

UNIVERSITY OF CALIFORNIA
RIVERSIDE

Bridging the Chasm Between Religion and Politics:
Archaeological Investigations of the Grietas at the Late Classic Maya Site of Aguateca,
Peten, Guatemala

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Anthropology

by

Reiko Ishihara

June 2007

Dissertation Committee:

Dr. Karl A. Taube, Chairperson
Dr. Wendy Ashmore
Dr. James E. Brady
Dr. Scott Fedick
Dr. Takeshi Inomata

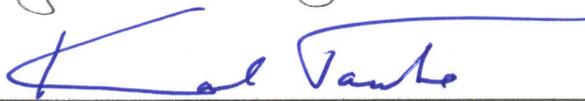
Copyright by
Reiko Ishihara
2007

The Dissertation of Reiko Ishihara is approved:





James Brady



Wendy Ashmore

Committee Chairperson

University of California, Riverside

ACKNOWLEDGEMENTS

I am obliged to the Instituto de Antropología e Historia (IDAEH) of Guatemala and Mr. Hugo Barrera for their permission and support to conduct archaeological investigation in the *grietas* at Aguateca. I am gracious to Dr. Takeshi Inomata for inviting me to join his project to study the Grieta Principal at Aguateca. I thank the Aguateca Archaeological Project directors Dr. Daniela Triadan and Lic. Erick Ponciano as well as Lic. Otto Román and Sra. Estela Pinto for their guidance and tolerance. I appreciate Dr. Kazuo Aoyama, Dr. Kitty Emery, and Dr. Lori Wright for their expertise of various archaeological materials they have offered to the grieta project.

The project was financially supported by the following grants: National Science Foundation (NSF) Dissertation Improvement Grant (SBE-0431332), NSF Graduate Research Fellowship, National Speleological Society Ralph W. Stone Graduate Fellowship in Cave and Karst Studies, and the University of California, Riverside, Dissertation Grant. My project also benefited from Dr. Takeshi Inomata's NSF grant (SBE-0414167). I would like to express my gratitude to my dissertation committee members who have provided me with valuable knowledge and guidance throughout my graduate career: Dr. Karl Taube, Dr. Jim Brady, Dr. Wendy Ashmore, Dr. Scott Fedick, and Dr. Takeshi Inomata. I appreciate Dr. Tom Patterson and Dr. Michael Kearney for attending my defense on short notice.

The project would not have been possible without the help and excellent work of the members of my crew. Cavers Beverly Shade, Nicholas Johnson, and Philip Rykwalder in addition to Douglas Weinberg explored, surveyed, and mapped the cave, and Mike Mirro coordinated with them to try to create a three-dimensional image using GIS. Jenny Guerra and Juan Manuel Palomo helped supervise investigations, and María de los Angeles Corado, Ana Cristina Morales, Matthew "Viejito" Young, and Marco Antonio Monroy persevered the depths of the *grieta*. Andre

Detry volunteered for a week in 2004 to explore the *grieta* walls, and my sister Yuko Ishihara spent a week to explore Maya cave archaeology. Certainly, if it were not for the relentless work of the following people I would be stuck on the escarpment with the generator on my back!:

Gregorio Bagi, Jose Cacao, Sebastian Choc, Roberto Cucul, Mateo Cuitz, Fidelino Mendez Perez, Leonel Och, Jesus Pascual, Eduardo Popcoc, Sergio Rivera, Juan Tux Ical, Jose Xe, Victoriano Xe, Pedro Xi, and Juan Xo. As caretaker of the site and guide during our recon trip, Edgar Castañeda's keen interest in and familiarity with the *grieta* definitely provided a positive first impression of my dissertation topic to-be.

In addition to the fieldwork, lab analysis was accomplished by the work of innumerable hands: Jenny "Duendita" Guerra's long hours with piles of sherds, Marielos "es mi mochila!" Corado's patient work with the ceramics, Yuko Shiratori for her myriads of sherd and ground stone illustrations, Juan Manuel "Juan Man" Palomo for his dedicated work with the human remains, Karla Hurtarte for her volunteered time in the lab, Hiro Iwamoto for illustrating many ceramics from the 2004 season, Alfredo Román for his illustrations of many figurines and worked bone from the 2005 season, Marco Antonio Monroy for our countless exchanges about typological identification of the sherds, and Christina Halperin for her help on the identification of many of the figurines. I thank Dr. Stephen Houston for his comments on some glyptic materials. I thank Dr. Jeff Dorale for taking in speleothem samples for analysis, and Christopher Morehart for agreeing to analyze the macrobotanical remains.

Comprising an important part of project life was the camaraderie I enjoyed with my colleagues in the field and in the lab: Jeff "Madame" Buechler, Dr. Markus "Pa pa pa-" Eberl, Jenny "Duen" Guerra, Juan Man Palomo, Otto Román, and everyone on the "lista negra." I am indebted to the Guerra family for taking me in as their "hija chinita" while I lived in Guatemala

City. In particular, I owe many thanks to Duendita ,“mi hermana chapina,” for always being there with me both underground and above.

Thanks go to the following, for their friendship, scholarly discussions, and psychological support through graduate school and life: Dr. Miguel Aguilera, Shuji Araki, Dr. Jaime Awe, Chelsea Blackmore, Juan Luis Bonor, Kata Faust, Ben Fierro, Carrie “Shaz” Furman, Cameron “Bob” Griffith, Christophe Helmke, Zachary Hruby, Taisuke Inoue, Sakurako Kaminokado, Dr. Lisa Lucero, Michael Mathiowetz, Dr. Patricia McAnany, Ryan Mongelluzzo, Akiko Nomura, Gina Núñez, Ryoko Osawa, Lorena “L Vos” Paiz, Carlos Perez-Brito, Hirokazu Sasabu, Scott Smith, Myka “Bitz” Schwanke, Lauren Schwartz, Kathy Sorensen, Kenichiro Tsukamoto, Brian Weinberg, Dr. Harold Weinberg, and Darcy Wiewall.

I am gracious to Arturo Diaz de Leon, who has stood by me through some hard times and has brought smiles and laughs back to my life.

Finally, I am incredibly thankful to my family, Papa, Mama, Takeki, Yuko and Sachiko for their love and endless support through the past decade and beyond, allowing me to spread my wings to pursue a childhood dream in Belize, Guatemala, and Mexico.

This dissertation research was completed in memory of Doug Weinberg, who I loved very much and who supported me enthusiastically and wholeheartedly through all my endeavors, including the 2003 reconnaissance trip and the 2004 field season.

ABSTRACT OF THE DISSERTATION

Bridging the Chasm Between Religion and Politics:
Archaeological Investigations of the Grietas at the Late Classic Maya Site of Aguateca,
Petén, Guatemala

by

Reiko Ishihara

Doctor of Philosophy, Graduate Program in Anthropology
University of California, Riverside, June 2007
Dr. Karl A. Taube, Chairperson

Archaeological investigations were conducted in the Grieta Principal, a large chasm that runs through the middle of the Late Classic Maya center of Aguateca, Petén, Guatemala. The central location of the *grieta* in addition to the incorporation of the *grieta* feature in the place name glyph suggested its religious importance to the Aguateca people. Alternatively, the unique morphology of the geological feature, such as exposed light spaces, seemed conducive to other activities or functions, including waste disposal from the residential buildings bordering the *grieta* and a mass graveyard of fallen bodies and weapons from the battles that presumably ensued at the end of Aguateca's history. The objectives of the study consisted of examining the nature of *grieta* use, spatial and temporal transformations in *grieta* use, and how practices in the *grieta* correlated with the historical processes of the dynasty and the Aguateca inhabitants. Grieta Rincón, a smaller chasm at the site, was also subject to investigation. Aguateca, along with Dos Pilas, was one of the twin capitals of the dynasty that ruled the Petexbatun area, and its relatively well-understood brief political history provided a temporal framework with which to contextualize the activities in the *grietas*. The systematic program of inquiry was based on a

three-phase data collection followed by laboratory analysis of the cultural materials: exploration, survey, and mapping; surface collections; and excavations. The *grieta* map were tied into the surface site map so as to correlate spatial use in the Grieta Principal with structures on the surface site.

This research archaeologically expands the current field's understanding of the definition of a "cave" in Maya religion. The data point to a principal use as a place where ritual practices were performed inside the *grieta*. It is plausible that the *grieta* served a focal position in establishing the "sacred landscape" that agreed with a cosmologically significant spatial configuration. More importantly, however, this study focused on elucidating social negotiations revolving around the dynamic production of landscape.

TABLE OF CONTENTS

LIST OF TABLES.....	.xvii
LIST OF FIGURES.....	.xx
CHAPTER 1: INTRODUCTION.....	1
Objectives of the Dissertation.....	1
Theoretical Background.....	3
Practice and History.....	3
Ideology in Practice.....	6
Space and Landscapes.....	10
Research Approach.....	17
Overview of Dissertation Chapters.....	18
CHAPTER 2: CAVES IN MESOAMERICAN COSMOLOGY.....	23
Development of Mesoamerican Cave Archaeology.....	23
Significance of “Cave”.....	27
Caves in Place Names.....	28
Caves in Maya Religion.....	29
Ethnohistoric and Ethnographic Records of Cave Use.....	30
Archaeological Evidence of Cave Use.....	33
CHAPTER 3: SITE SETTING.....	37
Past Investigations at Aguateca.....	37
Political History of Aguateca.....	38
Geological Formation of the <i>Grietas</i>	41
Site Description of Grieta Principal.....	42
Hidden Jar Area (Suboperation 31A).....	43

Two Owls Area (Suboperation 31B).....	44
Southern Entrance Area (Suboperation 31C).....	45
Chill Hill Area (Suboperation 31D).....	46
Windy Valley (Suboperation 31E).....	47
Site Description of Grieta Rincón.....	47
CHAPTER 4: SURVEY AND MAPPING.....	64
Mapping Phase 1.....	65
Mapping Phase 2.....	67
Archaeological Mapping.....	67
Results of the Survey.....	68
Architectural Features.....	70
Wall 1.....	70
Wall 2.....	71
Wall 3.....	71
Wall 4.....	72
Speleothem Study.....	72
Summary.....	75
CHAPTER 5: SURFACE COLLECTIONS.....	90
Grieta Principal.....	91
Suboperation 31A: Hidden Jar Area.....	91
Suboperation 31B: Two Owls Area.....	93
Suboperation 31C: South Entrance Area.....	94
Grieta Rincón.....	96
Suboperation 30A: The Cave.....	96

Summary.....	97
CHAPTER 6: EXCAVATIONS.....	107
Grieta Principal.....	108
Suboperation 31A: Hidden Jar Area.....	108
Inner Chamber (Units 11 and 12).....	109
Outer Chamber (Units 9, 10 and 14).....	111
The Alcove (Unit 13).....	115
Summary.....	116
Suboperation 31B: Two Owls Area.....	117
Two Owls Chamber (Units 8, 9 and 13).....	118
Passage 1 (Units 6, 7, 10, 11 and 12): Construction of Wall 1.....	123
Passage 1 (Units 6, 7, 10, 11 and 12): Rock alignment & activity areas.	124
Passage 3 (Unit 14).....	128
Summary.....	130
Suboperation 31C: South Entrance Area.....	131
Passage 8 (Unit 7).....	131
Upper Chamber (Units 8, 9 and 10).....	132
Southern Entrance Passage (Unit 11).....	134
Summary.....	135
Suboperation 31D: Chill Hill Area.....	136
Chamber 5, Open Area (Unit 1).....	136
Chamber 5, Possible Steps (Units 3 and 4).....	139
The Cave (Units 2, 5 and 6).....	141
Chamber 5, North Part (Unit 7).....	143

Chamber 5, East Part (Unit 8).....	145
Summary.....	146
Suboperation 31E: Windy Valley.....	147
Summary.....	150
Grieta Rincón.....	150
Suboperation 30A: The Cave Interior.....	150
Suboperation 30B: The Grieta Portion (Cave Exterior).	152
Synthesis of Excavation Results.....	158
CHAPTER 7: ARTIFACT ANALYSIS.....	194
Ceramics.....	194
Vessels.....	195
Partial and Whole Vessels.....	198
Miniature Vessels.....	200
Overview of Ceramic Types.....	201
Key Temporal Markers.....	203
Reworked Sherds.....	205
Figurines.....	208
Lithics.....	211
Chipped Stone: Chert.....	211
Chipped Stone: Obsidian.....	213
Chipped Stone: Other.....	215
Ground Stone: Manos and Metates.....	216
Ground Stone: Other.....	218
Manuports.....	222

Faunal Material.....	224
Unmodified Bone and Shell.....	224
Modified Bone and Shell.....	226
Spatulas.....	226
Needles.....	226
Picks.....	228
Awls.....	230
Bone Tubes.....	232
Rasps.....	232
Bone Disks.....	233
Bone Plaque.....	234
Other.....	236
Human Remains.....	238
Miscellaneous Artifacts.....	239
Clay Artifacts.....	239
Stone Artifacts.....	240
Other.....	242
CHAPTER 8: SOCIAL PROCESSES MANIFESTED IN GRIETA ACTIVITIES.....	308
Temporal Dimension of Grieta Use.....	308
Preclassic Use.....	308
Early Classic Use.....	309
Late Classic Use.....	311
Performative Dimensions of Ritual Practices.....	314
Feasting Activities.....	314

Faunal Assemblages.....	316
Ceramic Assemblages.....	321
Summary.....	325
Musical Performances and Rain-making.....	327
Negotiating Gender Relations.....	336
Femaleness of Weaving.....	339
Femininity of Caves.....	342
Women in Religious Life.....	343
Textile Production Toolkit in the Archaeological Record.....	345
Distribution of Textile Production Tools in the Aguateca Grietas.....	347
Gendered Use in the Aguateca Grietas.....	348
Summary.....	350
Differential Use of Space.....	351
Southern Entrance Area.....	351
Two Owls Area	352
Hidden Jar Area.....	355
Windy Valley	356
Chill Hill Area.....	357
Grieta Rincón.....	359
CHAPTER 9: CONCLUSION.....	372
REFERENCES CITED.....	377
APPENDIX A: GLOSSARY OF CAVE TERMINOLOGY.....	420
APPENDIX B: DESCRIPTIONS OF “NEW” CERAMIC TYPES.....	422

APPENDIX C: EXCAVATED MATERIALS BY LOT.....436
APPENDIX D: OVERSIZE MAPS..... .450

LIST OF TABLES

Table 3.1. Political history of Dos Pilas - Aguateca, based on known hieroglyphic texts.....	50-51
Table 3.2. Rulers of the Dos Pilas – Aguateca dynasty,.....	52
Table 4.1. Architectural features documented in the Aguateca <i>grietas</i>	77
Table 4.2. Descriptions of speleothem breakage in Grieta Principal and Grieta Rincón.....	86
Table 6.1. Index of excavation units.	159
Table 6.2. Artifact type codes used to categorize artifacts.	161
Table 6.3. AMS dates from the Grieta Principal and Grieta Rincón.	193
Table 7.1. Ceramic types and their frequencies, listed by time period.....	243-244
Table 7.2. Ceramic chronology for the Petexbatun area	245
Table 7.3. Ceramic frequencies by time period.	246
Table 7.4. Ceramic frequencies by area investigated.	246
Table 7.5. Spatial distribution of ceramic sherds.....	247
Table 7.6. Vessel forms of Late Classic ceramics by area.....	248-249
Table 7.7. Vessel forms of Early Classic ceramics by area.	250
Table 7.8. Vessel forms of Preclassic ceramics by area.	251
Table 7.9. List of partial and whole vessels.....	252-253
Table 7.10. List of sherds of miniature vessels.....	255
Table 7.11. Spatial distribution of late Nacimiento phase type: Chablekal Gray.....	263
Table 7.12. Spatial distribution of late Nacimiento phase type: Zopilote Smudged.	264
Table 7.13. Spatial distribution of late Nacimiento phase type: Andres Red.	265
Table 7.14. Reworked ceramic sherds from the Grieta Principal and Grieta Rincón.	266
Table 7.15. Figurines classified by function.....	268
Table 7.16. Figurines classified by shape.....	268
Table 7.17. Frequency of figurines by form.....	269

