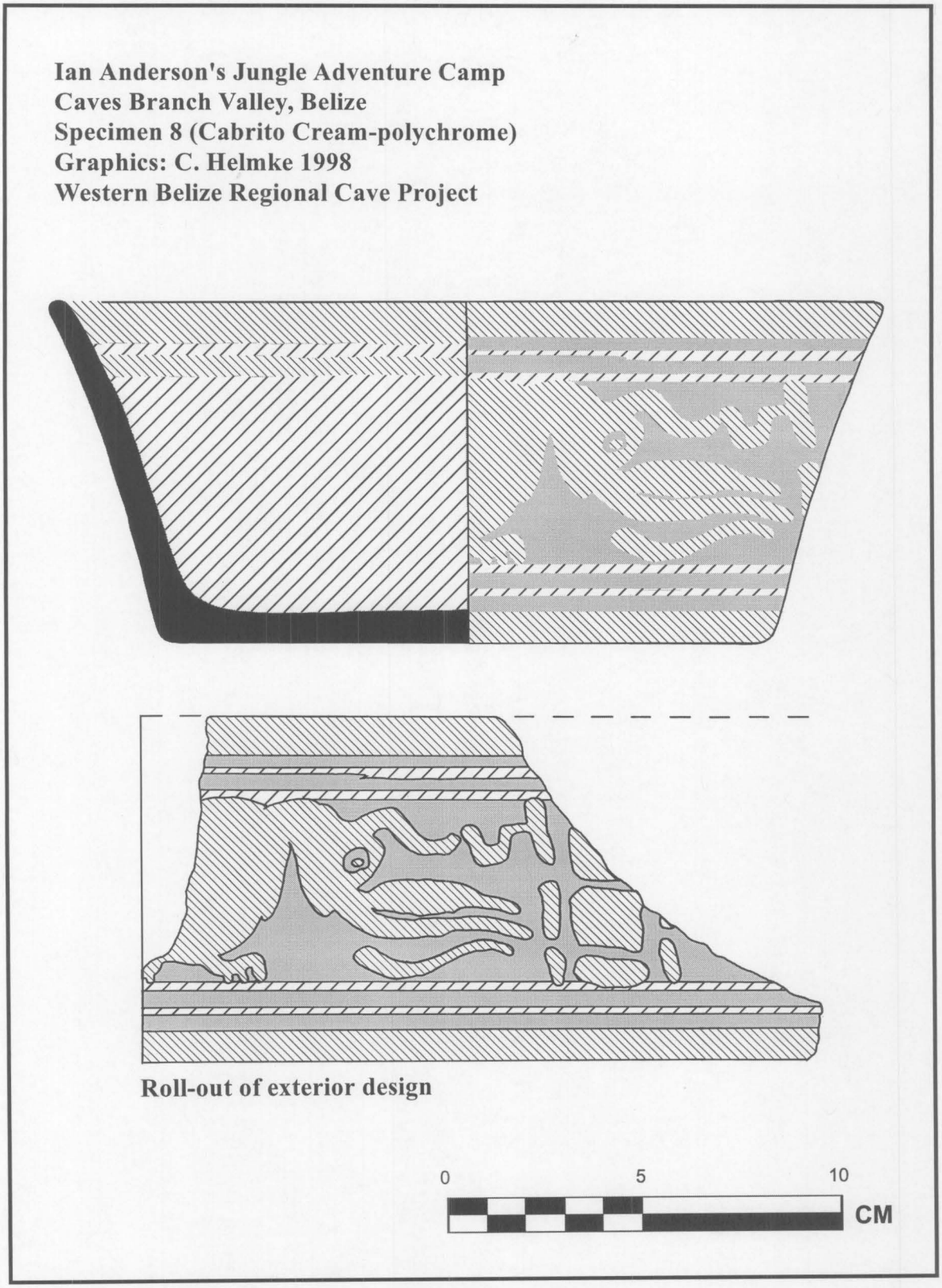

Figure 3: Drawing of Specimen 8.

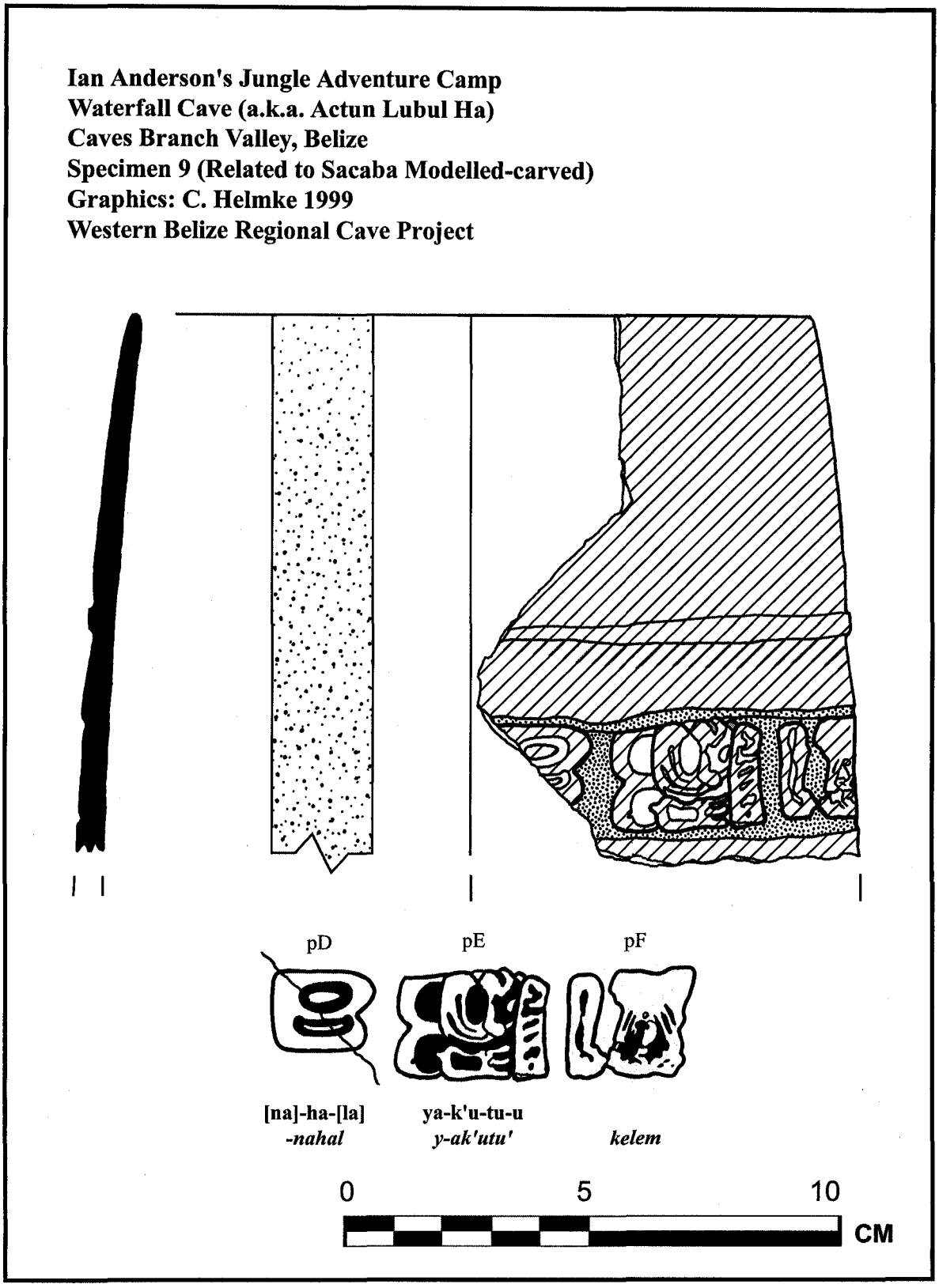

Figure 4: Drawing of Specimen 9.

Specimen 10: This is a miniature slipped and painted olla (jar) represented by three sherds (Fig. 1:5). Approximately half of the olla is preserved. The interior and exterior are slipped red-orange, but the exterior has the addition of possible black painted glyphic elements. Due to a coating of calcite on the exterior, the surface treatment cannot be clearly discerned. A portion of the calcite was removed and the black horizontal banding which encloses the possible glyphic elements was clearly visible.

Dating of this specimen is problematic, as ollas are rarely slipped (except for Roaring Creek Red specimens). The addition of painted elements on the exterior is a characteristic of Late Classic (AD 600 - AD 900) vases and has not yet been reported for ollas. It is possible therefore that the olla may date to the Late Classic. Its diminutive size, slip, and the painted elements make this a unique specimen in the collection.

Specimen 11: This sherd is a fragment of a hollow oven foot. These tripod feet are commonly found on Late Classic (AD 600 - AD 900) vessels, such as dishes and vases. Similar specimens frequently contain ceramic rattles in the hollow supports.

Specimen 12: This large bichrome slipped body sherd may represent a fragment of either a bowl or an olla (jar). It may be of the San Ignacio Red-on-Brown type (Gifford 1976: 156). This type dates to the Hermitage ceramic complex, which spans the Early Classic from AD 300 to AD 600.

Specimen 13: This fragment of a hollow figurine may represent the head of a bat. Similar figurines have been found in Late Classic (AD 600 - AD 900) burials on Jaina island in Yucatan and at Lubaantun in southern Belize (Jaime Awe, personal communication). This figurine may represent a fragment of an ocarina.

LITHIC (CHIPPED STONE) SPECIMENS:

Specimen 14: This tranchet-bit biface (adze) (Fig. 1:14) was probably used as a hoe for tilling fields or for cutting wood. An analysis of the use-wear on similar specimens has suggested these functions for such tools (Aldenderfer, Kimball, & Sievert 1989). Since this lithic was found in a cave, it may never have been used as a functional tool, but may have been deposited during ceremonies related to agricultural fertility. Tranchet-bit adzes are found from the Middle Preclassic (Potter 1991) to the Early Postclassic (Hester & Shafer 1991). Lack of contextual data inhibits the assignment of a specific date for this specimen.

Specimen 15: A tertiary-retouched chert blade (Fig. 1:15), most likely used for cutting. As with Specimen 14, no date can be suggested for this blade. Slight "bands" are visible in the chert from which this tool was made. This characteristic may be indicative of the source of chert from which it was extracted.

Specimen 16: This stemmed projectile point (Fig. 1:16) has the shape of a stemmed macro blade but is a miniature example with convex edges. It is made from a material that has characteristics of chalcedony. The size of the lithic suggests that it was appropriate for hafting. When compared to typical arrowheads, it is apparent that this lithic is larger than arrowheads and also has a different shape (see

Hester & Shafer 1991; Hester, Shafer, Berry 1991: Fig. 11). It may thus have been hafted as a spear point. It is probably Terminal Classic in date.

Specimen 17: A stemmed macro blade (Fig. 1:17). This is the largest of the four lithics in the collection. The stem of the point is designed for hafting. The chert appears to be of local origin. It probably dates to the Late Classic (AD 600 - AD 900), although similar examples have been found in Late Preclassic (ca. 100 BC) contexts at Colha in northern Belize (Potter 1991).

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A REPORT ON THE PRELIMINARY EXPLORATION OF BARTON CREEK CAVE, CAYO, BELIZE

Sherry A. Gibbs
Trent University

Mike J. Mirro
Radford University

Jaime J. Awe
University of New Hampshire

INTRODUCTION

On July 12th, 1998 a team from the Western Belize Regional Cave Project began preliminary investigations of Barton Creek Cave. The explorations were initiated following a request by the Department of Archaeology to assist them with an assessment of the state of preservation of the site. The primary goals of the exploration were a) to produce an inventory of the cultural remains in the cave, and b), to assess the effects of increasing tourism to the site. This report provides a brief description of the explorations conducted by the WBRCP in 1998 and presents recommendations for future investigations.

SETTING

Barton Creek Cave is located in the western Cayo District, a few kilometers south of the Mennonite community of Valley of Peace. The main entrance to the cave is oriented roughly north northeast and is approximately 30 meters in height and 20 meters wide. The stream which flows through the cave is a tributary of Barton Creek which is approximately 150 meters from the cave entrance. The depth of the cave stream and the relatively vertical walls along its banks provide no easy passage into the cave. Access therefore requires the use of canoes or other floating devices. The main cave passage has flowstone ledges along both sides as well as natural bridges which span from one side of the stream to the other. The ceiling reaches a maximum height of 80 meters in some areas while in other areas low hanging formations constrict the passage to less than 1 meter above the water level. These areas would be inaccessible when the cave floods. Approximately 1.5 kilometers into the cave, breakdown prevents passage by canoe. This area exhibits some of the most significant recent damage to the cave. In one area it appears that stalactite formations have been broken away to allow easier passage into the cave. In addition, canoes have been pulled up and onto the breakdown surface, gouging the rock and leaving traces of paint.

While no formal reports have been published for Barton Creek Cave, we believe that the site was visited in the 1970s by Peace Corps volunteers (Barbara MacLeod and Carol J. Rushin) who were working for the DOA at that time. Today several tour operators from the Cayo district regularly take

visitors to the cave. The apparent displacement of cultural remains for aesthetic reasons, coupled with evidence of looting, leads us to believe that many of the artifacts in the cave are no longer in situ. It is also likely that several artifacts may have been removed from the site, but lacking formal reports by previous explorers it is difficult to confirm this possibility. Despite these problems, we noted three areas of the cave with evidence of ancient Maya activity. A description of these loci is provided below.