Table 7.18. Frequency of figurines by function.	269
Table 7.19. Frequency of figurines by generalized form.....	269
Table 7.20. Spatial distribution of all figurines, by frequency.	270
Table 7.21. Spatial distribution of musical instruments.	271
Table 7.22. Types of chert tools.	273
Table 7.23. Types of obsidian artifacts.	273
Table 7.24. Spatial distribution of chert artifacts.	274
Table 7.25. Spatial distribution of obsidian artifacts.....	275
Table 7.26. Manos recovered from the Grieta Rincón and the Grieta Principal.	280-281
Table 7.27. Catalog of metate fragments.	287
Table 7.28. Limestone spindle whorls.....	289
Table 7.29. Catalog of doughnut stones.	291
Table 7.30. Catalog of hammer stones and rubbing stones.	292
Table 7.31. Catalog of speleothem manuports.....	293
Table 7.32. Catalog of manuports: small pebbles.....	295
Table 7.33. Identified faunal remains listed by lot.	296-297
Table 7.34. Frequencies of unmodified animal bone and shell.....	298-299
Table 7.35. Worked bone and shell from the Aguateca <i>grietas</i> , by lot.	300-302
Table 7.36. Comparison of the frequencies of modified bone and shell artifacts from cave sites and the Aguateca surface site.	303
Table 8.1. Identified faunal material by lot.	367-368
Table 8.2. Frequencies of vessel forms for the units with analyzed faunal data.....	369
Table 8.3. Frequencies of rim sherds by vessel form.	369
Table 8.4. Spatial distribution of musical instruments	370
Table 8.5. Frequency of textile production tools.	371

Table 8.6. Spinning tools recovered from the Grieta Principal.	371
Table 8.7. Weaving tools recovered from the Grieta Principal and Grieta Rincón.	372
Table 8.8. Distribution of textile production tools by Unit.	373

LIST OF FIGURES

Figure 1.1. Map of the Petexbatun area.....	19
Figure 1.2. Site map of Aguateca showing locations of the Grieta Principal, Grieta Rincón, Barranca Escondida, Grieta Turística, and Grieta Pequeña.	20
Figure 1.3. Aguateca place name, which reads “K’inich Pa’ Witz”	21
Figure 1.4. One microcosm constructed at Aguateca, with its focus on the elite constituents.....	22
Figure 3.1. Plan and profile maps of the Grieta Principal, showing locations of investigated areas and their operation designations.....	53
Figure 3.2. Plan of the Hidden Jar Area (Suboperation 31A) which consists of Chamber 2 (Inner Chamber), the Alcove, and Chamber 4 (Outer Chamber).....	54
Figure 3.3. Plan of the area where the partial jar was found cached behind a stalagmite.....	55
Figure 3.4. Plan of the Alcove, Hidden Jar Area.....	55
Figure 3.5. Schematic drawing of the geologic formation of the Hidden Jar Area.....	56
Figure 3.6. Plan of the Two Owls Area (Suboperation 31b), which consists of Chamber 1, Passage 1, and Passage 2.....	57
Figure 3.7. Photo of the Two Owls Chamber, looking south.....	58
Figure 3.8. Plan of the Southern Entrance Area (Suboperation 31C), which consists of the Southern Entrance Chamber, Passage 4, Passage 7, and Passage 8.....	59
Figure 3.9. Photo of the Upper Chamber, Southern Entrance Area, looking north.....	60
Figure 3.10. Photo of Chill Hill, looking north.....	61
Figure 3.11. Plan of the Chill Hill Area (Suboperation 31D), consisting of Chamber 5 and the Cave.	62
Figure 3.12. Cave on Chill Hill, looking inward from the entrance.....	63
Figure 3.13. Cave on Chill Hill, looking south toward the entrance from the back of the cave. ..	63
Figure 4.1. Speleothems recovered from the collapsed material of Structure L8-4, Aguateca.....	77
Figure 4.2. Symbols used in the maps.....	77

Figure 4.3. Plan of the Grieta Rincón and the cave under it.....	79
Figure 4.4. Profile of the Grieta Rincón and the cave.....	80
Figure 4.5. Profile and plan of the cave in the Barranca Escondida area.	81
Figure 4.6. Profile and plan of Grieta Pequeña I (Grieta Turística).....	82
Figure 4.7. Profile and plan of Grieta Pequeña II.....	82
Figure 4.8. Petroglyph in the Grieta Turística.....	83
Figure 4.9. Section and plan of the Cave Under the Bridge, which is located above the Two Owls Area and behind and below Structure L8-5.....	83
Figure 4.10. Elevation drawings and plan of Wall 1, Passage 1, Two Owls Area.....	84
Figure 4.11. Section drawing, elevation drawing, and plan of Wall 2, Two Owls Chamber, Two Owls Area.....	84
Figure 4.12. Section and elevation of Wall 3, Passage 4, Southern Entrance Area.	85
Figure 4.13. Plan and elevation drawings of Wall 4, Inner Chamber, Hidden Jar Area.....	85
Figure 4.14. Map showing locations of speleothem breakage in Grieta Principal.....	87
Figure 4.15. Map showing locations of speleothem breakage in Grieta Rincón.....	88
Figure 4.16. Niche created by the removal of some speleothems.....	89
Figure 5.1. Map of the Hidden Jar Area (Suboperation 31A), showing locations of the surface collection units.....	98
Figure 5.2. Photo of the jar that was found under boulders, cemented to a rock by calcite.....	99
Figure 5.3. Photo of the general area of the jar found under boulders,.....	99
Figure 5.4. Photo of the partial jar <i>in situ</i>	100
Figure 5.5. Map of the Two Owls Area (Suboperation 31B) showing locations of the surface collection units.	101
Figure 5.6. Profile of Passage 1, looking north, showing the niche with the possibly modified ledge which has smoke-blackening.....	102

Figure 5.7. Photo of the niche with smoke-blackening, Passage 1.....	102
Figure 5.8. Photo of the smoke-blackened wall in Passage 1 south of the modified niche.....	102
Figure 5.9. Plan of the Southern Entrance Area, showing the locations of the surface collection units.	103
Figure 5.10. Artifacts surface collected from the Upper Chamber, Southern Entrance Area.....	104
Figure 5.11. Photo of area where miniature jar and polychrome bowl sherds were found.....	104
Figure 5.12. Plan map of Grieta Rincón, showing locations of surface collection units.....	105
Figure 5.13. Photo of faunal material found in Unit 1, Lot 3, Inside the Cave, Grieta Rincón...	106
Figure 5.14. Photo of the platform feature inside the cave of Grieta Rincón.	106
Figure 6.1. Lot form (front, back) used for the <i>grieta</i> excavations.....	160
Figure 6.2. Map of the Hidden Jar Area showing the locations of the excavation unit	162
Figure 6.3. Profiles of the south and west baulks of Unit 11, Inner Chamber, Hidden Jar Area .	163
Figure 6.4. Section drawing of Wall 4 and the south view of the area around Unit 12	163
Figure 6.5. Artifacts from Unit 12, Inner Chamber, Hidden Jar Area.....	164
Figure 6.6. Profile of west baulk of Unit 9, Outer Chamber, Hidden Jar Area.....	164
Figure 6.7. Hollow figurine head, Unit 9, Outer Chamber, Hidden Jar Area.	164
Figure 6.8. Profiles of the south and west baulk of Unit 10, Outer Chamber, Hidden Jar Area. .	165
Figure 6.9. Profile of north baulk of Unit 14, Outer Chamber, Hidden Jar Area.	165
Figure 6.10. Photo of Unit 13 in the Alcove showing the altar-platform before excavation.....	165
Figure 6.11. Profiles of north and east baulks of Unit 13, Alcove, Hidden Jar Area.....	166
Figure 6.12. Plans of the lots collected in Unit 13, Hidden Jar Area.	166
Figure 6.13. Map of the Two Owls Area (Suboperation 31B) showing the locations of the excavation units.....	167
Figure 6.14. Section and plan of Step 1 after excavation of Unit 8, Two Owls Chamber.....	168
Figure 6.15. Profile of the south baulk of Unit 8, Two Owls Chamber.....	168

Figure 6.16. Profile of the west baulk of Unit 8, Two Owls Chamber.	168
Figure. 6.17. Profiles of west and north baulks of Unit 9, Two Owls Chamber.	169
Figure 6.18. Photo of a cache consisting of a complete bone needle, two jade pendants, and two perforated animal teeth (lot AG31B-9-5-2).....	169
Figure 6.19. Plan of the bottom of the unit in which flowstone was exposed.....	170
Figure 6.20. Plan showing disarticulated human bone in Unit 13 (Interment #27).....	170
Figure 6.21. North profile of Unit 6 with the south elevation of Wall 1, Two Owls Area.	171
Figure 6.22. North profile of Unit 7, Passage 1, Two Owls Area.....	171
Figure 6.23. North profile of Unit 11, Passage 1, Two Owls Area.....	171
Figure 6.24. Plan of Units 7, 11 and 11-extension. Numbers indicate unit numbers.....	172
Figure 6.25. West profile of Unit 11-extension.....	172
Figure 6.26. Saxche-Palmar Orange Polychrome bowl from Units 7, 11, and 11-extension.....	172
Figure 6.27. Delirio-plano Relief vessel recovered from the eastern flat area of Unit 7.	173
Figure 6.28. Profile of south baulk of Unit 12, Passage 1, Two Owls Area....	173
Figure 6.29. West and north profiles of Unit 14, Passage 3, Two Owls Area.	173
Figure 6.30. Map of the Southern Entrance Area (Suboperation 31C) showing the locations of the excavation units.....	174
Figure 6.31. Reconstructible vessels recovered from Unit 7.	175
Figure 6.32. Profile of Unit 8, Upper Chamber, Southern Entrance Area.	175
Figure 6.33. Profile of Unit 11, Southern Entrance Area.	175
Figure 6.34. Profile of Unit 9, Upper Chamber, Southern Entrance Area.	176
Figure 6.35. Photo of Unit 10, Upper Chamber, Southern Entrance Area.	176
Figure 6.36. Vessels recovered from Unit 10, Southern Entrance Area.....	177
Figure 6.37. Map of the Chill Hill Area (Suboperation 31D), showing the locations of the excavation units.....	178

Figure 6.38. South profile of Unit 1, Chamber 5, Chill Hill.....	179
Figure 6.39. Plans of lots from Unit 1, Chill Hill Area.....	180
Figure 6.40. Profile of Unit 3, Chill Hill Area.	181
Figure 6.41. Sketch plan of unit location and profile of Unit 4, Chill Hill Area.....	181
Figure 6.42. Map of the cave on Chill Hill, showing the location of Units 2 and 5.....	182
Figure 6.43. Profiles of the south and west baulk of Units 2 and 5, Cave, Chill Hill Area.....	182
Figure 6.44. Photo of lot 5-2-3, inside the cave on Chill Hill Area.....	183
Figure 6.45. Plan and profile of Unit 6, Entrance to Cave, Chill Hill Area.	184
Figure 6.46. Photo of alcove nicknamed Hobbit Alcove , with Unit 7 below.	184
Figure 6.47. Profile of Unit 7, Chill Hill Area.	184
Figure 6.48. Profile of Unit 8, Chill Hill Area.....	185
Figure 6.49. Sketch plan of possible steps (Unit 9), Chill Hill Area	185
Figure 6.50. Location of Unit 1 in the Windy Valley	186
Figure 6.51. West profile of Unit 1, Windy Valley..	187
Figure 6.52. Photo of carbonized wood from lot AG31E-1-5-2.	187
Figure 6.53. Map of Grieta Rincón, showing the location of excavation units.	188
Figure 6.54. Section, elevation and plan of the platform, inside the Cave, Grieta Rincón.....	189
Figure 6.55. East profile of Unit 5, inside the Cave, Grieta Rincón.	189
Figure 6.56. Photo of Units 2 and 4 in relation to the cave entrance, Grieta Rincón.	190
Figure 6.57. Profile of the north baulk, Unit 4, <i>grieta</i> portion of Grieta Rincón.....	190
Figure 6.58. Plans of lots in Unit 4, Outside the cave in Grieta Rincón.	191
Figure 6.59. Profile of north baulk of Unit 1, Outside the cave in Grieta Rincón.	192
Figure 6.60. Plan of Unit 2, Outside the cave in Grieta Rincón.....	192
Figure 7.1. Partial and whole vessels.	254

Figure 7.2. Line drawings of miniature vessels.....	256
Figure 7.3. Reworked perforated ceramic sherds.....	267
Figure 7.4. Notched ceramic sherds.....	267
Figure 7.5. Reworked sherd disks with no perforations	267
Figure 7.6. Figurines of the hollow head type.	272
Figure 7.7. Figurines and whistles.	272
Figure 7.8. Flutes and whistles.....	273
Figure 7.9. Chert points and knife fragments.	276
Figure 7.10. Chert general utility bifaces.....	277
Figure 7.11. Chert bifaces (chopper-pounders).	278
Figure 7.12. An unidentified limestone object.....	278
Figure 7.13. Reworked obsidian blades.	279
Figure 7.14. Obsidian prismatic blades.....	279
Figure 7.15. Obsidian cores.	279
Figure 7.16. False molar made of quartzite (?).	279
Figure 7.17. Types of manos.....	282
Figure 7.18. Complete or almost complete manos.....	283
Figure 7.19. Mano fragments.	284
Figure 7.20. Mano fragments from Unit 14, Two Owls Area.	285
Figure 7.21. Manos (limestone) with reuse or end use.	286
Figure 7.22. Metates.....	288
Figure 7.23. Greenstone pendants.....	289
Figure 7.24. Limestone spindle whorls.....	289
Figure 7.25. Celt of unidentified stone	290
Figure 7.26. Chert pestle.	290

Figure 7.27. Doughnut stones.	291
Figure 7.28. Hammer stones and rubbing stones	292
Figure 7.29. Irregularly shaped limestone with perforation.....	293
Figure 7.30. Speleothem manuports.....	294
Figure 7.31. Manuports. Small pebbles.	294
Figure 7.32. Manuports. Quartz crystals.....	295
Figure 7.33. Manuports. Pumice	295
Figure 7.34. Spatula, unidentified mammal bone.....	304
Figure 7.35. Bone needles	304
Figure 7.36. Bone picks with carved distal ends.....	305
Figure 7.37. Awls	305
Figure 7.38. Bone pin with a carved human hand	306
Figure 7.39. Bone tubes	307
Figure 7.40. Bone rasps.....	207
Figure 7.41. Centrally perforated bone disks	307
Figure 7.42. Intricately carved bone plaque.....	308
Figure 7.43. Finger ring made of conch (?).	309
Figure 7.44. Thin, crudely cut pointed bone.....	309
Figure 7.45. Perforated animal teeth	309
Figure 7.46. Ornamental marine and freshwater shell artifacts	310
Figure 7.47. Ornamental freshwater shell artifacts	310
Figure 7.48. Polished bone object with nine biconically drilled holes.....	311
Figure 7.49. Modified animal bone object of unknown function	311
Figure 7.50. Ceramic bead.....	311
Figure 7.51. Incised, ceramic spindle whorl fragment	311

Figure 7.52. Cylindrical stamp fragment with remnants of red pigment on exterior surface	311
Figure 7.53. Unidentified ceramic object.....	312
Figure 7.54. Pyrite mirror mosaic piece	312
Figure 7.55. Body sherd of a white stone vessel, with incisions on the sherd exterior.	312
Figure 7.56. Red pigment (cinnabar?) and unidentified stucco object.....	313
Figure 8.1. Profile of the Chill Hill Area.	373
Figure 8.2. The long, steep slope up to the Chill Hill Area.....	374
Figure 8.3. Thick clouds rising from the southern slope onto Chill Hill.	375
Figure 8.4. Map showing the distribution of textile production tools, figurines depicting females, manos, and metates.....	376
Figure 8.5. Relative location of the Two Owls Area to the Main Plaza.	377
Figure 8.6. Relative location of the Chill Hill Area (circled) to the Palace Group.....	377

CHAPTER 1

INTRODUCTION

Objectives of the Dissertation

The ancient Maya site of Aguateca was established as Dos Pilas' twin capital around AD 700, and is known for its short history and rapidly abandoned site center (**Figure 1.1, Tables 3.1, 3.2**). Structures that formed the core of Aguateca were constructed on either side of the Grieta Principal (local Spanish name meaning "Main Chasm"), a narrow and deep chasm that extends the entire length of the site (**Figure 1.2**). A geologically unique topographic feature in the Maya area, the naturally formed Grieta Principal measures approximately 860 m long, 10 – 70 m deep, and 1.5 – 15 m wide (**Figure 3.1**; see also **Figure D.1**). The majority of the elite residential and administrative groups were built in the area between the steep escarpment on the east and the Grieta Principal on the west. The Aguateca capital was established during a time of turbulent politics, and undoubtedly the architects of the capital selected the site location in part for the escarpment and chasm that served as natural protective barriers. However, despite this defensively advantageous setting combined with the construction of a system of defensive walls surrounding the central precinct, Aguateca was attacked around AD 810 and many buildings in the site center were burned, forcing the inhabitants to abandon their homes rapidly. It is the closing episodes of Aguateca's history that has been the focus of investigations by Dr. Takeshi Inomata and colleagues during the first phase of research at the site in the 1990s.

A second phase of the Aguateca Archaeological Project, headed by Dr. Daniela Triadan, Dr. Takeshi Inomata, and Licenciado Erick Ponciano, attempts to expand our understanding of the social processes involved in the establishment of the polity at Aguateca and the short-lived occupation there. This dissertation research emerged as part of the second phase and focuses on the Grieta Principal, examining its religious and political significance in relation to the settlement

history. Its importance in the local community's identity can be observed in the toponymic glyph K'inich Pa' Witz which graphically shows a cleft mountain, representing the *grieta* at the top of the escarpment (**Figure 1.3**). As a subterranean feature, the chasm fits into the definition of *ch'en*, "hole in the earth," in many Maya languages including Tzotzil (Vogt 1981:120), Ch'orti' (Hull 2005), Chol (Josserand and Hopkins 1996), Yukatek (Bolles 1997) and Classic Maya (Vogt and Stuart 2005), but there are no precedents to confirm this identification due to its uniqueness as a geological feature in the Maya area. Such openings in the earth were important cosmological places as points of access to the ancestors and supernaturals, and recent archaeological studies have shown that caves, or various forms of holes in the earth, were sites of ancient ritual activities. One hypothesis, then, was that the *grieta* had a ritual function.

Alternatively, the chasm contained spaces that were distinct from those commonly encountered in caves. These spaces were not enclosed in a roofed chamber but rather open to the sky, allowing objects to be tossed in. Because residential buildings stood adjacent to the chasm, household middens were anticipated in the chasm, as middens had scarcely been found at the surface site (Inomata, personal communication, 2003). Thus another hypothesis is that the *grieta*, or at least parts of it, functioned as a waste disposal site. Additionally, although we have evidence that the site center was burned down, little evidence of battles that presumably ensued ca. AD 810 has been encountered. If the *grieta* had served a defensive function and battles occurred, particularly along the *grieta*, then it seemed plausible the *grieta* might be a mass graveyard, or at least contain wounded and fallen bodies and weapons, suggestive of warfare. Therefore, the primary objective of this study was to elucidate the roles played by the Grieta Principal in the daily lives of the Aguateca inhabitants.

Another facet of this study focused on a smaller chasm at the southern edge of the site, named Grieta Rincón for its location in the corner of the site (**Figure 1.2**). This *grieta* is located

adjacent to the Barranca Escondida cave, where Early Classic ceramics were found (Eberl 2003). It has been argued that two of the four stelae found in the Barranca Escondida area outside the cave are associated with the preceding polities of the Petexbatun region, the Tamarindito – Arroyo de Piedra dynasty (Eberl 2000a; Eberl 2000b). These data suggest that the Barranca Escondida area later occupied by Aguateca was under the reign of the Tamarindito - Arroyo de Piedra dynasty and that the area was of ritual significance to this earlier dynasty. Due to its spatial proximity and similar morphological forms of the Barranca Escondida cave and the Grieta Rincón cave, it was thought that Grieta Rincón was likewise a ritually significant area during this same time period associated with the Tamarindito polity. This current study is one of the few cases in which we are able to articulate cave use with the political history of the competing dynasties in the region. The short but relatively well-understood political history of the Aguateca-Dos Pilas dynasty will provide a temporal framework with which to contextualize the activities in the chasms.

Theoretical Background

Practice and History

In order to examine the social processes involved in the making of Aguateca history, I employ what Timothy Pauketat calls a “revised historical-processual archaeology,” an emphasis on cultural practices (Bourdieu 1977), or actions and representations, to explain historical processes (Pauketat 2001). In what he proposes as a paradigm shift, Pauketat critiques the essentialism and functionalism inherent in past theoretical trends, in particular, neo-evolutionary, cognitive-processual, and agency approaches. In these approaches, a standard and uniform set of human behaviors is assumed, and causal explanations of phenomena (e.g., in Pauketat’s example, the emergence of Cahokia) are relegated to external factors such as favorable natural

environments (Pauketat 2001:84-85). Behaviors are inferred from material remains, and this inference is a “simple linear equation” with no space for variations.

Pauketat, however, puts the spotlight on the people who create and shape history. He follows Wolf in perceiving history as a palimpsest of “processes unfolding, intertwining, spreading out and dissipating over time” (Wolf 1994:590). With the revised historical processualism, the notion of behavior, which is defined as “abstract, goal-oriented human activity” is replaced by the study of practices, “homologous actions and representations that vary between contexts or events even if the routinized forms... seem to remain the same” (Pauketat 2001:86). By examining cultural practices, that is, “what people did and how they negotiated their views of others and of their own past” (Pauketat 2001:73), the attention centers on “the creative moments in time and space where change was actually generated” (Pauketat 2001:87). Importantly, so long as relations of power characterize and influence social relations and cultural practices, practices will always be processes of negotiation (Pauketat 2001:80). With this approach, historical processes are defined as the articulation of macroscale changes with microscale changes (Pauketat 2001:83; see also Wolf 1990:590). Macroscale changes consist of unique events that tend to have broad implications and affect more people and their living conditions, such as the construction of the large buildings at Aguateca, whereas microscale processes concern the day-to-day activities of individuals that, within the context of differential power relations, are processes of negotiation (Pauketat 2001:82-83; Shennan 1993:55). Pauketat presents the increased use of shell temper in pottery production at Cahokia as an example of microscale process that was associated with the macroscale event of the founding of the political capital of Cahokia (Pauketat 2001:83).

It is precisely this articulation between the macroscale and microscale levels of practice on which I focus my research because the goal of this dissertation is to elucidate the social

processes involved in the establishment, maintenance, and collapse of the Aguateca polity, as reflected in *grieta* uses. Much of the political history of the Aguateca – Dos Pilas dynasty is known from the hieroglyphic record of rulers' accomplishments carved on stone monuments. Although the practices (e.g., battles won, rituals performed, etc.) of the individual rulers who wrote their history in stone were in themselves negotiations with rivaling leaders in the area, hence microscale actions, inasmuch as the episodes implicated wider social or political change onto the community members, they can be considered macroscale processes. Meanwhile, the residues of practices that archaeologists excavate, representing activities carried out in their daily lives by individuals, are microscale practices. It is these microscale practices in the Grieta Principal on which I focus my study, examining how the practices, all of which will be shown to have been religious rituals, articulate with the political history of Aguateca, that is, the macroscale processes. Other macroscale processes that may be at play include practices informed by ideology, cosmology, social roles, and social statuses.

As on-the-ground actions, practices reflect the negotiations between the actors, their social roles (e.g., gender) and statuses, and institutional structures (e.g., polity, worldview) but at the same time are also influenced by potentially shifting circumstance (e.g., politics, natural phenomena). Oftentimes religious traditions are considered to be conservative with minimal change (cf. Bell 1997; Pauketat 2001:80), and indeed aspects of indigenous religion throughout Mesoamerica have been shown to persevere through time (e.g., Coe 1973; Miller and Taube 1993). Though many of the macroscale cosmological structures and symbols show continuity through time in the ancient Maya culture, the meanings and the ways such conceptual structures were understood most likely were transformed by the people who interacted and lived with them. At the same time, these microscale negotiations of the significances created and attached to such iconographic representations were shaping and transforming the religion itself. Mesoamerican

scholars have succeeded thus far in laying out the framework for understanding macroscale cosmological structures and associated meanings (e.g., Coe 1978; Freidel, et al. 1993; Gossen 1974; Stuart and Houston 1994; Taube 1992; Thompson 1970; Tozzer 1941; Vogt 1969). More specifically, the cosmological significances of caves and the various functions of cave rituals have been elaborated through ethnographic, iconographic, and archaeological studies (e.g., Brady 1989; Stone 1995; Taube 1986; Thompson 1975), which are reviewed in the following chapter. It is my contention that we can now turn our attention to on-the-ground, microscale practices of how ritual participants actively worked with such structures and meanings as part of their identity formation and history making.

Ideology in Practice

In understanding the microscale practices discussed above, some of the macroscale processes that likely were in play merit attention. Ideology, in addition to cosmology, and social roles and statuses, are some of these macroscale processes, of which the latter three will be discussed in later sections and chapters. The concept of ideology has occupied social scientists as a central research theme since Karl Marx's discussion in "The German Ideology" (Marx and Engels 1970) in the mid-19th century, and the history and development of these studies have been discussed elsewhere (Eagleton 1991; Larrain 1979). In this section, I briefly examine the concept of ideology as it may pertain to the establishment of the Aguateca center and use of the Grieta Principal.

The notion of ideology consists of ideas, beliefs, and representations that are "generated by and [tend] to reproduce conflicts in interest" (Miller and Tilley 1984:14). As Comaroff and Comaroff (1992:29) note, "ideology originates in the assertions of a particular social group," but not necessarily that of the dominant group in a society. Multiple ideologies can and often do exist, as subordinate groups hold opposing or contrasting ideologies that they may use to "overcome

both coercive and ideological controls” (Miller and Tilley 1984:29; see also Comaroff and Comaroff 1992:29; Eagleton 1991:6). As such, ideology is a form of power insofar as it can be used to “gain some control over the terms in which the world is ordered” (Comaroff and Comaroff 1992:29). More pointedly, the interests that are being promoted by a certain ideology “must have some relevance to the sustaining or challenging of a whole political form of life” (Eagleton 1991:29). Thus, although the dominant social group may hail their ideology which tends to naturalize unequal social relations and obscure social reality, this dominant ideology is always subject to contestation (Eagleton 1991:5; Miller and Tilley 1984:14).

As already mentioned, ideologies are not simply ideas and beliefs; they are also manifested in material representations and enacted through social practices (Miller and Tilley 1984:14). To a certain degree they are “lived relations” (Althusser 1971; 1984), and as a “component of human *praxis*..., [they serve] an integral element in the production, reproduction, and transformation of the social” (Miller and Tilley 1984:14). It is the social practices of ideologies that are the focus of the current study, but in order to contextualize the social practices, I first discuss ways in which ideology was promoted by the dominant groups of the society in question.

In the case of pre-Columbian Maya societies, archaeological, iconographic, and epigraphic studies have shown that ideology and ritual performances played a critical role in the consolidation of political power both within the immediate political center and abroad with other polities (e.g., Demarest 1992b; Freidel and Schele 1988; Houston and Stuart 1996; Lucero 2006; Lucero and Fash 2006). The prevalence of religious undertones in the ideology and rituals promoted by the ruling sector of society has prompted scholars to use the term “religious ideology,” but I will continue to use the term “ideology” because there is not necessarily a straight forward distinction between religious and other forms of ideology (e.g., political) with

regard to Classic Maya society. Rulers and elites presented themselves as being closer to the supernatural world, with privileged access to knowledge of and communication with supernatural entities (Freidel 1992; Houston and Stuart 1996). In fact, rulers were often depicted on stone monuments as deities. Ritual performances were conducted in public spaces served not only to reinforce the ruler's divine status and legitimate authority but also to subvert and maintain unequal power relations that supported society (Inomata 2006b).

If ideology did indeed function so prominently in the acquisition and maintenance of political power by Classic Maya rulers, then how was it manifested at Aguateca? Ashmore and others (Ashmore 1989; 1991; Ashmore and Sabloff 2002; Coggins 1967; 1980; Houk 1996; Joyce 2000; Mathews and Garber 2004) have argued that spatial arrangements of civic centers were hardly random but rather informed by directional symbolism that carried cosmological significances. Large construction projects of monumental architecture as well as architectural sculpture that decorated the buildings were vital media through which the state or rulers publicly expressed the dominant ideology and their own power (Benson 1985:188). As home to a newly arriving dynasty, the buildings that were to constitute the civic center at Aguateca were constructed in an area that had very little prior occupation (Inomata 1995; 1997). To put it simply, the builders of the center had a clean slate on which to create their new capital. Because Aguateca lacks lengthy architectural sequences and the accumulation of varied meanings associated with the buildings and their placements, the site presents an ideal case in which to examine spatial layout and its significances. I suggest that the spatial configuration of Aguateca does reflect cosmologically significant concepts of directionality, as discussed in the next section.

Furthermore, during times of crisis, certain ideologies and other factors of power, which had been taken for granted, may become a point of conscious, overt struggle and negotiation, because the stake of such a struggle tends to be higher. In this process, some people may

“relinquish power and autonomy to authority figures” (Joyce and Winter 1996:35; see also Wolf 1990:593) while others may actively resist. I use the term power to encompass Wolf’s (1990:586-587) definitions of what he calls “tactical or organizational power” and “structural power.” The former refers to control over energy flows in interpersonal relations within a given setting or environment, while the latter “organizes and orchestrates the settings themselves... [and] specifies the distribution and direction of energy flows” as exemplified in Marx’s reference to power of capital to control labor power (Wolf 1990:586). In contrast to Foucault who sees this latter type of power to “govern” consciousness, I follow Wolf in that it “structures the political economy” (Wolf 1990:587). Thus Aguateca may prove useful in examining the historical processes of the use of ideological power because the reign of the Aguateca – Dos Pilas dynasty was fraught with political turmoil (see Chapter 3 for dynastic history). One particularly significant event was the arrival of the Dos Pilas dynasty, backed by Tikal, during the early part of the 7th century to the area that was probably under the control of Tamarindito – Arroyo de Piedra and sought after by Calakmul. Another time of crisis occurred in AD 761, when K’awiil Chan K’inich was captured and Aguateca became the primary capital of the dynasty.

Certainly, the construction of the Aguateca settlement was a large-scale project that required power and coordination to mobilize collective labor. Aside from construction projects that constituted ongoing processes of power consolidation such as the building of Structure L8-8, which was left unfinished (Inomata, et al. 2004), the ruling elites needed other ways to continuously reassert their power, particularly because of the instability and vulnerability of the ideological dependence for the source of their power (Demarest 1992a:153). As mentioned earlier, state-sponsored ritual performances served to physically express the dominant group’s ideology. At Aguateca, the spacious public plaza would have been able to accommodate a large population,

possibly an inclusive strategy aimed at integrating a great proportion of the Aguateca community members (Inomata 2006a). The Grieta Principal may have been used as a part of such state rituals, in which only the privileged few could enter to conduct rituals and converse with the ancestors. This publicly displayed restriction on access would further reinforce the ruling elites' power, in effect legitimating it.

The discussion so far has focused on the ideological “strategies” in acquiring and maintaining power on the part of the ruling elite or the dominant social group. The central concern of the dissertation is, as I have noted, to investigate the “lived relations” of ideologies as manifested in the social practices of activities inside the Aguateca *grietas*.

Space and Landscapes

In studying the human past and present, space is one important dimension that archaeologists and anthropologists must consider. Ashmore (2002a) has outlined changes in the role of space in archaeology and the differing theoretical perspectives that have shaped how space has been examined. The current trend has shifted to “foregrounding spatial dimensions of culture rather than treating them as background” (Low and Lawrence-Zúñiga 2003:1) and to view space as being “actively inhabited...[wherein] social relations and spatial structure are linked recursively” (Ashmore 2002a:1172). Thus the spatial dimensions of human actions are dynamic processes, forming an important part of history and history-making.

This spatial dimension, when looked at through a wide-angle lens, can be referred to as landscape. I concur with John Barrett who notes that “landscape archaeology which simply maps places according to the role they may have played in the operation of some larger, and entirely abstract, social and economic system misses the point” (Barrett 1999:260). Landscapes are not passive and submissive cogs in the machine of culture or society. Rather I adhere to the view that landscapes are “tensioned, always in movement, always in the making” (Bender 2001:3).