AREA ONE

Area One is located at the entrance of the cave and is approximately 30 meters long. The area consists of a series of small ledges and platforms high above the river on the eastern side of the main cave passage. There are travertine pools on the ledges and platforms which are filled with bat guano.

There is evidence of extensive looting and the displacement of cultural remains in Area 1. Few ceramic remains were noted on the surface, but there is pottery placed on several rocks. We believe that the pottery was recently and intentionally placed on the rocks, either to protect them or to make them more visible to tourists. Some of the travertine pools also appear to have been looted while others appear to be undisturbed.

AREA TWO

Area Two is approximately 200 meters within the cave. It consists of two ledges, one on the eastern and another on the western banks of the stream, that are joined by a natural flowstone bridge. The eastern ledge contains human skeletal remains. Preliminary observation indicates that there are a minimum of three individuals based on the three crania present. Two of the crania are positioned so that they are visible from the river. Since this is not consistent with patterns of ancient skeletal deposition observed in other caves, we suspect that these crania have been recently repositioned for the benefit of tourists. Two small complete ollas and the remains of a large vessel were also observed on this ledge. Since lack of climbing equipment prevented us from making a thorough exploration of this ledge, most of our observations were made from the western ledge (see map).

On the western ledge there is evidence of a prehistoric hearth. This feature consists of a ring of cobbles and associated charcoal. A number of potsherds and a metate fragment lie in close proximity to the hearth. The assemblage of potsherds from this ledge included one polychrome sherd with a band of possible glyphic text (see sketch). We were informed that this sherd has been removed from its original context and hidden within the cave to prevent it from being looted.

AREA THREE

Area 3 consists of a flowstone bridge approximately 300 meters within the cave. The bridge surface is comprised of a series of gour pools (the northern portion of the bridge consists of several small pools, while the southern portion is one large pool). Area Three is the deepest location within Barton Creek Cave where evidence of Maya activity has presently been found.

The bridge in Area 3 contains the remains of at least 9 individuals. This estimate is based on

the number of crania present. Preliminary observations indicate that the skeletal assemblage consists of three possible adult males, two possible adult females, one adult of indeterminate sex, and three probable children. Sex determination was based upon observation of the mastoid process, the supraorbital margins, and the shape of the orbits. Teeth were intact on some of the individuals, and absent on others. It is presently unclear whether this tooth loss was the result of prehistoric activity or whether it reflects recent looting activity. Confirmation of either possibility will have to await future analysis of these human remains.

The skeletal remains in Area 3 are mostly in secondary (or disturbed) context. The crania have been repositioned in three clusters. One cluster, located on the southern edge of a rim stone dam, contains two crania, several long bones, two innominate bones, and other fragments. This cluster consists of at least one male and one female. This sex identification is based on the presence of one male and one female cranium and one male and one female innominate.

The second cluster includes the remains of three individuals tentatively identified as children. Only the viscera crania remain and are displayed on the flowstone in the middle of the bridge. Other crania were found within this cluster as well as several long bones.

The third cluster consists of four crania located in a small crevice in the northern section of the bridge. Two of these crania were determined to be male, one female, and one indeterminate. The cranium of indeterminate sex lacked facial bone and mastoid processes. Other bones were present in nearby pools.

Apart from the human remains, the ledge is almost devoid of cultural material with the exception of a few olla sherds located in a crevice in the east wall. Despite the absence of looters' pits, it is evident that extensive looting and relocation of cultural material has occurred. Primary context of the skeletal material could not be determined during this preliminary investigation.

CONCLUSION

Due to time and logistical constraints our investigation of Barton Creek Cave did not continue beyond the breakdown south of Area 3. While it appears that the majority of the cultural material within Barton Creek Cave has been removed from primary context, valuable information may still be gained from a scientific study of this site. Indeed, further investigation is not only warranted but strongly recommended.

PRELIMINARY REPORT ON THE EXCAVATIONS AT STRUCTURE 102, BAKING POT, BELIZE

Jennifer Piehl
Tulane University

INTRODUCTION

The 1998 field season at Baking Pot included the excavation of Structure 102, a residential structure in the southern periphery of the site (Figure 1). The excavation of this structure was undertaken as part of the author's dissertation research on residential structures at Baking Pot. Briefly, the goal of this research is to combine archaeological and osteological data to characterize the interaction between different groups within the Baking Pot community. Housemounds of varying size and location with respect to the monumental architecture are being excavated in an attempt to recover data from occupants representing a range of socio-economic status within the community. Structure 102 was chosen because of its moderate size in relation to other housemounds at the site, its location some distance from the monumental core, and the fact that it appeared to be an individual mound rather than part of a more formal residential complex. These conditions are in contrast to Structure 193, a large residential structure atop a platform mound just outside Plaza II of Group I, excavated during the 1997 field season.

Structure 102 is located in an area with a dense concentration of individual housemounds and occasional plazuela groups spread across the floodplain south of the Belize River. Settlement at Baking Pot is characterized by greater density nearer the Belize River, rather than concentric zones of decreasing population density emanating from the core (Conlon 1997:5). The structure lies approximately 530m southeast of Group II and 560m south of the river. It is located between the two plazuela groups of Gallo, approximately 175m to the north and Atalaya, 120m to the south. The area is currently being used by the Belize government's Central Farm as pasture, and so has undergone clearing and moderate plowing activity. Structure 102 is a solitary mound, 5.5m east-west and 12.5m north-south, facing west (Figure 2). Five architectural phases were excavated, the most recent of which had been disturbed and partially obliterated by plowing and flooding activity. Architectural and artifactual evidence recovered during excavation confirm that the primary use of all phases of this structure was residential. This report will describe each architectural phase, and present a preliminary description of associated artifacts and human remains.