Moreover, landscapes are “work[s] in progress” as they are “never complete: neither ‘built’ nor ‘unbuilt’” (Ingold 1993:162). Landscapes are not simply the backdrop of cultural practices, but rather “social artifacts” (Smith 2003:25; see Ingold 1993:162 for an argument against calling landscapes “artifacts”) that exist “by virtue of [...] being perceived, experienced, and contextualized by people” (Knapp and Ashmore 1999:3).

Landscapes take on their form through processes of incorporation and not of inscription (Ingold 1993:162). That is, Tim Ingold explains, “the process[es are] not one whereby cultural design is imposed upon a naturally given substrate, as though the movement issued from the form and was completed in its concrete realization in the material” (1993:162). To understand how particular places take on meanings, and simultaneously how places shape people’s perceptions and lives, I follow Ingold’s relational approach, in which “both cultural knowledge and bodily substance are seen to undergo continuous generation in the context of an ongoing engagement with the land and with the beings – human and non-human – that dwell therein” (Ingold 2000:133). Setha Low and Denise Lawrence-Zúñiga’s description of landscape as “the social construction of place by imbuing the physical environment with social meaning” (2003:16) only speaks to one side of the coin. The dialectic relationship of people and their surrounding landscape, which include geographic features and constructed buildings, constitutes the process of formation and transformation of the meanings of places in the landscape.

The fluidity of meanings associated with a landscape leads to the multiplicity of both complementary and conflicting meanings, depending on the identity (gender, status, etc.) and interests (political, economic, etc) of the people inhabiting the land. Because a landscape is “never inert, people engage with it, re-work it, appropriate and contest it” (Bender 1993:3; see also Bender and Winer 2001; Blackmore and Ishihara 2003), it is realistic to believe that a multitude of meanings existed at any given time by different sectors of society. Indeed,

landscapes take on meanings through social memory, defined as “the construction of a collective notion...about the way things were in the past” (Van Dyke and Alcock 2003:2), which are themselves variable and mutable, depending on who is doing the remembering and forgetting.

The relational approach I mentioned earlier becomes important in understanding the creation and continuous re-creation of the significances of particular places within the landscape. This significance, when it takes on a religious meaning, is commonly referred to as “sacred.” The concept of “sacred” entered anthropological discourse with Durkheim’s proposition that all religious beliefs are founded on the presumption that all things are either sacred or profane (Durkheim 1915; see also Eliade 1959). According to this theoretical approach, the “sacred” is a force that is internally generated and largely predetermined (Eade and Sallnow 1991), and through its embodiment as rituals, functions to maintain social cohesion and equilibrium within a community (Durkheim 1915). One of the problems with this perspective is that it minimizes the social inequalities within a given society and views communities as closed and isolated entities. More importantly, this dichotomy does not accurately reflect Maya worldview (Aguilera 2007; Leach 1954:12-13; Monaghan 1998). Things are not intrinsically sacred or profane. John Monaghan (1998:48) discusses that, what anthropologists refer to as rituals are better represented as “production,” which he defines as being more than the act involving technology or material utility. As Garrett Cook (1986:139) notes, “[t]he patterns of relating to the supernaturals are the same as those of relating to worldly authorities,” which include fines, bribes, and renting land from the earth spirits (cf. Cook 1986: Note 6). In a similar vein, Miguel Aguilera (personal communication, 2007) suggests that such productions have practical functions in that offerings are provided to the ancestors and gods in order to maintain good social relations with them.

Returning to the discussion of cosmologically significant spatial configurations of civic centers, the spatial arrangement of urban centers in different cultures has been an object of

interest for social scientists. Various coined “sacred complex” (Vidyarthi 1961; 1979), “sacred cosmography” (Wheatley 1971:436), “galactic polity” (Tambiah 1977), “geomantic model” (Carlson 1981), and “sacred geography” (Vogt 1981), the basic notion of this concept refers to the intentional spatial layout of a place, often the civic center, dictated by a cosmologically meaningful model that invokes order and centrality of the ruler and community. In brief, they are landscapes that replicate the culturally specific universe on a smaller scale, or a microcosm. Many polities and kingdoms cross-culturally created spatial arrangements that conform to cosmological templates, which served to justify the polity’s existence and reinforce political authority (Ashmore 1989; Fritz 1986; Geertz 1980; Sugiyama 1993; Tambiah 1976; 1977; Wheatley 1971). Similar arguments have been made for the Maya area. Ashmore (1989; 1991; 1992; Ashmore and Sabloff 2002; 2003) has suggested that monumental architecture at Maya centers was arranged according to a set of site-planning principles founded on a cosmological template, which was, in turn, based on concepts of cosmic directions. The site configuration was an expression of the Maya universe, including the multilayered world, horizontal quadripartite divisions, and unification of these levels and divisions via cyclical movements of deified astronomical entities, primarily the sun. It should be noted that this cosmological template was not evident only in site layout but also to order spaces at smaller scales, such as milpas, households, altars, and caches (Mathews and Garber 2004; Vogt 1976:58).

Following this line of argument, Brady (1997b) proposed that caves figure prominently in settlement configuration. Brady documented several cases at Dos Pilas, including Cueva de Río El Duende which runs directly under the largest structure, El Duende pyramid, at which point is a large underground lake (Brady 1997b:605). The relationship of this complex with the cave is further enhanced by its toponym which refers to water (Stuart and Houston 1994:85), probably to this subterranean lake directly below (Brady 1997b:605). In addition to the examples at Dos Pilas,

Brady (1997b) shows that the placement of major architectural constructions on top of or adjacent to natural or artificial caves is a widespread pattern throughout Mesoamerica. Ethnohistoric documents reveal that the ideal place for settlement had to contain a cave in the center:

The grotto alluded to the mythological place of origin that preceded all intent of migration... These cavities, when ritually dedicated to the divinities, became the pulsating heart of the new town, providing the cosmogonic referents that legitimized the settlers' rights for occupying that space and for the ruler's authority over that site. (García-Zambrano 1994:218).

Even when caves do not naturally occur, artificially excavated caves have been recorded at sites, which attest to the importance and ubiquity of caves in the sacred landscape (Brady 2004; Brady and Veni 1992).

Aguateca follows the pattern noted by Brady (1997b) in that the political capital was constructed over the Grieta Principal (**Figure 1.2**). The Aguateca site core was centered on the Grieta Principal, as structures were built *around* the *grieta*. The Palace Group lies on the eastern side of the *grieta*, the large Main Plaza on the western side, and residential and administrative buildings are situated on both sides. The Grieta Principal symbolized the *axis mundi* that connected the three levels of the universe, serving a central role, quite literally, in the establishment of the capital (Ashmore 1991; Brady 1997b; Eliade 1959). Furthermore, I suggest the site was built according to a cosmological template with directional significances, as outlined by Ashmore (1989; 1991). This template is exemplified in the Twin Pyramid Complexes of Tikal (Coggins 1980), where the pair of pyramids in the east and west mark the points of sun rise and sunset, while the northern and southern structures correlate to the zenith and nadir. According to this cosmological model, the southern direction is associated with the underworld and “down,”

whereas the northern direction is related to the celestial supernatural realm or “up” (Ashmore 1991:201).

In addition, I suggest there is an overlapping microcosm at Aguateca, from the perspective of the people in the upper echelons of society. This second microcosm, or map of the universe (Ashmore 1991:201), involves the elite residential and administrative buildings located within the narrow strip of land between the escarpment and the Grieta Principal (**Figure 1.4**). The *grieta* from this vantage point is on the west where the sun sets into the underworld, and the rising sun across the large lake is seen to the east. Not only is the elite residential area circumscribed by the sun’s daily path, but with this arrangement, the entire site appears to be floating in the lake, a real-life portrayal of earth as a turtle floating in the sea (Miller and Taube 1993; Taube 1988:174-175). As well, the configuration of the buildings themselves further emphasizes the microcosm. The Palace Group where the royalty lived and administered is located in the northern end of the residential complexes at a higher elevation than those to the south as three wide terraces lead up to it. A wide causeway links the Palace Group, with a plaza at the southern end and a high pyramid (Structure M8-34) on the eastern edge by the escarpment. This layout follows Ashmore’s (1991) ideas on a cosmically oriented spatial template in several ways. First, the northern direction refers to the celestial ancestral realm, and the Palace Group adheres to this conceptually and physically. This may also relate to a private (north/up) versus public (south/down) sphere, characterized by varying levels of differential access. The east-west axis is marked by the lake and *grieta*, reinforced by the sun’s daily movement.

It is argued that caves provided the sanctity of the sacred landscape and brought with them a sense of power and legitimacy to the polity and its ruler, due to associations of the cave with concepts of earth and the supernatural (Brady 1989:64-71; 1997b:615). The land selected for occupation mimicked the “mythical moment when the earth was created” (García-Zambrano

1994:217), and the builders themselves replicated the actions of gods creating the universe (Heyden 1981:6). By establishing a community or polity on land that was equated with the beginnings of world creation, “the ruler publicly legitimizes his/her position as the community’s provider and as the mediator between the supernatural and the human world” (García-Zambrano 1994:221). The placement of important architecture in relation to such landmarks also promoted the impression that the polity “had unfolded in a cosmically ordained pattern” (Brady, et al. 1997a:357). The built environment consisting of monumental architecture laid out as a microcosm, in effect acted as an “aesthetic hegemony” by visually and physically articulating “a specific system of domination” as part of “a generalized attempt to appropriate the ahistorical aura and authority of [the supernatural], making specific relations of domination appear timeless and inevitable” (Epperson 1990:31). The built landscape that emphasized the ruling elite’s politically dominant position served to naturalize the unequal social relations.

Although I agree with the notion that Maya settlements were constructed according to cosmological models, I return to my original discussion of practice theory and the relational approach. As reviewed earlier, the people who inhabit a landscape constantly work with and give meanings to important places within the landscape, while the landscape features in turn affect the people’s lives. The process of “incorporation” (Ingold 1993:162), or ongoing engagement between people and landscape, started with the establishment of the Aguateca capital around AD 730, that is the actual construction of the masonry buildings that comprise the site center, and continued on after Dos Pilas was mostly abandoned and Aguateca became the primary capital around AD 760, and ended around AD 810 when Aguateca was attacked and the capital was abandoned. Thus, the construction of the site around the Grieta Principal was only the start of the negotiating process. The central concern of my study revolves around the social practices of use of Grieta Principal and Grieta Rincón. How did the inhabitants of Aguateca engage with the

Grieta Principal and Grieta Rincón? Were there competing or conflicting ideologies that are manifested in the social practices? Through their various practices in the *grietas*, in what kinds of “productions” were the inhabitants involved? Or were there particular spaces with which they were not engaged (i.e., no “ritual” significances)? As ongoing engagements, did the political fortunes and misfortunes of the Dos Pilas - Aguateca dynasty affect the social practices?

Research Approach

As discussed thus far, my primary interests are two-fold: one concerns macroscale processes of the strategic uses of ideology by those in power, while the other looks at the microscale actions of individuals within this power structure. My research set out to examine the nature of *grieta* use, spatial and temporal transformations in *grieta* use, and how practices in the *grieta* correlated with the historical processes of the dynasty and the Aguateca inhabitants. In order to examine these questions, a systematic program of investigation was undertaken at the Grieta Principal and Grieta Rincón. The fieldwork was conducted in June 2004 and February – April 2005 as part of the second phase of the Aguateca Archaeological Project directed by Dr. Daniela Triadan, Dr. Takeshi Inomata, and Licenciado Erick Ponciano. Laboratory analysis was conducted after each field season in Guatemala City. The data collection consisted of three phases: exploration, survey, and mapping; surface collections; and excavations. A thorough exploration and survey of the *grieta* bottoms, as well as ledges and niches, and subsequent mapping of the *grietas* provided the spatial context. The *grieta* map was tied into the surface site map so as to correlate spatial use in the Grieta Principal with structures on the surface site. This phase was important because only the top outline of the Grieta Principal had been mapped by the earlier project. The surface collections served as a starting point in establishing the locations of excavation units. The excellent state of preservation of the archaeological materials, including architectural features inside the *grieta*, proved promising for subsequent excavations. The

excavation program tested morphologically diverse areas within the Grieta Principal and the Grieta Rincón. The results are presented in detail in the following chapters.

Overview of Dissertation Chapters

After outlining my theoretical background in this current chapter, in Chapter 2, I begin with a framework for understanding how this study will contribute to the emerging field of Mesoamerican cave archaeology. Then the religious significances of caves is briefly discussed, followed by present understanding of cave use from ethnohistoric, ethnographic, and archaeological studies. Chapter 3 describes the site setting at Aguateca, presenting an overview of past investigations, the political history, and description of the investigated areas of the *grietas*. Chapter 4 outlines the methods and results of the survey and mapping. Chapter 5 describes the areas surface collected and the results. Chapter 6 describes the findings from the excavations, while Chapter 7 presents the results of the artifact analyses. Chapter 8 discusses the temporal and spatial dimensions of *grieta* use in addition to functional discussions, highlighting feasting as performance and gender relations, manifest in *grieta* use. Chapter 9 concludes the dissertation by articulating the shifts in ritual practices with the political tides of the Dos Pilas - Aguateca dynasty. Finally, four appendices complete the volume. Appendix A is a glossary of terms related to the cave environment. Appendix B describes the “new” ceramic types that were encountered in the *grietas*. Appendix C contains oversize maps of Grieta Principal, including the map that overlays the Aguateca surface structures on top of the Grieta Principal. Finally, Appendix D lists the excavated materials by lot.



Figure 1.1. Map of the Petexbatun area (adapted from Inomata 1997:Figure 1, courtesy of the Aguateca Archaeological Project).

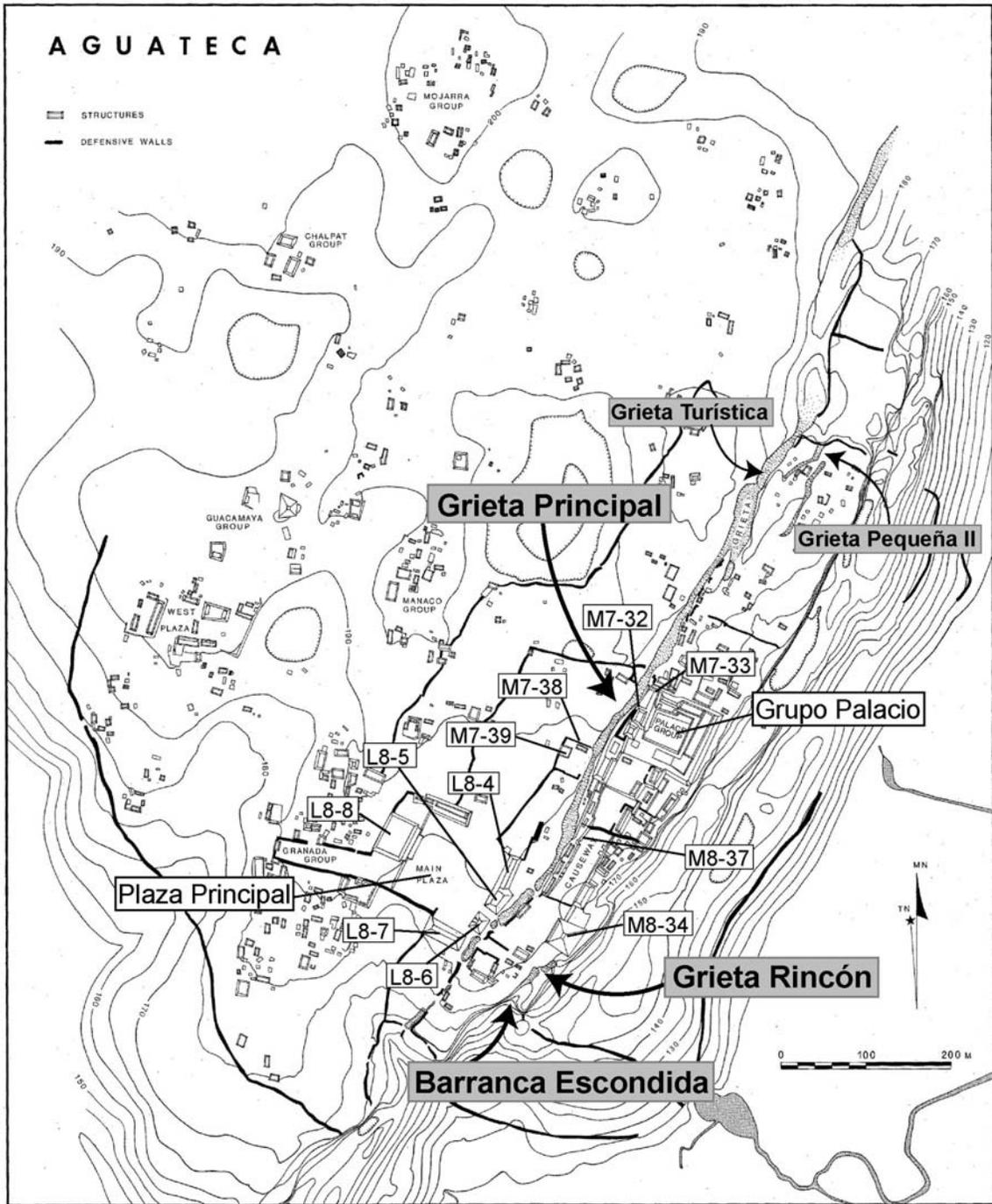


Figure 1.2. Site map of Aguateca showing locations of the Grieta Principal, Grieta Rincón, Barranca Escondida, Grieta Turística, and Grieta Pequeña. Also shown are the structures that are mentioned in the text (adapted from Inomata 1997:Figure 3, courtesy of Aguateca Archaeological Project).