ARCHITECTURE

Five phases of Structure 102 were excavated or tested during the 1998 field season. Construction style was a mixture of well-faced limestone blocks, roughly-faced limestone blocks and river cobble, often all appearing within the same construction phase. Each phase of the structure also included plastered floor surfaces, some very badly deteriorated. Construction of these also varied; most

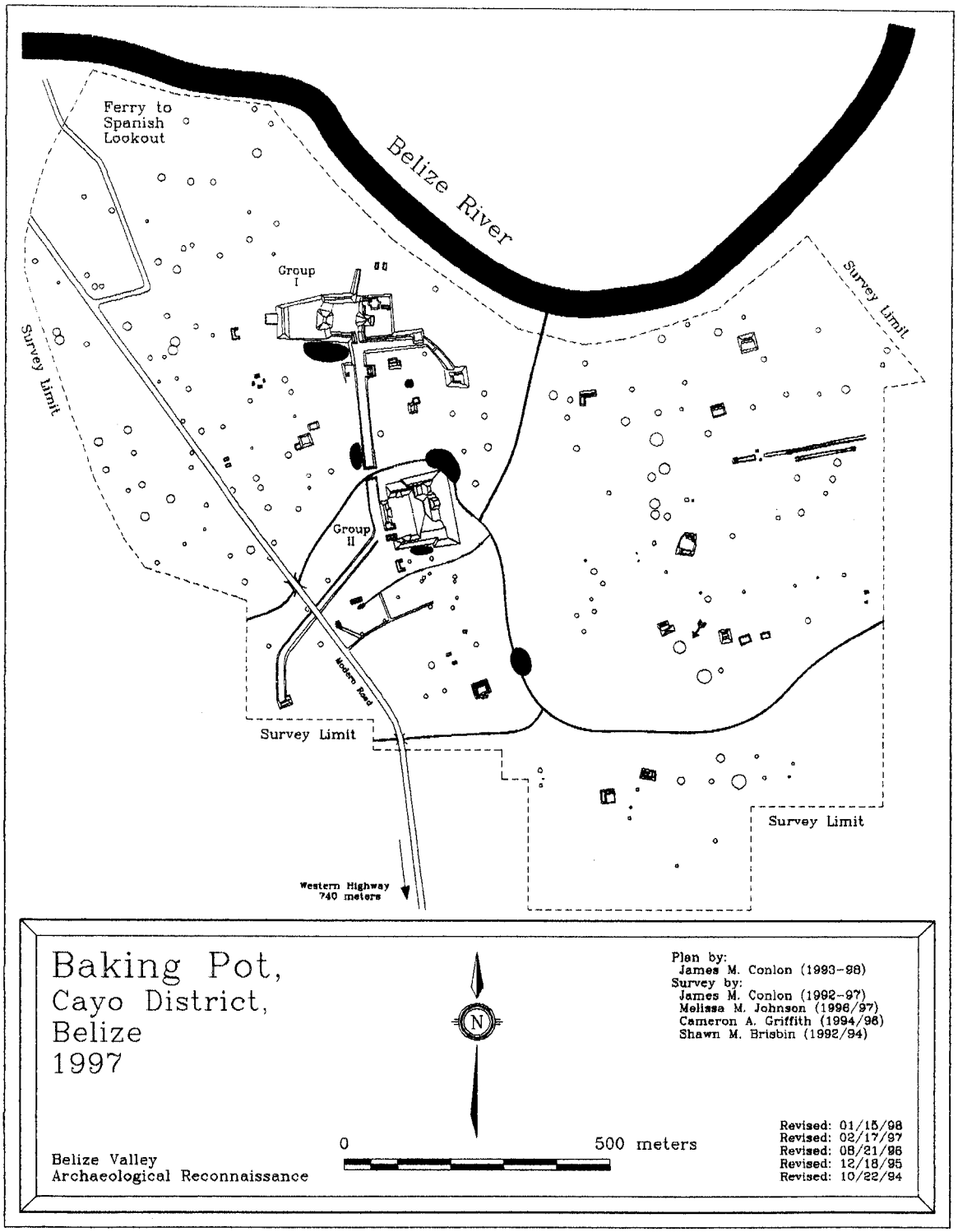


Figure 1: Location of Structure 102 at Baking Pot.

of the floors had a limestone ballast underpinning, but in some areas the plaster lay directly atop construction fill. Overall, the construction style suggests that the residents may have had uneven or partial access to limestone building resources, or chose to utilize the more immediately available river cobble. Each architectural phase will be described below.

Phase A

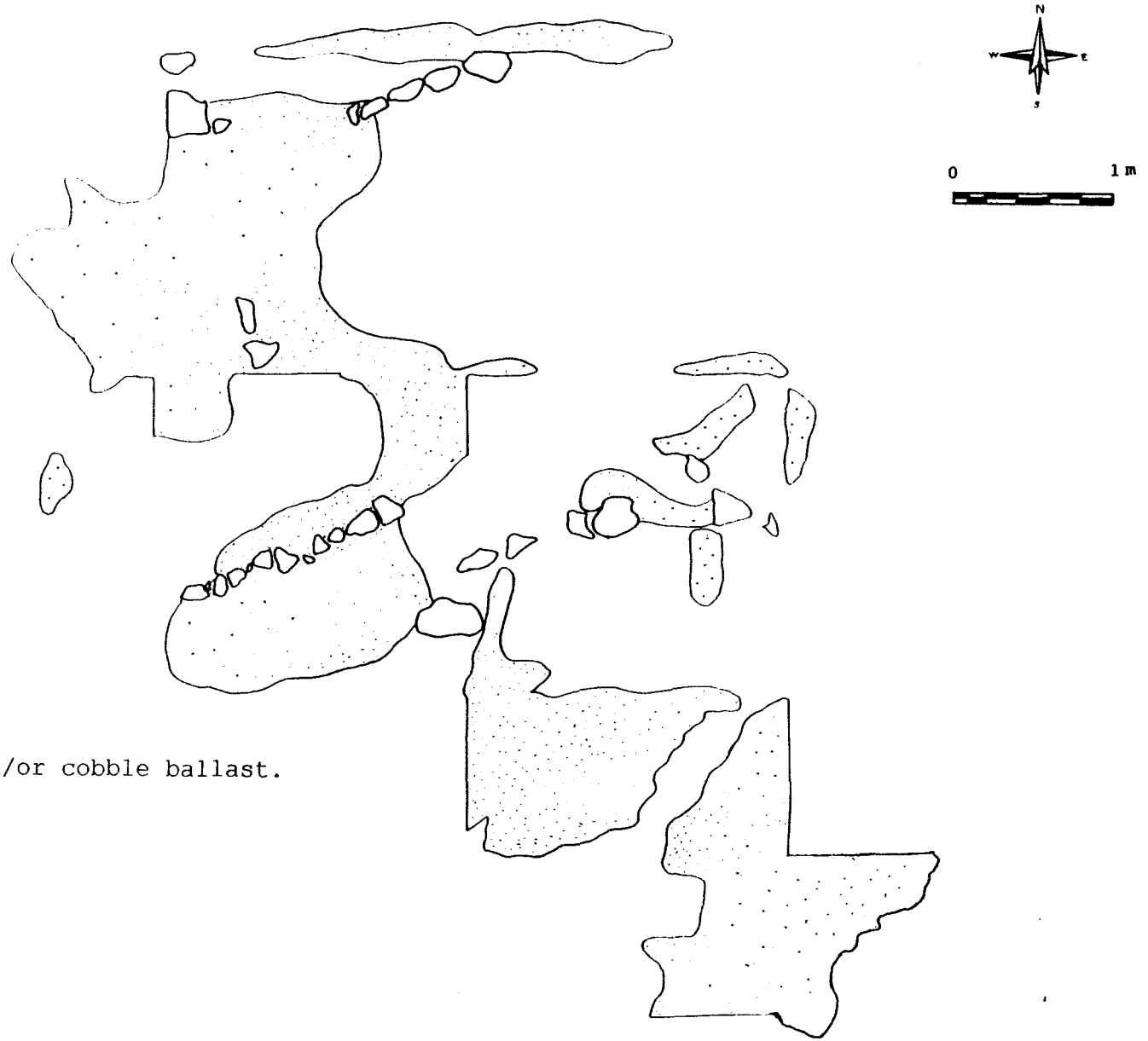
The terminal phase of construction at Structure 102 (Figure 3) was in poor condition, due in part to plowing activity, and frequent flooding by the Belize River. Surviving walls were discovered as single courses of sunbleached limestone blocks maintaining similar alignments and elevations. Portions of a northern, eastern, and western wall were uncovered. Construction debris, including sunbleached limestone blocks, accompanied by a dense deposit of household refuse, lay to the west of the western wall fragment. This debris may mark the western extent of the Phase A platform. A poorly preserved plaster floor with cobble ballast underpinning was associated with these walls. The floor, designated Floor 1, survived in patches of weathered and fragmentary plaster or, more frequently, a layer of river cobble ballast only. The topography of the mound and the pattern of preserved floor indicate that water flow was most likely the primary contributor to the deterioration of Floor 1.