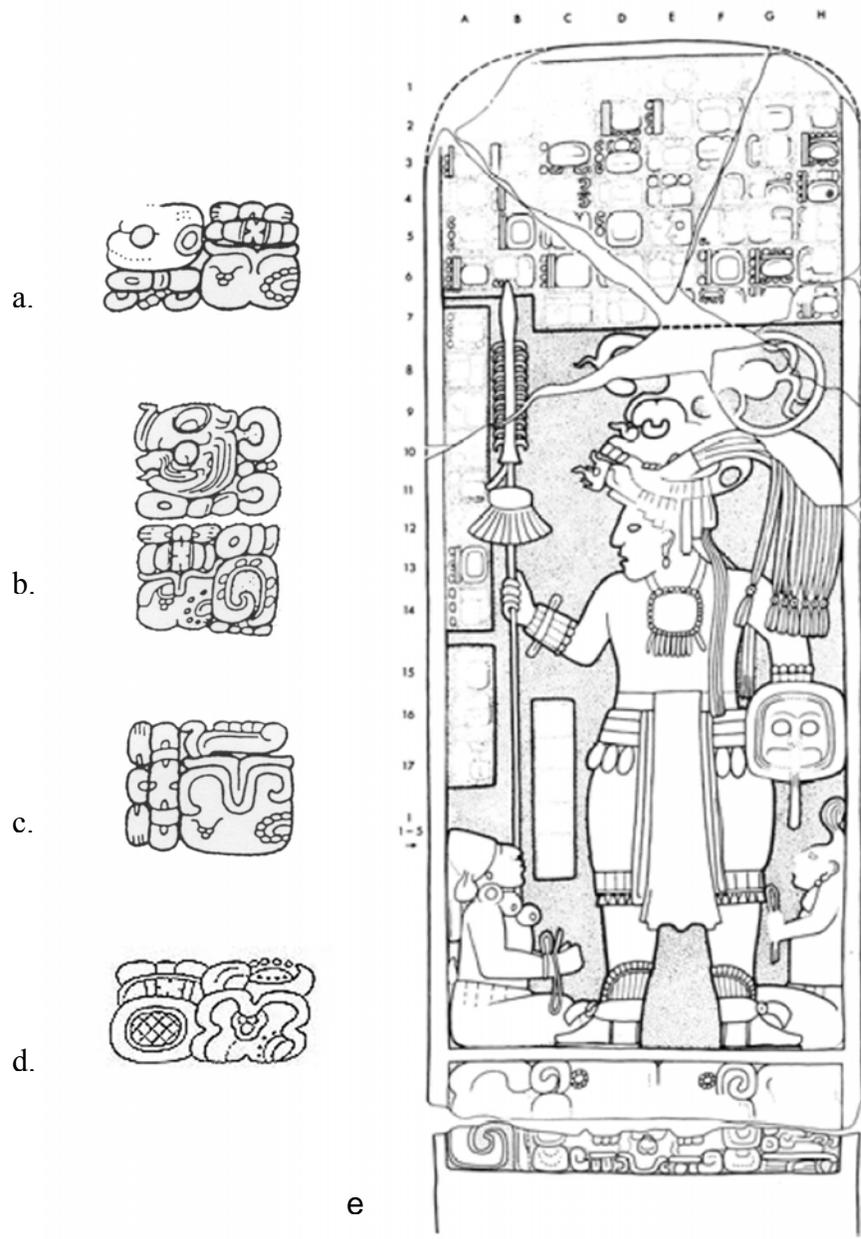


Figure 1.3. Aguateca place name, which reads “K’inich Pa’ Witz” (Stephen Houston, personal communication, 2004). Note the cleft witz that graphically represents the Grieta Principal at the top of the escarpment. a. Aguateca Stela 2; b. Aguateca Stela 1; c. Aguateca Stela 7; d. Dos Pilas Hieroglyphic Stairway 2, East, Step 5; e. Aguateca Stela 6. (a-c are adapted from Stuart and Houston 1994:10, Fig.8; d is adapted from Fahren 2003; e is adapted from Graham 1967:Fig.15, Ponciano and Monroy 2005:Fig.2.9).

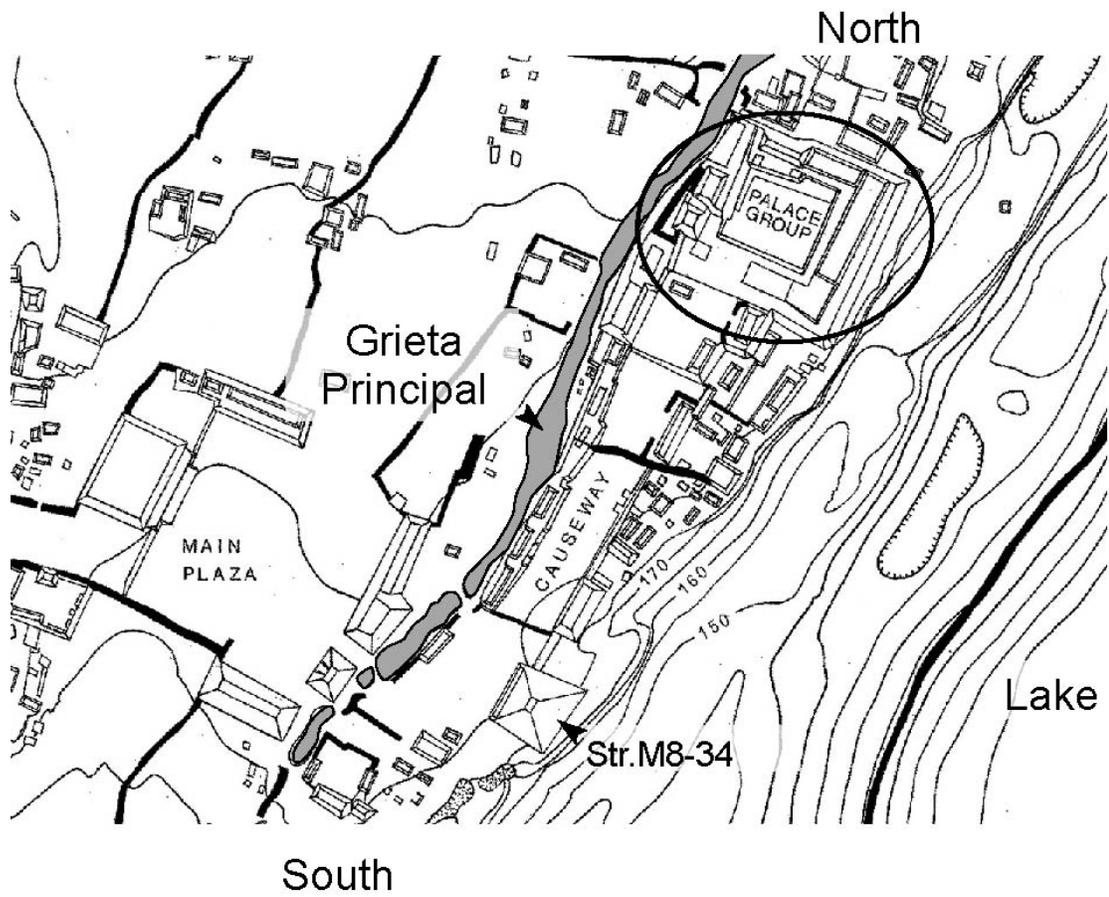


Figure 1.4. One microcosm constructed at Aguateca, with its focus on the elite constituents.

CHAPTER 2

CAVES IN MESOAMERICAN COSMOLOGY

Development of Mesoamerican Cave Archaeology

An historical outline of the field research conducted at cave sites and its interpretations in the Mesoamerican region is traced at length elsewhere (Brady 1989; Brady and Prufer 2005). Thus in this section I focus on the development of Mesoamerican cave archaeology as a subfield of Mesoamerican studies (Brady 1997a; Scott 2007a), situated in American anthropology's theoretical trends (Ishihara 2005; Trigger 2000).

The first Euroamerican explorations of caves in Mesoamerica were documented and published as part of travelogues in the middle of the 19th century by John L. Stephens, with watercolor illustrations by Frederick Catherwood (Stephens 1843). At the end of the 19th century, caves were investigated at Copan, Honduras (Gordon 1898), at Quen Santo, Guatemala (Seler 1901), and in Yucatan, Mexico (Mercer 1896; Thompson 1897). Although these studies presented methodologically sound archaeological data, the widely accepted unilinear cultural evolutionary scheme eclipsed any potential theoretical implications of Maya cave use. According to unilinear cultural evolution, the indigenous peoples of the Americas were relegated to the supposedly less advanced and inferior evolutionary stages (e.g, Lubbock 1865; 1869; 1870; Morgan 1985 [1877]). Moreover, as Ann Scott (2007a) noted, a lack of synthesis of these reports precluded any scholarly discussion that may have elevated the significance of cave studies at the time.

The lack of momentum of cave investigations that started at the end of the 19th century continued and led to a scarcity of cave-related studies during the first half of the 20th century. During the time between the World Wars (1914 – 1950) (Brady 1997a), and the first half of the period of Institutional Domination (1924 – 1970) of Maya studies (Hammond 1982:20), the numerous institutionally supported projects (e.g., Carnegie Institution of Washington's

investigations at Uaxactun, Copan, Chichen Itza, and Tulum; Peabody Museum of Harvard University's study at Seibal) spent little time and interest in caves (Scott 2007a). The investigation by the British Museum at a cave near Pusilha in the 1920s (Gruning 1930; Joyce 1929; Joyce, et al. 1928) is an exception. Nonetheless the cave data were not incorporated into overall project research goals, and in turn, this approach simply served to reinforce the marginalization of cave research in Maya archaeological discourse. Other contemporaneous cave-related work include an expedition led by Gregory Mason funded by the New York Times (Mason 1928), as well as explorations by Thomas Gann (1918; 1929). These works failed to contribute academically because Mason's primary interest lay in collecting museum specimens and Gann did not produce any formal archaeological documentation.

During the Post-War Period (1950 – 1980) (Brady 1997a) and latter half of the Institutional Domination (Hammond 1982:20), excavations of cave sites increased compared to the previous decades. Institutionally supported projects that examined caves include the studies of the cenotes at Mayapan by the Carnegie Institution in the 1950s (Smith 1953; Smith 1954; Stromsvik 1956), the research by E. Wyllys Andrews IV at Balankanche and Gruta de Chac near Dzibilichaltun as part of the Middle American Research Institute of Tulane University (Andrews 1961; Andrews 1965), and the work by Thomas Lee, Jr. in the caves the New World Archaeological Foundation of Brigham Young University (Lee 1967; 1969; 1985; Lee and Hayden 1988). Research was also carried out by individuals independent of larger surface site projects, such as David Pendergast who investigated several caves in Belize in the 1960s and early 1970s (Anderson 1962; Pendergast 1962; 1969b; 1970; 1971; 1974) and Carlos Navarrete who worked in caves in Chiapas (Navarrete 1957; 1960; Navarrete and Martinez 1977). Because they were not part of larger research projects, their work remained separate from mainstream Maya studies. During the late 1960s and 1970s, a school of thought known as processual or

“new” archaeology emerged and increased in popularity, its proponents taking neo-evolutionary, materialist perspectives with particular emphases on ecological and technological adaptations, trade, and subsistence patterns. Despite Binford’s (1962; 1965; also Binford and Binford 1968) initial optimistic inclusiveness, religious beliefs figured little into the scientific and objective research agendas of the processual archaeologists.

According to a reformulation of the developmental history of Mesoamerican cave studies, Ann Scott (2007a) has highlighted historical events and publications of the 1970s and their impact on the direction that cave archaeology was to take in the following decades. Scott demonstrates that the death of three prominent scholars, namely E. Wyllys Andrews IV, Sir J. Eric Thompson, and Dennis Puleston, deprived academia of archaeologists interested in cave research as important religious sites. Shortly before their deaths, Andrews (1965; 1970) had excavated at Gruta de Chac and Balankanche, Thompson (1975) had presented his revised synthesis of cave use, and MacLeod and Puleston (1979) had provided a theoretical discussion of cave use combining ethnography, epigraphy, and their own archaeological fieldwork. These scholars, in addition to Doris Heyden (1973; 1975) through her interpretations of the cave under the Pyramid of the Sun at Teotihuacan, advanced the notions that caves were religious in nature and that archaeological materials in caves represent remains of ritual activities. After her work at Petroglyph Cave in Belize with Dorie Reents-Budet (Reents-Budet and MacLeod 1997; Reents 1980), MacLeod retired from cave investigations, and Heyden did not continue cave-related studies beyond Teotihuacan. Thus without active proponents of cave research, the publications that came out at this time gained little academic currency.

The next couple of decades are defined as the Foundation Period (1980 – 1997) by Scott (2007a) (note Hammond’s periods only go through 1980). This period is characterized by the struggle to gain recognition of the religious significance of caves by Maya archaeologists.

Foremost in forging theoretical advances in Maya studies was Brady's work at Naj Tunich, in addition to contributions by Juan Luis Bonor (e.g., 1987a; 1987b; 1989a; 1989b; 1995a; 1995b; Bonor Villarejo and Sanchez y Pinto 1991) and Andrea Stone (e.g., 1982; 1985; 1987; 1989a; 1989b; 1995) contributions. Mary Pohl and John Pohl's (1983) work should also be noted for their understanding of caves as ritual spaces, particularly suggesting that the *cuch* ceremony may have been performed in caves. Significant for their accessibility and relatively early appearance of book-length publications, Karen Bassie-Sweet's (1991; 1996) books presented the importance of caves in Maya religion, largely based on iconographic studies and ethnographic accounts. The study at Naj Tunich was the first problem-oriented research that spent entire field seasons devoted to cave investigation. However, as Scott (2007a) points out, difficulty in gaining acceptance in the general field was compounded by the fact that the scholars involved were not senior scholars but graduate students and little funding opportunities existed for cave-related projects. A shift occurred in the early 1990s with the advent of Arthur Demarest's Petexbatun Regional Archaeological Project, which assigned resources and research focus on caves as a sub-project, realizing their religious importance (e.g., Brady, et al. 1997a; Demarest 1997).

The end of the Foundation Period and the start of the Recent Period culminated with the organized session, "New Perspectives in Mesoamerican Cave Archaeology," at the 1997 Society for American Archaeology meeting in Nashville. Scott (2007b) argues that this session represents a pivotal point in the development of Mesoamerican cave archaeology as a self-conscious sub-discipline. The session consisted of a mix of junior presenters and more senior scholars, and became the first in a series of annual sessions that focus on Mesoamerican ritual cave uses. Scott emphasizes the importance of the annual archaeology meetings, an arena where new data can be presented by emerging scholars in a timely fashion, without waiting for formal publications. As a student herself, Scott points out that the conferences has also helped to build a sense of

community among the students interested in cave archaeology, who have been from different universities throughout the world, because until James Brady started teaching at California State University, Los Angeles, there was no particular academic institution that served as a research center.