Phase B

Phase B (Figure 4) consisted primarily of walls 3 and 4, which formed the northwestern and northeastern corners of an outset that would have abutted the center of the eastern wall of this structure. These walls were originally constructed during the previous Phase C, but a plaster floor and a distinct change in construction style in these two walls mark Phase B as a distinct construction episode. Phase B construction utilized less well-faced, smaller limestone blocks on walls 3 and 4 than Phase C materials at the bottom of these walls. A small wall fragment consisting of two courses of stones, faced to the south, formed the southwestern corner of the outset. This wall was constructed only in Phase B, rather than being built on an existing Phase C wall as Walls 3 and 4 were. An additional alignment of 3 limestone blocks, wall 5, formed a fragment of the eastern wall and southeastern corner of the Phase B structure. These stones rested on traces of Floor 2 plaster, which was badly deteriorated in this area of the mound. Displacement due to the slope of the mound and plowing has caused the extreme slumping of the terminal phase floor ballast at this southeastern corner, and as a result the wall 5 stones, though clearly below the terminal floor and resting on the penultimate floor, were at one time exposed on the surface, and are sunbleached. Floor 2 forms the base of Phase B, and was so poorly preserved that it was not detected in most areas of the mound. Therefore, distinct dimensions of the Phase B platform cannot be given. Floor 2 was best preserved in the area between Walls 4 and 5, but traces were also detected in the southwestern quadrant of the mound . The plaster of Floor 2, where best preserved abutting the north face of Wall 4, was 7-8cm thick, overlying a 6cm-thick, densely packed layer of river cobble ballast. A large quantity of *Pachyichilus indiorum* shells was incorporated into the plaster of this floor.

Phase C

Architectural remains of Phase C (Figure 5) were slightly more extensive than those of Phase B. The basal 1 – 3 courses of Walls 3 and 4 (dependent upon height of stone) form the same outset corner as in Phase B. A small test excavation below Floor 3 confirmed that Walls 3 and 4 were first constructed in Phase C. Additionally, a 1.56m long fragment of the northern wall, constructed of river cobble, was preserved. The combination of cut limestone blocks at the eastern side of the structure and



= plaster floor and/or cobble ballast.

Figure 3: Plan of Phase A architectural remains.

Figure 4: Plan of Phase B architectural remains.

Figure 5: Plan of Phase C architectural remains.

river cobbles near the western side suggests that more attention was paid to the front of the residence and the appearance of the outset abutting the eastern wall than to the sides of the residence toward the rear. Limited access to limestone may have been one cause for this pattern of construction material use.

Alignments of river cobbles and unfaced or roughly faced small limestone blocks were uncovered lying atop Floor 3, the Phase C floor. North-south and east-west alignments abutted each other in a pattern that was obviously intentional, though its function remains undetermined. The position of these alignments in relation to Floor 3 rules out the possibility that these could be retaining walls for a platform. It is possible that the stones may be associated with a perishable superstructure, whether they are parts of a foundation or retaining stones for poles. Further research of comparative material is necessary before any further determinations can be made.

Floor 3 was in a better state of preservation than Floors 1 or 2. It extends to the north and south of Wall 8, and abuts the western face of wall 3. The Floor was 8cm thick, and also included a large number of *Pachychilus indiorum* shells in its construction.

Phases D and E

Earlier phases of Structure 102 were explored through the excavation of a 1 x 2.5m unit placed on the Floor 3 surface where it would not interfere with Phase C architectural features (Figure 2). Phase D is represented by three fragments of cobble ballast directly below the level of Floor 3 (Figure 6). The first was uncovered below Floor 3 just west of and at a level below Wall 3. This floor terminates with two retaining stones, faced to the south, which appear to be a fragment of an earlier platform. Exploration to the west of these stones revealed no further evidence of this platform wall. The other two fragments, cobble ballast forming the western edge of the same platform, extend west and north of the preserved extent of Floor 3 in the northwestern corner of the structure. Roughly faced limestone blocks retain this ballast on the western side. The Phase D plaster rests atop limestone ballast and 15cm of alluvial fill soil. Ceramic, lithic, and faunal artifacts were present in small quantities in this phase, including a Balanza Black: Balanza Variety (Gifford 1976) vessel foot that suggests an Early Classic date for Phase D.

Evidence of Phase E consisted only of a 25cm x 15cm patch of plaster in the center of the unit. Soil below this plaster had a higher clay content than typical construction fill soil at Baking Pot and in other phases of Structure 102, which indicates that Phase E was probably constructed with a low or no platform above the alluvial plain. A few artifacts persist in Phase E levels, but have probably been washed in by flooding rather that included in construction fill. This phase terminates with the appearance of river sand.

CERAMICS

Ceramic material associated with Structure 102 was found in humus, construction fill, and in artifact clusters that appear to be middens, termination and dedication deposits. Preliminary analysis of the ceramic material indicates that Phases A, B, and C date to the Late-Terminal Classic (Gifford 1976:225-310). The majority of ceramic remains were of household storage, cooking and serving

vessels, including types such as Cayo and Alexander's Unslipped and Belize Red (Gifford 1976). A fragment of a Pedregal censor was part of an assemblage below Floor 2.

MISCELLANEOUS CERAMIC ARTIFACTS

Four biconically drilled potsherds were recovered from deposits associated with Structure 102. Two of these were recovered from mixed humus and construction fill context just above the terminal floor. This mixed context was created by disarticulation and slumping of the floor. One red-slipped drilled sherd (SF103-50), was found on top of the mound. The sherd consists of approximately one-third of a circle, and is drilled off-center. Another drilled sherd (SF43-18) associated with Phase A was found in mixed humus and construction fill context just north of wall 2.

Two biconically drilled potsherds, one associated with Phase B and one associated with Phase C, belong to that class of artifacts described as possible spindle whorls (Gillis 1982:233), pendants (Gifford 1965), or gaming pieces (Drucker 1943:87). Both were found in construction fill, that of Phase B (SF172-61) below Floor 2, and that of Phase C (SF182-78) in a small test unit below Floor 3 at the junction of Walls 3 and 4.

LITHICS

Excavations at Structure 102 recovered flaked chert, obsidian, and groundstone artifacts. The majority of the lithic material from all phases of construction is formed from readily accessible river cobbles, in a wide range of colors and qualities. Preliminary analysis of the lithic material has not yet been completed, but it is clear from the presence of primary, secondary, and tertiary flakes, shatter, and cores that tool manufacture was taking place at the household level. Opportunistically produced flakes greatly outnumber formal tools fashioned on chert flakes, a pattern in accordance with the proximity of the river and household level production at Baking Pot.

Utilitarian chert bifaces were found in humus, fill, and special deposit contexts in Phases A, B, and C. Twenty (20) bifaces were found, two of which are complete. The size of the bifaces, likely used for agricultural purposes, is consistent with those from Barton Ramie (Willey et al. 1965:423). 8 bifaces were found in humus, and 5 in construction fill of Phase A. One biface was included as a ballast stone in Floor 1, and 1 in Floor 2. 4 bifaces were included as special deposits associated with Phase B, and 1 was found in a possible Phase C midden.

Obsidian Artifacts

Most of the obsidian artifacts found in the refuse and fill of Structure 102 are prismatic blade fragments. A 123 blade fragments were found, as well as 6 secondary flakes, 1 chunk, and 1 core fragment. All of the obsidian ranged in color from medium gray to black. Table 1 shows that the majority of obsidian artifacts were recovered from collapse debris and construction fill contexts associated with Phase A. This may indicate increased access to obsidian by the residents of Structure 102 in the terminal phase of occupation. The quantity of obsidian artifacts at Structure 102 is similar to that recovered from Structure 193, confirming that access to obsidian prismatic blades was not restricted to individuals of high socioeconomic status. The difference in the two assemblages is the presence of 2 biface fragments at Structure 193, which may be due to a more restricted access for these items and/or a temporal difference.

Table 1: Frequency of Obsidian Artifacts by Temporal Phase

	Blade Fragment	Flake	Chunk	Core Fragment
Phase A	94	4	1	1
Phase B	32	1		
Phase C	1			
Backdirt	2			

GROUNDSTONE ARTIFACTS

Most of the groundstone artifacts recovered from Structure 102 are granite mano and metate fragments. 11 mano fragments and 10 metate fragments were found, the manos occurring in phases A and B and the metates in Phases A through D. Most of these artifacts were found in humus and construction fill context. Three mano fragments were found lying on the terminal floor, amid collapse debris and refuse. One mano fragment (SF62-26) and a complete limestone spindle whorl (SF65-26) formed part of an artifact cluster on Floor 3 in the central area of the structure, and a metate fragment (SF194-80) was included in an artifact cluster on the southern portion of Floor 3. The only groundstone artifact (SF198-84) associated with Phase C is a metate recovered from a large artifact cluster that may be a midden associated with Floor 3, to be discussed below.

Additional groundstone artifacts include a large groundstone pestle (SF86-86), and a fragment of an ovoid barkbeater (SF107-36), both located in Phase A construction fill. The barkbeater is similar to the form reported at Barton Ramie (Willey et al. 1965: 471). A miniature celt (SF171-15) fashioned from green river stone was found amid occupational debris in the western portion of the Phase A platform. Wear is apparent on the blade, but there is no other wear or evidence of hafting. A miniature celt of very similar dimensions was found at Barton Ramie (Willey et al. 1965:472), and belongs to the Spanish Lookout phase at that site. This date is consistent with the context of the celt from Structure 102.

Two fragments of greenstone ornaments (SF95-36, SF128-58) were recovered from Structure 102 excavations. The first was located in construction fill of Phase A near the northwestern extent of the platform, and the second lay in Phase B construction fill near the center of the platform. The location of these fragments in construction fill makes it impossible to determine whether they were possessions of the Structure 102 occupants or not. A polished limestone bead (SF117-15)with an incised monkey face was discovered on Floor 3 in the western portion of the platform amid other household refuse. This location makes it very likely that the bead belonged to the residents of Structure 102.

FAUNAL AND SHELL REMAINS

Shell remains discovered during the excavation of Structure 102 were of predominantly edible freshwater species easily obtainable in the immediate region. *Pachychilus indiorum* and *Pomacea*

flagellata arata are the most numerous remains in all phases (Table 2). The proximity of the Belize River and a bajo to the south of Structure 102 likely allowed for harvest of abundant amounts of these two species throughout the Classic period. In addition to evidence of the use of the *Pachichilus* species as food at Structure 102, the plaster of floors 2, 3, and 4 incorporated large numbers of these shells. The large number of *Pomacea flagellata arata* shells in Phase B is in part due to special deposit Lot 67, a cache of potsherds and over 100 *Pomacea* shells north of Burial 1 in Phase B. This deposit will be discussed in detail below.

Table 2: Frequency of Unworked Shell at Structure 102

	Pachychilus indiorum	Pachychilus glaphyrus	Pomacea Flagellata Arata	Nephronaias ortmanni	Strom-bus	Oliva
Phase A	847	7	51	29	15	5
Phase B	1727	38	267+ 680pcs.	37	11	23
Phase C	44	1	18	1		1
Phase D	54		1			
Phase E	11		1	2		

Several worked shell artifacts were also found at Structure 102. Most of these were associated with Phase A construction, including a near-complete shell pendant (SF177-15), rounded at the top and squared at the bottom, a four-petaled flower bead (SF68-25) fashioned from *Strombus*, a perforated shell disc (SF136-66), and a shell disc (SF85-31), possibly a blank for a pendant, all found in construction fill below Floor 1. A drilled shell pendant (SF207-60) was found in construction fill below floor 2. Further analysis must be completed before the species from which these artifacts were made can be determined. The presence of these artifacts, as well as unworked *Strombus* and *Oliva*, in construction fill, precludes any examination of the relationship of imported marine shell to socioeconomic status at Structure 102, since no primary provenience for the fill soil is known. The presence of such *Strombus* waste fragments in varied contexts at Baking Pot in general suggests that residents of the site had access to the material for ornament production (Piehl 1998:20).