Because Scott's objective in her essays lay in demonstrating the critical role played by the Nashville cave session, as well as focusing on real historical events and not dates of publications, she falls short of discussing another important landmark that took place during the same year of 1997. This is also the year Brady's article "Settlement Configuration and Cosmology" came out in *American Anthropologist* (Brady 1997b). This publication signaled a bold theoretical move toward gaining academic recognition of cave studies, both in Maya archaeology and in American anthropology. Using ethnographic accounts of contemporary Maya understandings of landscapes as a model, Brady (1997b) argues that Classic period political centers were established over caves in order to create a sacred landscape based on cosmological principles, which served to legitimate settlement of a community and rulers' authority. Moreover, the explicit application of cave data to Maya archaeological discourse, namely the role of ideology in settlement patterns, demonstrated that caves were not and should not be treated as entirely separate (hence marginal) research domains from surface sites. In addition, the study provided a firm theoretical foothold in the archaeological inquiry of ideology, which encouraged later cave studies to follow suit. Studies that followed in the past decade are discussed in a separate section below.

Significance of "Cave"

First of all, I must clarify what I mean by "caves." Ethnographic and ethnohistoric data show that what is conceptually important to the Maya people has consistently been the break in the earth's surface, and not necessarily the morphology or the size of this break (e.g., Brady

1997b:603; Sandstrom 2005). Vogt (1981:120) reports that *ch'en* or “hole in the ground” is one of the five types of topographic features sacred to the Tzotzil Maya of Zinacantan, Chiapas, Mexico, and that waterholes, limestone sinks, and caves are classified as *ch'enetik*, places one goes to provide offerings in exchange for rain and good crops (Vogt 1969:387). Vogt (1981:126, 131) also notes that the idea of *ch'en* includes springs, ravines, and canyons as well.

Based on archaeological data in Quintana Roo, Mexico, Rissolo (2001b:351) has noted, “rockshelters were fully incorporated into a generalized emic concept of cave—even in a region where deeper and darker caves exist.” Archaeological investigations in western Belize have led me to conclude the same, that darker caverns and lighter rockshelters were both used ritually albeit probably for differing purposes and perhaps by distinct sectors of society (e.g., social status, gender, etc.) for reasons of access. Therefore, I use the term “cave” to refer to all types of “holes in the ground” including deep caverns, rockshelters, cenotes, sinkholes, and crevices or fissures, regardless of the presence or absence of standing water, running streams, or drip water.

Caves in Place Names

Caves and mountains comprise two of the most important topographic features considered “sacred” (Vogt 1981:122). The importance of such topographic features to community identities is commonly manifested in place names. For example, in the Maya area, ethnohistoric sources (e.g., Roys 1957; Sanmiguel 1994:164) as well as ethnographic accounts (e.g., Villa Rojas 1947:579; Vogt 1976:99) show that cave-related features including water are commonly the namesake of a community. Such connections have been found epigraphically as well (e.g., Palenque’s Classic period toponym was Lakamha, “Large Waters”) (Vogt and Stuart 2005). In fact, Aguateca’s place name, K’inich Pa’ Witz, consists of a *witz* (“hill/mountain”) with a split top, graphically showing the Grieta Principal at the top of the mountain (Stuart and Houston 1994:9, 12) (see **Figure 1.3**). This is part of a pan-Mesoamerican pattern, as Nahuatl place names

frequently incorporate *oztotl* (“cave”) (Heyden 1975:134), *altepetl* (which means “town” or “city” but literally is “water-filled mountain”) (Heyden 2000:176; Stone 1995:33), or *tepec* (“mountain”) (Taube, personal communication, 2007). The fact that the symbol or word for cave or otherwise cave-related topographic feature is incorporated into place names is an indication of communities’ identification with cosmologically significant features.

Caves in Maya Religion

As openings in the earth’s surface, caves figure prominently in Maya mythology associated with the earth and with concepts of creation, life, and fertility. Bassie-Sweet (1991), Brady (1989), and Stone (1995) have surveyed the literature on cave associations with these concepts, so I summarize them only briefly here. Caves are the portals not only into the lowest level of the three-tiered universe, the dark and dangerous underworld, but more importantly, access ways into the mountain and earth, as caves were conceived as the hollow, inner parts of mountains (e.g., Miller and Taube 1993; Schele and Freidel 1990:60). Thus, they are associated with the earth and the forces that sustain, and at times, devastate life. Horizontally, cave features are often the center point of the quadrilateral Maya cosmogram, the *axis mundi*, where one can traverse across the various levels of the world and communicate with supernaturals (e.g., Heyden 1981:12; Schele and Miller 1986:42; Thompson 1970:195). Ethnographic research has shown that caves are the abodes of various gods, among them earth gods and rain gods, or dwarfs who have control over rain, thunder, clouds, and winds (e.g., Brady 1988:53; Christenson 2001:79, 87; Gossen 1974:21; Hermitte 1964:43, 54; Redfield 1941:118, 239; Redfield and Villa Rojas 1934:205; Thompson 1930:141; 1970:251-275; Vogt 1969:387; 1976:16-17). The lightning and rain god Chaak is commonly depicted standing atop or within cenotes in the Dresden Codex (Anonymous 1998) and other Maya codices. The first maize, Mesoamerican people’s staple food, was found in a crevice of the rock of sustenance, hence a cave (Hermitte 1964:39-43; Taube

1986; Thompson 1970:348-354; Watanabe 1992:67) and with this maize the first humans were created (Gossen 1974:335; Tedlock 1996:145-146).

Iconographic and ethnographic sources indicate that the cave is compared to the womb or vagina, from which life sprouts (Brady 1988:52; Heyden 1975:134; 1991; Hunt 1977:107-109; Sandstrom 2005; Taube 1986:76). The cave is also a place of emergence as the Popol Vuh describes the K'iche' ancestors to have originated from Wuqub' Pek, Wuqub' Siwan ("Seven Caves, Seven Canyons") (Tedlock 1996:151-152). Likewise, Chicomoztoc is a widely known cave from which various Nahua groups are believed to have emerged (e.g., Tolteca-Chichimeca 1947:xxxv-xxxvi). Taube (1986:74-75) has argued that the Pueblo kiva and the Postclassic wind temple dedicated to Ehecatl-Quetzalcoatl are structurally and symbolically similar, both replications of the cave as a place of emergence. In fact, caves and the mountains of which they are a part are alive (Freidel, et al. 1993:187), and the wind that blows through the cave mouth is transfigured into the breath of the mountain (Garza 2003b).

Ethnohistoric and Ethnographic Records of Cave Use

With the multitude of meanings attached to caves, ethnohistoric sources suggest that a variety of rituals were conducted within cave features. Landa (Tozzer 1941:180-182) and Roys (1967:173-174) document rain-calling rituals involving human sacrifices in the Cenote of Sacrifice at Chichen Itza. Tozzer (1941:180) cites a testimony in which the sacrifice consisted of taking the hearts out of boys and burning the hearts as offerings, then subsequently throwing them into the cenote. This method of sacrifice at cenotes appears to have been a common practice in the 16th century in the northern lowlands, particularly at Tabi, Yaxcaba, Sotuta, Tibolon, Kamchunup, Suitunchen, Chichen Itza, and Mayapan (Tiesler 2005; Tozzer 1941:180). Other purposes of cenote ritual are noted to include prognostication and placation after a hurricane (Tozzer 1941:181-182). An eighteenth-century document from San Andrés Larráinzar recorded

festival officials going into caves to pray and make offerings of turkey, incense, and candles to *yajual balumil*, or *el dueño de la tierra*, so that he would not send bad weather during the festival (Sanmiguel 1994). Sanmiguel (1994:168) further suggests that divinatory and curing ceremonies were practiced in the cave as well as public ceremonies by the festival officials. A review of ethnohistoric sources on Cozumel shows that the island was an important pilgrimage site revolving around the reverence of Ix Chel (Patel 2004); altars and religious structures were built within, over, or adjacent to caves and cenotes, and these shrines were accessible via a *sacbe* (“white road” in Classic Maya, signifying causeway) network as part of a pilgrimage circuit.

Ethnographic references to cave rituals are numerous. A ceremony performed at Balankanche was documented by Barrera Vásquez (1970:72), referred to by the *h-men* as the *Tsikul t’an ti’ yuntsilooob* (“Reverent Message to the Lords”) in order “to pray that there will be no danger for those who have penetrated these sacred places without permission of the gods.” Through the course of the ritual, however, it became clear that this was a *chachaak*, or rain-calling ceremony. Likewise, the K’in Krus ceremonies for the waterholes in Zinacantan are conducted at the end of the dry season to insure sufficient rains (Vogt 1976:99-109). During this ceremony, in which about 70 members, or one-fifth, of the waterhole group participated with designated roles, the waterhole that provides all water needs for the hamlet of Paste’ is physically cleaned, followed by offerings of candles, incense, liquor, and accompanied by prayers by the shamans. Interestingly, during the latter part of the ceremony, a procession goes to pray and make further offerings to the “C’ul Krus Viz” (Holy Cross Mountain), the source of the water and the residence of the local Earth Lord (Vogt 1976:108). The Kakchikel of Tecpán, Chimaltenango make pilgrimages to the cave just below the summit of the most powerful mountain of Pulchich to conduct rituals to the *k’u’x* (“center” or “soul”) of the mountain, as evidenced by the mounds

of multicolored wax from the burned candles and soot-blackened walls and ceilings (Fischer 2001:155).

Sandstrom (2005) documents a pilgrimage to two caves at the summit of a distant mountain, Postectli, by a group of Nahua and Otomí people in northern Veracruz, Mexico. The pilgrimage was intended to assuage the water spirit and ask for the right amount of rain, because the disastrous drought had been caused by “rich people failing to respect the earth...soiling or polluting the earth through their activities and neglecting to enter into proper exchange with the earth spirit in compensation” (Sandstrom 2005). Springs and wells are visited prior to and during the pilgrimage where offerings are dedicated to the *apanchanej*, the water spirit, and her helpers. Near the summit are the two caves: one is a cleft in the rock, the home of *tlatomoni*, the spirit of thunder and the water spirit’s assistant, while the other is a vertical slit in the mountainside, the home of *apanchanej*. The pilgrimage was concluded once the participants made their offering to *tonatij*, the sun spirit, at the summit.

Another function of ceremonies, witchcraft, appears to have been connected with cave contexts, as described for the Tzotzil in highland Chiapas (Uke 1970), the Kanjobal in Santa Eulalia of highland Guatemala (La Farge 1947:128), and the Chontal in Oaxaca (Turner 1972:70-71). At Zinacantan, witchcraft (*Ak’ Chamel*) and counter-witchcraft rituals are conducted at crosses in caves near the hamlet where the participants live (Vogt 1969:406-410). A myth recorded by Barbara MacLeod in 1974 refers to a cave near the Arco de San Jose in the Tojolobal region in Chiapas, through which one can traverse through an underground river to a place “where the sun shines and many fruit trees grow;” although the fruit may be picked and eaten, it will evaporate if one attempts to bring it out (MacLeod and Puleston 1979:73). There is evidence of modern rituals in the cave since concentrations of pine needles, hearths, and smoke-blackening of the ceiling were encountered (MacLeod and Puleston 1979:73). At the most important cave of

Santiago Atitlán, called Paq'alib'al ("at the place of revelation or appearance"), *ajkuns* (shamans) go to petition for rain or to speak to the ancestors (Christenson 2001:87). Barrera Vásquez (1970:77-78) also documents a case in which a cenote had been "profaned" a ritual offering had to be made to appease the *yumtzilob* ("lords").

Interestingly, caves are not homogeneous spaces, since rituals for different purposes are conducted in their appropriate caves. For example, the "Marimba cave...is where marimba players go to ask that their marimba plays well and does not get spoiled. To the cave of Ch'en, one goes to ask for good cattle and other animals. At the cave of Campanatou, one asks for money and good tools" (Hermitte 1964:56). Sandstrom's (2005) account described above notes the two caves as the homes of complementary but separate spirits, also supporting differential use of sacred cave places. At Zinacantan, different mountain shrines are visited according to the type of ritual conducted (Vogt 1976), and we may conjecture that caves, as parts of mountains, are differentiated in the same manner. A more detailed analysis of differential use of space within caves is likewise needed, though Stone (2004) begins such a study.

Archaeological Evidence of Cave Use

Thompson's (1975:xiv) functional typology of cave use was the first attempt to synthesize ethnographic, ethnohistoric, and archaeological studies on ancient Maya cave utilization; his list of uses includes (1) sources of drinking water, (2) sources of "virgin" water (*zuhuy ha*) for religious ceremonies, (3) religious rites, (4) burials, ossuaries, and cremations, (5) art galleries, (6) depositories of ceremonially discarded utensils, (7) places of refuge, and (8) "other uses." Until recently, scholars would uncritically apply this laundry list to all caves, particularly the second use of caves as sources of *zuhuy ha*. For example, when ollas are encountered in caves, it was usually assumed that they were used to collect *zuhuy ha*, either from bodies of water in the cave or from drip water from stalactites. Another study aimed at using a

multidisciplinary approach is found in Pohl and Pohl's work (1983), which reconstructs the year-renewal ritual of *cuch* ("deer"), by comparing scenes from Classic period polychrome vessels to ethnographic and ethnohistoric descriptions of the ceremony, and subsequently correlating artifacts to suggest that this ritual was performed in caves in pre-Columbian times. However intriguing the reconstruction, this approach selectively used circumstantial evidence from a variety of cave sites and pieced them together, ignoring contextual information that is vital in any archaeological investigation. For example, the presence of deer bones in many caves is presented as evidence of the *cuch* ceremony (Pohl and Pohl 1983:32), but could just as well be remnants of offerings or feasting activities associated with other ceremonies. Pohl and Pohl (1983:31-32) also list the finding of Maya blue pigment in caves to support their theory, apparently because Diego de Landa's description of a pole-raising ceremony mentions anointing blue pigment on a deer skull and an arrow.

It is only in the last two decades that systematic archaeological investigations that focus on cave sites have emerged. Bonor (1989b) presented a thorough survey of more than 30 caves in the Yucatan Peninsula, archaeologically documenting the ritual use of the caves. In contrast, Brady (1989) focused on Naj Tunich, Guatemala, a massive cave with extensive architectural modifications, tombs, and hieroglyphic inscriptions. He posits that this cave was probably a pilgrimage site and that the inscriptions record visitation by elites (Brady 2001). Andrea Stone (1995) examined the inscriptions and the paintings in Naj Tunich. Brady's (1997b; Brady, et al. 1997a) study in the Petexbatun region, Guatemala, investigated the physical and symbolic relationship of caves and surface architecture at Dos Pilas and is discussed further in following sections. Patricia McNany's (1998; 2002; McNany, et al. 2004; McNany and Thomas 2003) project surveyed caves in the Sibun River Valley of Belize as part of the settlement study of the area. The documentation and investigation of 17 cave features (15 caves, 2 rockshelters) in the

cone karst, compared to the 22 settlements of varying sizes in the alluvial terrace, provided data to examine cave uses by inhabitants that span the social spectrum (Peterson 2006:14). Karen Bassie-Sweet's (2002) study at Jolja' Cave, Mexico, one of the few known caves to contain hieroglyphic inscriptions, employed an ethnoarchaeological approach, documenting the modern rituals conducted at and myths relating to the cave. Jaime Awe's (Awe 1998a; Awe 1999; Awe and Audet 2003; Awe and Griffith 2002; Griffith, et al. 2000; Ishihara, et al. 2001) ongoing project in western Belize, of which the author has been a part, has intensively investigated eight caves and conducted brief surveys at numerous others. The regional approach of this project is designed to determine "temporal, social, and regional differences in the use of caves in the Maya lowlands" (Awe 1998b:2).

Several unpublished thesis studies have focused on different aspects of ancient cave use which include: Dorie Reents' (1980) early study on the ceramics at Petroglyph Cave, Belize; Reiko Ishihara's (2000) study on the ceramics at Actun Chechem Ha, Belize; Arturo Montero García's (2000) study of more than 140 artificial rockshelters, on Cerro de la Estrella, Mexico, known for the last ethnohistorically documented New Fire ceremony; Holley Moyes' (2001) GIS analysis of the spatial distribution of artifacts in the Main Chamber of Actun Tunichil Muknal, Belize; Christina Halperin's (2002) study of Actun Nak Beh and its political relation to Cahal Witz Na, Belize, connected to each other by a *sacbe*; Christopher Morehart's (2002) study of the paleoethnobotanical remains from caves in western Belize; Vanessa Owen's (2002) study of mortuary practices at Barton Creek Cave, Belize; and Shankari Patel's (2004) study of Cozumel, Mexico, as a pilgrimage site.