Faunal remains at Structure 102 represent a wide range of typical food species in the Belize Valley. These include small, medium, and large mammals, birds, and turtles. Faunal material was found in construction fill context in association with Phases A, B, and D. Three Phase B special deposits (Lots 26, 67, and 80) include mammal and bird bone. Preliminary analysis of the faunal material has not yet been completed.

SPECIAL DEPOSITS

The category of special deposits include features such as middens, possible caches, burials, and other isolated arrangements of artifacts. Most of the special deposits at Structure 102 were associated with Phase B, a factor associated with poor preservation of Phase A and limited excavations in Phases

C-E. The majority of special deposits of all phases were composed primarily of potsherds laid directly on or immediately beneath floors, a pattern also observed at Structure 193 (Piehl 1998:20).

Phase A

The two special deposits of Phase A were linear assemblages of potsherds distributed in the vicinity of Wall 6, below the terminal floor. These may be interpreted as dedicatory deposits associated with the construction of Phase A. The interpretation of these assemblages as deposition of garbage among construction fill is possible, but I believe it unlikely due to the absence of artifacts other than potsherds and the conformity of the deposits to the alignment of Wall 6.

Lot 27: This cluster of potsherds was distributed linearly east-west, immediately north of wall 6. It rested just below the ballast layer of Floor 1, and extends 1.7m east-west. Sherds are predominantly of the Spanish Lookout phase.

Lot 41: Lot 41 was distributed in the same general pattern as Lot 27, but just above Floor 2. It was a linear assemblage north of Wall 6, consisting of potsherds from a variety of Late Classic storage and serving vessels.

Phase B

Four of the special deposits associated with Phase B were placed directly below the ballast of Floor 2. These deposits, taken together with the large quantity of shell in the plaster of Floor 2,may suggest a dedicatory caching practice was implemented during the construction of Phase B. Further comparison of these deposits with assemblages such as Lot 26, a possible midden associated with this phase, may aid in the determination of function of the deposits.

Lot 26: This artifact cluster lay to the west and south of Wall 8, in construction fill just below the elevation of Floor 2. The cluster consists mostly of potsherds, and is 55cm at its widest diameter. Flaked cores, a chert biface fragment, and a ceramic spindle whorl were also included. Ceramics include Belize Red: Belize Variety , Dolphinhead Red: Dolphinhead Variety (Gifford 1976), and unslipped storage vessels. Floor 2 was not preserved in this area, but the 26cm-deep deposit begins just below the elevation of Floor 2 as extrapolated from other areas. This location and the artifact assemblage suggest that this deposit may be a midden at the edge of the Phase B platform.

Lots 28 and 29: Two distinct small deposits of potsherds were found lying on Floor 3 ballast, just west of the extent of preserved plaster on this floor. Lot 28 consists of portions of only two vessels. The position of the sherds suggests that these may be termination deposits, placed upon Floor 3 just before the Phase B construction fill was deposited.

Lot 37: This deposit of ashware dish and plate sherds lay just below the level of floor 2 in the approximate center of the Phase B platform. *Nephronaias ortmanni*, *Oliva*, and unidentified marine shell accompanied the potsherds. This deposit is possibly a dedication of Phase B, interred just before Floor 2 was completed.

Lot 67: This deposit of potsherds, flaked chert lithics, and over 100 *Pomacea flagellata arata* shells was located under Floor 2, north of Burial 1 and the easternmost extent of Wall 6. Included in the ceramics

are fragments of a Pedregal censor, Platon Punctated-Incised: Platon Variety sherds, and a fragment of an ashware polychrome plate. This assemblage and Burial 1, both located immediately below Floor 2, may have been deposited contemporaneously. The nature of the assemblage is not, however, typical of a mortuary deposit, and does not seem to be directly related to the burial.

Lots 68 and 69: These two deposits were assemblages of potsherds below Floor 2 in the approximate center of the platform. Several varieties of unslipped serving and storage vessels, as well as ashware, are represented. Both assemblages were south of wall 8 and at the same approximate elevation as its upper surviving course.

Phase C

The largest special deposit associated with Phase C is a possible midden lying to the northwest of the small stone alignments upon Floor 3. The positioning of the refuse may indicate that this area was exterior space on the Phase C platform, lending a clue to the function of the small alignments. Lot 80, located below Floor 3, conforms to the pattern of deposition of potsherd assemblages directly below floors at Structure 102.

Lot 57: This is a 14cm-deep deposit of densely layered potsherds in an area with a maximum diameter of 1.15m, lying on Floor 3 northwest of the small stone alignments. 26 pieces of flaked chert, a complete biface (SF124-57), 44 *Pachychilus indiorum*, 1 *Pachichilus glaphyrus*, 1*Nephronaias ortmanni*, and 7 *Pomacea flagellata arata* were interspersed with the potsherds. The depth of the deposit and the mixture of artifacts within it suggest that this is household refuse, though the uncertainty regarding the function of the small stone alignments makes it difficult to determine whether or not this deposit is on the platform outside the superstructure of Phase C.

Lot 80: The potsherds, lithics, and faunal material composing this lot rested around the level of Floor 3, which was not preserved in the area of this deposit, in the southeastern corner of the Phase C platform. The assemblage was 60cm north-south and 104cm east-west, and began 7 cm above the level of the floor and ends 12-13cm below it. Taking into consideration the general slumping and displacement in this area,
the assemblage may be considered to lie just below the surface of Floor 3. The inclusion of a Balanza Black: Balanza Variety (Gifford 1976) slab foot supports the assignment of this deposit to Phase C.

Human Remains

Burial 1: Burial 1 (Figure 7) was the interment of an adult male in construction fill below Floor 2 in the southeastern corner of the platform. The feet of the individual were directly east of but one construction phase below the eastern extent of Wall 6. Floor 2 was not detectable directly above the individual, but was preserved 50cm to the east. The individual was buried in an extended supine position, with the head to the south and face to the west. The right ankle and foot were crossed over the left. The bones were moderately well preserved, with approximately 40% of epiphyses present, though not necessarily articulated. Analysis of the sciatic notches, mastoid processes, and robusticity of the

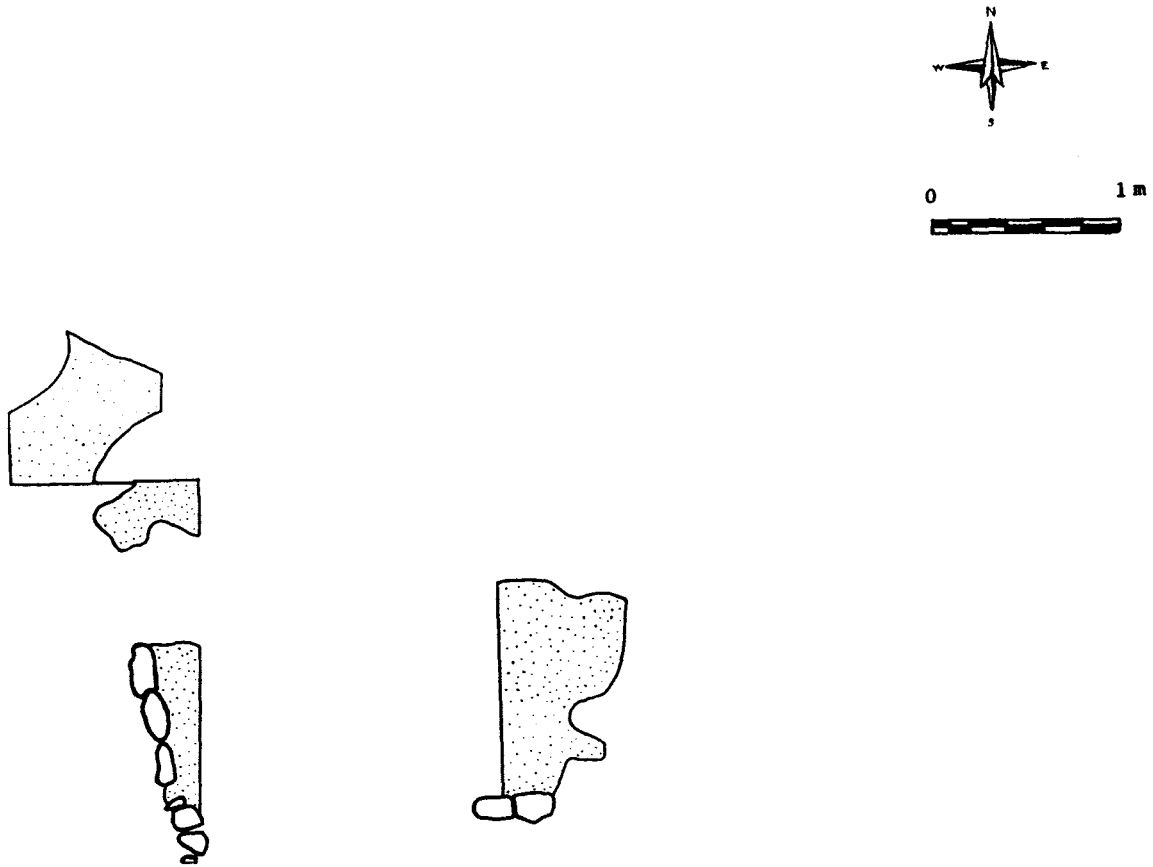


Figure 6: Plan of Phase D architectural remains.

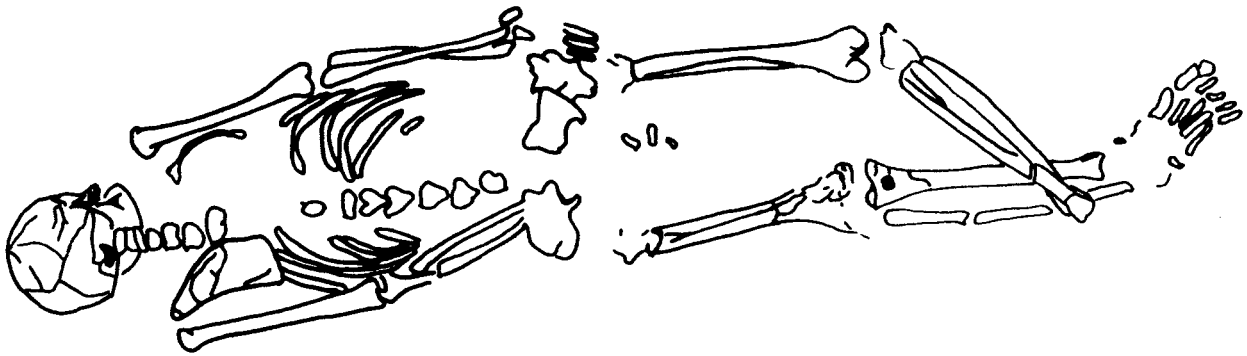


Figure 7: Plan of the human skeletal remains of Burial 1. Original drawing by Christophe Helmke.

mandible, cranium, and long bones shows that the individual is male. Preliminary analysis of dental wear suggests an age of 30-45 years. No grave goods were present. Lot 67 was found at the same elevation and north of the individual, but was not in close enough proximity to conclusively link it to the burial.

Lot 83: This deposit rested immediately below Floor 3 and atop Floor 4 in the southwestern portion of the Floor 4 platform, associating it with Phase C construction. The ceramic material consists of fragments of two large plates, one red-slipped ashware and one large unslipped vessel. The plates seem to have been deposited whole or nearly so, and smashed in situ. The remains of an infant were placed on top of the unslipped plate. Fragments of the cranium, pelvis, ribs, long bones, and teeth were recovered, though all of the human material is in poor condition. Leaching action, presumably due to annual flooding, has coated those bones that survived with a layer of plaster from decomposing portions of Floor 3. Consequently, little preliminary analysis has been done on the bones before they are thoroughly cleaned. This assemblage of infant remains and large vessels is very similar to a cache located at the base of the stela in front of Structure E, Group I (Piehl 1997: 10-11). The stela cache included the remains of three infants among two large unslipped plates. The presence of a similar assemblage at Structure 102 challenges the suggestion that the stela cache was a dedicatory feature specific to monumental architecture. Further analysis of the skeletal material and comparative data will aid in determining whether these features are dedicatory deposits or infant burials.

CONCLUSION

While this report precedes most major analysis of cultural material from Structure 102, several points are clear at this time. Structure 102 functioned as an isolated residence in all phases, consisting of a plastered platform upon which a superstructure would be built. Its residents had access to a wide variety of raw materials and commodities, including granite, limestone, chert, obsidian, and ceramics, but did not possess as many nonutilitarian items as those living in Structure 193, a larger residence near Group I (Piehl 1998). The study of residences such as Structure 102 in the Belize Valley may elucidate the nature of community interaction and the role of lineages in settlement patterns in this area of the Maya lowlands.

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