Since the beginning of the new century, four dissertations have emerged from archaeological cave research: Dominique Rissolo's (2001b) regional survey of the caves in Quintana Roo, Mexico; Keith Prufer's (2002) study of caves and rockshelters and nearby

settlements in Toledo, Belize; Polly Peterson's (2006) excavations in the caves surveyed in the Sibun River Valley, Belize; and Holley Moyes' (2006) analysis of temporal and spatial changes in ritual use by using radiocarbon dates as a proxy at Actun Chechem Ha, Belize. Additionally, though not directly working in caves, Karl Lorenzen (2002) examined Postclassic Yukatek miniature shrines, many of which contained speleothems, suggesting that the shrines were part of rain and agricultural fertility rituals. The increasing number of systematic studies on ancient Mesoamerican cave use has pushed forward our general knowledge of the theme, yet at the same time the complexity of the social and political dimensions concerning cave usage clarifies the need for further inquiries, in an attempt to attain a more robust understanding of caves and Mesoamerican society.

CHAPTER 3

SITE SETTING

Past Investigations at Aguateca

Aguateca is a Classic period Maya center situated along the Petexbatun River in the Pasión River drainage in the Department of El Petén, Guatemala (see Inomata 1995:25-49 for detailed descriptions of the archaeological and natural settings) (see **Figure 1.1**). The site is said to have been “discovered” in the late 1950s (Inomata 1995:29-30). The first archaeological observations were published by Ian Graham, recording stone monuments and producing a sketch map of the site center (Graham 1967). Later visits were made by archaeologists whose primary interests lay in Dos Pilas (Houston 1987; Navarrete and Lujan Munoz 1963). Epigraphic research revealed that Aguateca was founded as the twin capital of Dos Pilas in the Late Classic period by an intrusive dynasty related to the Tikal dynastic line (Houston 1992; Houston 1993; Houston and Mathews 1985) (see **Table 3.1**). Intensive archaeological investigations were initiated in 1990 by Takeshi Inomata for his doctoral research, as part of the Petexbatun Regional Archaeological Project directed by Arthur Demarest. Inomata’s research focused on understanding the Classic Maya collapse as excavations revealed that the site center had been burned and rapidly abandoned (Inomata 1995; 1997; Inomata, et al. 1998; Inomata and Stiver R. 1998). The Aguateca Archaeological Project was established in 1996 to continue investigations at the site, exposing several additional elite residential structures (Inomata 2001a; Inomata, et al. 2001). The first phase of this project consisted of four field seasons and four associated lab seasons.

The current study was conducted as part of the second phase of the Aguateca Archaeological Project, directed by Dr. Daniela Triadan, Dr. Takeshi Inomata, and Licenciado Erick Ponciano. The second phase of the Aguateca project was conducted in 2004 and 2005 with a particular objective to examine the social processes involved in the foundation of the polity.

Additionally, the project investigated other questions such as non-elite household organization at Aguateca (compared to the elite households investigated during the first phase) and at adjacent sites in the context of transformation of political powers in the area (Ponciano, et al. 2004b; 2005).

Political History of Aguateca

Aguateca served as the twin capital of the dynasty that ruled at Dos Pilas and Aguateca. The political history of Aguateca is largely understood through the epigraphic studies of texts recorded on stelae, altars, and other buildings such as stairs and benches at Dos Pilas and Aguateca, in addition to some monuments from other sites (**Table 3.1**; see **Table 3.2** for list of rulers) (Boot 2002; Fahsen 2003; Houston 1993; Houston and Mathews 1985; Martin and Grube 2000; see also Inomata 1995:51-54; 1997:341-342). Until the recovery and decipherment of additional steps on Hieroglyphic Stairway #2 of Structure L5-49 at Dos Pilas, the site was understood to have been founded by an exiled royal member of the Tikal dynasty resulting from a factional dispute (Martin and Grube 2000:56). The Hieroglyphic Stairway #2, however, reveals that the founding ruler of the Dos Pilas – Aguateca dynasty, B'alaj Chan K'awiil, was sent by Tikal to the Petexbatun area to establish a Petexbatun outpost to control the river trade routes from the Usumacinta basin and the highlands (Fahsen 2003).

Based on a re-examination of the stairs, Guenter (2003) argues that B'alaj Chan K'awiil underwent a series of pre-accession rituals at ages six (AD 632), nine (AD625), and eighteen (AD 643), as a legitimate prince of Tikal. At age 21 in AD 648, B'alaj Chan K'awiil captured and killed a lord (king?) of Tikal. Then, two years later in AD 650, Calakmul's ruler Yuknoom Ch'een II attacked Dos Pilas, and later Tikal in 657. Rather than killing B'alaj Chan K'awiil, he is made an ally of Calakmul, and is forced to flee to Aguateca, which at this time probably had few buildings in place (Inomata, personal communication, 2007). This is the earliest known mention

of the Aguateca place with the graphic depiction of the *grieta* in the *witz*, or mountain (see **Figure 1.3d**). This is suggestive of the importance of the Grieta Principal already at this time prior to Aguateca becoming a flourishing center. The *grieta*'s recognition as a cave feature is perhaps demonstrated in the form of the *witz* as a four-lobed quatrefoil. Tensions between B'alaj Chan K'awiil and his brother Nuun Ujol Chaak who became the new king of Tikal materialized when the latter attacked Dos Pilas in 672, forcing the exile of his brother.

Close to 70 years of age, B'alaj Chan K'awiil's last appearance was recorded on Aguateca Stela 5, attending a "scattering" event for a period-ending ceremony in AD 692. B'alaj Chan K'awiil's son, Itzamnaaj B'alam inherits the throne, but his reign is cut short by Itzamnaaj B'alam's death in AD 698, lasting only a maximum of 6 years. In the same year, Itzamnaaj B'alam's younger brother, Itzamnaaj K'awiil who is mistakenly referred to as "Ruler 2," took office. His construction efforts focused on an outlying group of structures known as El Duende at Dos Pilas, which is a large pyramidal building built on a modified hill over a natural cave (Brady, et al. 1997a). Moreover, on the five pairs of stelae and altars at Dos Pilas that document victories over unknown persons in 717 and 721, a ritual circuit involving a stela being erected at Aguateca is recorded. This would be the first known stela to be dedicated at Aguateca, though it does not match any known monuments at Aguateca (Eberl, personal communication, 2007). At this time, the Dos Pilas – Aguateca dynasty is on friendly terms with Tamarindito, the earlier dynasty that controlled the area during the Early Classic period, as the text of the Hieroglyphic Stairway 3 at Tamarindito records Itzamnaaj K'awiil's performance of an event under the auspices of Tamarindito Ruler 26 (Houston 1993:114). In addition, Itzamnaaj K'awiil is named posthumously on a monument at Arroyo de Piedra, the twin capital of Tamarindito. On this stela, he is mentioned as "overlord" of a local ruler, whose mother is from Dos Pilas and father is from Tamarindito – Arroyo de Piedra. On the other hand, in spite of antagonistic relations between Dos

Pilas and Tikal, Itzamnaaj K'awiil's death is recorded on a carved bone that was deposited in the tomb of Tikal's contemporary ruler at the time, Jasaw Chan K'awiil I (Ruler A) (Houston and Mathews 1985:15; Jones 1977:35; Martin and Grube 2000:59; Proskouriakoff 1973:173).

The next ruler of an unknown name, referred to as "Ruler 3," reigned for a little over a decade. During his time in office, he captured a Seibal lord in AD 735, which was important because it led to the control of Seibal by the Dos Pilas dynasty for up to sixty years (Lounsbury 1982:154, 165). This victory was commemorated with two stelae, one at Dos Pilas and the other at Aguateca, suggesting that by this time, Aguateca had already developed into Dos Pilas' twin capital (Martin and Grube 2000:61-62). Additionally, his diplomatic relations can be observed on Dos Pilas Panel 19. This panel portrays a young boy named *ch'ok mutal ajaw*, "Prince of Dos Pilas," in the act of bloodletting, and is flanked by "Ruler 3" and his wife Lady GI-K'awiil of Cancuen, as well as a lord from Calakmul, who may have been the guardian of the boy, and another high-ranking figure (Houston 1993:115; Martin and Grube 2000:61).

Only days after the death of "Ruler 3" in AD 741, K'awiil Chan K'inich took office. During his conflict-ridden reign of twenty years, he captured lords of several sites including Yaxchilan and Motul de San Jose while maintaining ties with Tamarindito and Seibal, as he conducted period-ending ceremonies at these sites (Fahsen 2003). However, in AD 761, he was exiled (and perhaps killed), probably by Tamarindito ruler Chanal B'alam. After this event, Dos Pilas was mostly abandoned.

Nine years later, in AD 770, Tahn Te' K'inich acceded to the throne at Aguateca, as it became the primary capital of the dynasty (Inomata 1995:53). He continued to exercise some level of political power in the area, as he fought a battle in AD 778 (Stela 19) and presided over a "seating" ceremony at La Amelia in AD 802. Many of the construction programs at Aguateca can be attributed to him, such as Structures L8-6 and L8-8 of the Plaza Principal (Main Plaza in

Spanish) and Structure M7-32 of the Grupo Palacio (Palace Group in Spanish) (Ponciano, et al. 2004a; Ponciano and Monroy 2005). Structure L8-6 may have been his dynastic temple, in front of which he erected two stelae, Stela 6 and Stela 19 (Ponciano and Monroy 2005:2-10). Construction of Structure L8-8, probably intended as a funerary temple for Tahn Te' K'inich, was not completed due to mounting political unrest in the region (Inomata, et al. 2004), and the defensive walls throughout the site were hastily built around this time (Inomata 1995:838). The unfinished carving of Altar M associated with the structure was likely meant to commemorate the *k'atun* ending of 9.19.0.0.0, or AD 810 (Inomata, et al. 2004:807). It is around this time that Aguateca was attacked and buildings in the site core were burnt, presumably by invaders. The scarcity of Terminal Classic ceramics at Aguateca suggests that the site was abandoned by around AD 810.

Geological Formation of the *Grietas*

The *grietas* that characterize the topography of the Aguateca area, including the Grieta Principal, Grieta Rincón, Grieta Turística, Grieta Pequeña I, and Grieta Pequeña II, can be classified as limestone karst features, according to a geomorphological assessment by geologist Bev Shade (Ishihara, et al. 2004:6.11) (see **Figure D.1**). Shade (Ishihara, et al. 2004:6.11) notes that these *grietas* are “a system of solutionally enlarged stress-release fractures, whose orientation is generally controlled by local landforms.” Although the effects of any tectonic activities is not well understood, nonetheless the *grietas* “currently function as karst features...[contributing] to the river and springs at the base of the escarpment in an integrated karst drainage system” (Ishihara, et al. 2004:6.11). Karst is defined by Jennings (1985) as “[t]errain with special landforms and drainage characteristics due to greater solubility of certain rocks in natural waters than is common.”

Shade also examined and produced a geological explication of the airflow observed throughout the Grieta Principal (Ishihara, et al. 2004:6.12-6.13). Although airflow in caves is a common phenomenon, it is not completely understood, in part because site-specific factors take effect. Among several possible causes, Shade suggests that the presence of multiple entrances at differing elevations is the driving force behind the airflow in the Grieta Principal (Ishihara, et al. 2004:6.12). The ground surface at the northern entrance of the Grieta Principal is approximately 30 meters higher than at the southern entrance. Air entering the *grieta* at the northern entrance cools and sinks, flowing toward the lower, southern end. Because the *grieta* is open to the surface for most of its length, air enters along the length of the *grieta* and is added to the already flowing air, gaining speed as it moves southward. However, as Shade notes and as I have observed on Chill Hill, there is variation within a day, between the hottest times of the day and the cooler night. After midday when the surface air has heated, the increased temperature difference between above surface and the *grieta* interior strengthens the airflow, much like water flowing fast down a steep slope (hydraulic gradient) (Ishihara, et al. 2004:6.12).

Site Description of Grieta Principal

The Grieta Principal is a deep and long chasm that runs northeast – southwest through the center of the site of Aguateca (see **Figure 1.2**). It measures approximately 860 m long, 10 – 70 m deep, and 1.5 – 15 m wide (**Figures 3.1, C.1**). Structures were built around the *grieta*, with palace groups located on the eastern side of the *grieta*, the Plaza Principal (Main Plaza in Spanish) on the western side, and elite residential groups on both sides.

This section describes the general morphologies of the five primary areas of investigation, which were the basis for distinct investigative suboperations. Each suboperation was defined as focusing on a contiguous set of passages and chambers confined by natural morphological features of the *grieta*. Certainly, there are additional areas that were not

investigated by means of excavation, but this does not necessarily signify an absence of archaeological evidence in these areas. Investigations in the Grieta Principal were concentrated in five areas (**Figure 3.1**): the Hidden Jar Area (Suboperation 31A), the Two Owls Area (Suboperation 31B), the Southern Entrance Area (Suboperation 31C), the Chill Hill Area (Suboperation 31D), and the Windy Valley (Suboperation 31E).

Hidden Jar Area (Suboperation 31A)

The Hidden Jar Area (Suboperation 31A) consists of Chamber 2 (Inner Chamber), the Alcove, and Chamber 4 (Outer Chamber) (**Figure 3.2**). Chamber 2 measures approximately 32 m long by 8 m wide, and its ceiling is 7 – 10 m high. At the time this chamber formed, a slab, approximately 15 m long by 5 m wide, spalled off the eastern *grieta* wall and stabilized, where it leans against the western *grieta* wall today (**Figure 3.5**). Therefore, this chamber is virtually ceiled by this spall. Two fairly level, limestone slabs (each about 5 m long, 2 m wide) lay oriented roughly north – south, bisecting the chamber, and are probably part of the ceiling that broke off along the horizontal bedding planes of the bedrock. Wall 4 is constructed on the northern end of these limestone slabs, its top course level with the top of the slabs. A muddy slope with numerous loose limestone rocks leads down into the northern end of the chamber; the rest of the chamber is littered solely with limestone rocks.

To the northeast of the large, central rocks is a possible platform where a partial Pantano Impressed jar was found wedged behind a spalled part of the *grieta* wall (**Figure 3.3**). The flat ceiling of this platform area, a natural product of the bedding plane, is covered with small stalactites; the floor is covered with limestone rocks and the northern end of this platform area is enclosed by breakdown rocks.

The Alcove is a low passage that extends to the northwest of the chamber (**Figures 3.2, 3.4**). It inclines to the north and a small opening connects to the more exposed area north of this

chamber. There is active speleothem to the south of this passage, as well as stalactites along the west *grieta* wall, some of which appear broken (see Appendix A for definitions).

Chamber 4, or the Outer Chamber, lies north of the Hidden Jar Chamber. One of the easier access ways into the Grieta Principal is located at the northeastern side of this chamber next to Structure M8-42. This chamber is one of the more open areas in the *grieta*, with much vegetation, measuring about 16 m wide and over 20 m long. A steep slope leads northward from this chamber toward the rest of the Grieta Principal. It is at the top of this slope in the western *grieta* wall that there is a small niche about waist level which may have been modified and possibly used as an altar-like area.

Two Owls Area (Suboperation 31B)

The Two Owls Area (Suboperation 31B) consists of Chamber 1, Passage 1, and Passage 2 (**Figure 3.6**). Chamber 1 measures about 2 – 4.5 m wide, tapering more in the northeastern end. The *grieta* walls are vertical but there is a ledge about 25 m above the floor that virtually encloses the chamber. The chamber lies in the twilight zone as sunlight reaches the chamber from both the southern and northern ends that connect to inclining passages that are more open to the surface. In the same vein, rain, leaves, and other organic material from the surface enter from these same passages into the chamber. However, it is notable that much of this fallen material appears to not reach the central part of the chamber near Wall 2 and Step 1, even though it is the lowest point in the chamber. This was an important observation because this suggested that not much debris from the surface site had accumulated. The chamber floor, for the most part, is covered with varying sizes of limestone rocks and many tree trunks, while a dark brown mud covers the central area with few rocks. The western *grieta* wall is covered with speleothems but there are no prominent stalactites. Some water drips along the western cave wall, south of Wall 2. When it rains, minimal rainwater splatters on the incline above the possible terraces.

Passage 1 (Stoop Passage) extends about 20 m to the southwest of Chamber 1, and is bordered in the north by Wall 1. In fact, there are two parallel passages that extend in this direction. The westerly passage is a steep slope that is entirely exposed and covered with much organic debris from the surface and rocks, its highest point about 10 m above the eastern passage. Two young owls, the namesake of the chamber, were encountered living along the *grieta* walls of this western passage. The eastern passage is Passage 1. Enclosed by a naturally flat ceiling, the passage lies in the dark zone. For the most part, the ceiling is relatively low and one must lower the head when passing through. This passage measures approximately 3.5 m wide and 18 m long. An uneven surface of mud deposit comprises the western side of the passage while the floor along the eastern cave wall is distinctly flat. Water drops were observed on the ceiling but no stalactites had formed.

Passage 2 (Rocky Passage) continues northeast from Chamber 1. It measures approximately 9 m long, 1 m wide, and 0.5 – 1 m high, and ends as the ceiling drops at the northern end. The western wall and the floor of this passage consist solely of rocks with no mud deposition, as the passage is sheltered by a low ceiling. It appears that the rocks extend into the western passage that connects to the northern parts of the *grieta*.

The Two Owls Area contained the highest concentration of architectonic constructions (**Figure 3.7**). This spatial modification suggests the importance placed on this space to the ancient users. It is noteworthy that the Plaza Principal (Main Plaza), a large public plaza, is located on the surface site adjacent to this area (see **Figures 1.2, 8.9, C.2**).

Southern Entrance Area (Suboperation 31C)

The Southern Entrance Area (Suboperation 31C) consists of the slope from the southern *grieta* entrance (Passage 7), the Upper Chamber (Chamber 3), and the steep slope (Passage 4 or Nasal Passage) where Wall 3 is located (**Figure 3.8**). The entrance slope measures about 2 m

wide and 30 m long, including the first 15 m where vegetation grows; it is entirely exposed at the top for the first 15 m, and the floor is comprised of breakdown rocks. Possible steps were observed, but a secure identification is difficult due to the loose rocks on the surface. At the base of the slope, a relatively flat area extends for about 5 m, and at that point, one must climb about 5 m up a series of narrow ledges up through a small opening, named Pozo del Brad, to arrive at the Upper Chamber.

The Upper Chamber is approximately 25 m long and 3 – 4 m wide (**Figure 3.9**). Both sides of the *grieta* wall above the chamber close in, creating an enclosed and dark space in the chamber. Only dim sunlight from above the southern entrance can be seen from the southern end of the chamber. Its protected nature is reflected in the fact that there is little soil deposition in this chamber. This chamber is located considerably higher than other parts of the *grieta*, as it is only about 15 m to the surface.

Passage 4 continues from the northern end of the Upper Chamber, down a steep slope, covered with loose rocks. Flowstone lines the *grieta* wall on the east, and this passage is notably wetter than other areas of the *grieta*, hence the nickname Nasal Passage. Wall 3, a well-built retaining wall, is located near the top of the slope. At the base of this slope, Passage 8 branches on the west side and runs parallel to Passage 4.

Chill Hill Area (Suboperation 31D)

The Chill Hill Area (Suboperation 31D) (**Figure 3.11**), consisting of Chamber 5 (Chill Hill) and a small cave, is located in the northern part of the Grieta Principal, approximately 170 m straight-line distance northeast of the Hidden Jar Area. Chamber 5 is an open area measuring about 13 m wide and 36 m long, and is located at the summit of a steep hill, the Big Muddy Slope. The summit, Chill Hill, is about 30 m below the surface. Its spatial proximity to the Palace Group, where the royal residential and administrative buildings are located, should be noted (see **Figures**

8.12, C2). This area is one of the widest points in the *grieta*, and is entirely open to the elements (**Figure 3.10**), which means the area receives direct sunlight (or moonlight) and rain, unlike the darker, enclosed areas of the Two Owls Area and the Hidden Jar Area. Vegetation grows in the eastern portion of the chamber, while water drippage can be observed in the southwestern part with a water-cut stream bed (albeit dry now) running northeast – southwest. This is one of the few locations in the *grieta* that has water drippage from stalactites, both in the open chamber and in the cave.

The cave on Chill Hill is located at the northern end of Chamber 5, under the large boulders (**Figures 3.12, 3.13**). The entrance is narrow and the small chamber inside has only enough space for a few people. It does continue further down at the back of the cave but no cultural material was observed.

Windy Valley (Suboperation 31E)

Windy Valley (Suboperation 31E) refers to the relatively flat passage (Passage 9) at the bottom of the slope leading northward from the Hidden Jar Chamber Area and terminates at the base of the steep incline that leads up to the Chill Hill Area, described above (**Figure 3.1**). This relatively narrow passage measures about 5 - 6 m wide where the unit was excavated, but tapers as it continues northward. Much cool wind channeled through this passage, hence the name of the area. From just north of the unit location, one can see the green, lush peak of Chill Hill in the distance.

Site Description of Grieta Rincón

Grieta Rincón is located at the southeastern end of the site, along the top of the escarpment and south of Structure M8-34 (**Figure 1.2**). The *grieta* is located adjacent to an area referred to as Barranca Escondida, which was investigated by Markus Eberl in 1999 as part of the earlier phase of the Aguateca Archaeological Project.

Excavations in the cave at Barranca Escondida exposed Early Classic miniature vessels, incensario fragments, and greenstone ornaments (Eberl 2003). In addition, four stelae (Stelae 15 – 18) were found outside the cave on the surface, at least two of which predate the historically documented arrival of the Aguateca dynasty and are linked to the preceding polities of the Petexbatun region, the Tamarindito - Arroyo de Piedra dynasty. According to Eberl (2000a:532-533), Stela 15 is almost identical to Stela 5 at Tamarindito, dating to ca. AD 500, and the legible portion records an “accession to the throne,” most likely within the Tamarindito - Arroyo de Piedra dynasty. These two stelae are the earliest known monuments in the Petexbatun area, suggesting the importance of the Barranca Escondida area and the cave during the Early Classic period (Eberl 2000a:532). Stela 16 shows stylistic similarities to Stelae 1 and 6 of Arroyo de Piedra, which date to the 7th century, prior to the historically documented arrival of the Dos Pilas dynasty, and the two dates (9.9.13.0.0. and 9.10.0.0.0, AD 626 and 633, respectively) recorded on Stela 16 corroborate this connection (Eberl 2000a:533). This stela depicts a personage, characterized by the Emblem Glyph of Tamarindito - Arroyo de Piedra, who oversaw the period ending of 9.9.13.0.0. (Eberl 2000a:533). These data suggest that, from the Early Classic (AD 350 – 600) to the early Late Classic (AD 600 – 700), the area later occupied by Aguateca was under the reign of the Tamarindito - Arroyo de Piedra dynasty and that the Barranca Escondida area was of ritual significance to this dynasty. Due to its spatial proximity and similar morphological forms of the Barranca Escondida cave and the Grieta Rincón cave, it was thought that Grieta Rincón was likewise a ritually significant area during this same time period associated with the Tamarindito polity.

Grieta Rincón consists of an open L-shaped *grieta* component (Suboperation 30B) and a deeper cave (Suboperation 30A) accessed through a small opening in the central part of the *grieta* (see **Figure 4.1**). Grieta Rincón has two entrances: one from the southeast, closer to Structure

M8-34, and the other from the southwest, closer to the Barranca Escondida area. The two access ways slope downward and provide fairly easy access. Until midday when the sun is high, the *grieta* remains relatively dark. From the cave entrance, faint gusts of cold wind were observed blowing outward in the afternoons. The *grieta* reaches its lowest point, about 10 m deep, by the cave entrance which is also the widest point, about 6 m wide. It is on average about 2.5 m wide throughout the *grieta*. No drip water was observed either in the chasm or the cave at the time of investigation, but the presence of speleothems and rimstone dams in the area northeast of the cave entrance suggests that at some time there had been water activity (see Chapter 6).

The cave consists of five overlapping levels, dropping down a total of about 40 meters (see **Figure 4.2**). Archaeological material was only found in the upper two levels. We rappelled into the lower chambers during the first season to survey and conduct surface collections, but a ladder was built during the second season to facilitate access.

Table 3.1. Political history of Dos Pilas - Aguateca, based on known hieroglyphic texts (Fahsen 2003; Guenter 2003; Houston 1993; Houston and Mathews 1985; Martin and Grube 2000). Acronyms used in the table are: BCK = B'alaj Chan K'awiil, IB = Itzamnaaj B'alam, IK = Itzamnaaj K'awiil, TTK = Tan Te' K'inich, TIK = Tikal, DP = Dos Pilas, AG = Aguateca, CAL = Calakmul, TAM = Tamarindito, AdP = Arroyo de Piedra. See also Table 3.2.

	Date	Calendar Round	Event	Source
B'alaj Chan K'awiil	632	9.9.19.7.8	Arrival of BCK (age 6.5) to Dos Pilas (?) OR preaccession rite	DP HS2
	634	9.10.1.3.19	War OR preaccession rite	DP HS2
	635	9.10.2.7.17	First scepter-taking by BCK (age 9) at TIK (?) under TIK ruler	DP HS2
	643	9.10.10.16.9	Receiving & public display of royal scepter (Accession of BCK OR another preaccession rite)	DP HS2
	648	9.10.15.4.9	Capture & death of a person of TIK at Ti Patuun place," by BCK	DP HS2
	650	9.10.18.2.19	Star war against DP by CAL ruler Yuknoom Ch'een II, flight of BCK to AG (BCK becomes ally of Calakmul)	DP HS2
	657	9.11.4.5.14	Star war against TIK by Yuknoom Ch'een II, flight of Nuun Ujol Chaak	DP HS2
	≈661		Unknown action by CAL ruler to BCK and TIK Nuun Ujol Chaak at Yax ha	DP HS2
	662	9.11.9.15.19	Attack by BCK on Kob'an, assisted by an ally of B'alam (La Amelia?)	DP HS2
	664	9.11.11.9.17	BCK captures Tajal Mo', a ruler or ajaw of Machaquila (?)	DP HS2
	672	9.12.0.8.3	Star war against DP by TIK Nuun Ujol Chaak, flight of BCK to an unknown site Chaak Naj in Petexbatun	DP HS2
	673	9.12.0.16.14	"Burning" of DP	DP HS2
	673	9.12.1.0.3	Attack by TIK ajaw on Chaak Naj where BCK fled, flight of BCK to Hiix Witz	DP HS2
	677	9.12.5.9.14	Star war at Puluul against TIK by CAL, after "burning", TIK Nuun Ujol Chaak fled to Ti Patuun place	DP HS2
	677	9.12.5.10.1	7 days later, BCK returns to DP	DP HS2
	679	9.12.6.16.17	Defeat and death (?) of Nuun Ujol Chaak by DP	DP HS2
	682	9.12.10.0.0	Celebration with a dance in company of CAL Yuknoom Ch'een; BCK's daughter Lady Wak Chan Ajaw moved to Naranjo	DP HS2
	684	9.12.12.11.2	3-K'atun anniversary of birth of BCK (age 60)	DP HS2
	686		BCK "witnessed" accession ceremony of CAL Yuknoom Yich'aak K'ak' at CAL	DP Panel 7
	692	9.13.0.0.0	BCK oversaw "scattering" ceremony for period ending	AG Stela 5
IB	698		Death (?) of IB	
IK	698	9.13.6.2.0	Accession of IK	DP St 8, HS1
	705	9.13.13.8.2	Defeat of a person from TIK by IK	DP Stela 1
	711?		(too eroded, but IK is mentioned)	AdP Stela 7
	ca 711		IK performed event under auspices of TAM Ruler 26	TAM HS 3
	716	9.14.5.0.0	Ritual circuit involving placing a stela at AG	DP Stela 15
	717	9.14.5.3.14	Star war against NIKTE-il-na "community house" place	DP Stela 14
	721		Star war against unknown place	DP Stela 15
726		Death of IK, buried at DP in Str L5-1 or P5-7	DP Stela 8	

Table 3.1. Continued.

	Date	Calendar Round	Event	Source
"Ruler 3"	727	9.14.15.5.15	Accession of "Ruler 3" (67 days after burial of IK)	DP Stela 11
	731	9.15.0.0.0	Celeration of k'atun ending	AG Stela 3
	731	9.15.0.0.0	Posthumously, IK mentioned as "overlord"	AdP Stela 2
	735		Capture of Seibal lord Yich'aak B'alam by "Ruler 3," "axing" event	AG Stela 2, DP Stela 2
	741		Death of "Ruler 3"	AG Stela 1, DP HB1
K'awiil Chan K'inich	741	9.15.9.17.17	Accession of KCK (only days after death of "Ruler 3"); 22 days later, "seating" event receiving another title	AG Stela 1
	743		Capture of El Chorro lords	DP HS 3
	745		Capture of Yaxchilan and Motul de San Jose lords	DP HS 3
	?		Capture of Akhul lord	Cancuen HS 1
	?		KCK presides over event at DP	Cancuen HS 1
	745		KCK oversees rituals performed by Seibal vassals	
	746	9.15.14.17.18	"Scattering" ceremony, carving of monument by KCK at Seibal	Seibal HS 1
	746	9.15.15.0.0	"Scattering" ceremony by KCK at TAM	Seibal HS 1
	747		KCK oversees rituals performed by Seibal vassals	
	?		Seibal Yich'aak B'alam dedicates mortuary shrine, ch'ok ajaw "young lord" elevated to his position under KCKs watch	
	748	9.15.16.12.1	Birth of TTK	AG Stela 6
761	9.16.9.15.3	KCK exiled by TAM Chanal B'alam (?); war event against TAM 7 days later	TAM HS 2	
Tan Te' K'inich	770	ca 9.16.19.0.0	Accession of TTK (AG becomes primary capital)	AG Stela 6
	778		Battle fought by TTK	AG Stela 19
	790	9.18.0.0.0	K'atun ending celebration by TTK	AG Stela 7
	800	9.18.10.0.0	Celebration of anniversary by Ajaw B'ot, a Mutal-titled king	Seibal Stela 7
	802		TTK presides over "seating" ceremony performed by La Amelia ruler Lachan K'awiil Ajaw B'ot	LaAmelia HS 1
	807		Last appearance of Mutal emblem glyph	LaAmelia Panel 1
	810	9.19.0.0.0	(Unfinished monument; last monument with known date at Aguateca)	AG Altar M

Table 3.2. Rulers of the Dos Pilas – Aguateca dynasty, showing relevant dates and monuments commissioned. DP = Dos Pilas, AG = Aguateca, HS = Hieroglyphic Stairway, HB = Hieroglyphic Bench.

Ruler	Birth - Death	Reign		Monuments	Father	Mother
B'alaj Chan K'awiil (aka Ruler 1)	Oct 15, 625 - ?	635	ca 692	DP Stelae 9, 13?, 17?; Panels 6 & 7; HS 2 & 4	K'inich Muwaahn Jol II (Tikal Ruler 24)	unknown
Itzamnaaj B'alam	? - 698	ca 692	ca 698	none	Balaj Chan K'awiil	Lady of Itzan
Itzamnaaj K'awiil (aka Ruler 2)	Jan 25, 673 - Oct 22, 726	Mar 24, 698	726	DP Stelae 1, 11, 12, 13, 14, 15, 16; HS 1	Balaj Chan K'awiil	Lady of Itzan
? (aka Ruler 3)	? - 741	Jan 6, 727	May 28, 741	DP Stelae 2, 5, 8; HB 1; DP Panel 19; AG Stelae 2, 3	unknown	unknown
K'awiil Chan K'inich (aka Ruler 4)	? - 761?	Jun 23, 741	ca 761	DP Stelae 4, HS 3, HB; AG Stelae 1, 5	Itzamnaaj K'awiil?	unknown
Tan Te' K'inich (aka Ruler 5 or Ruler of Aguateca)	Jan 22, 748 - ?	Feb 8, 770	ca 802	AG Stelae 6, 7, 12, 13, 19	Ucha'an K'an B'alam	unknown

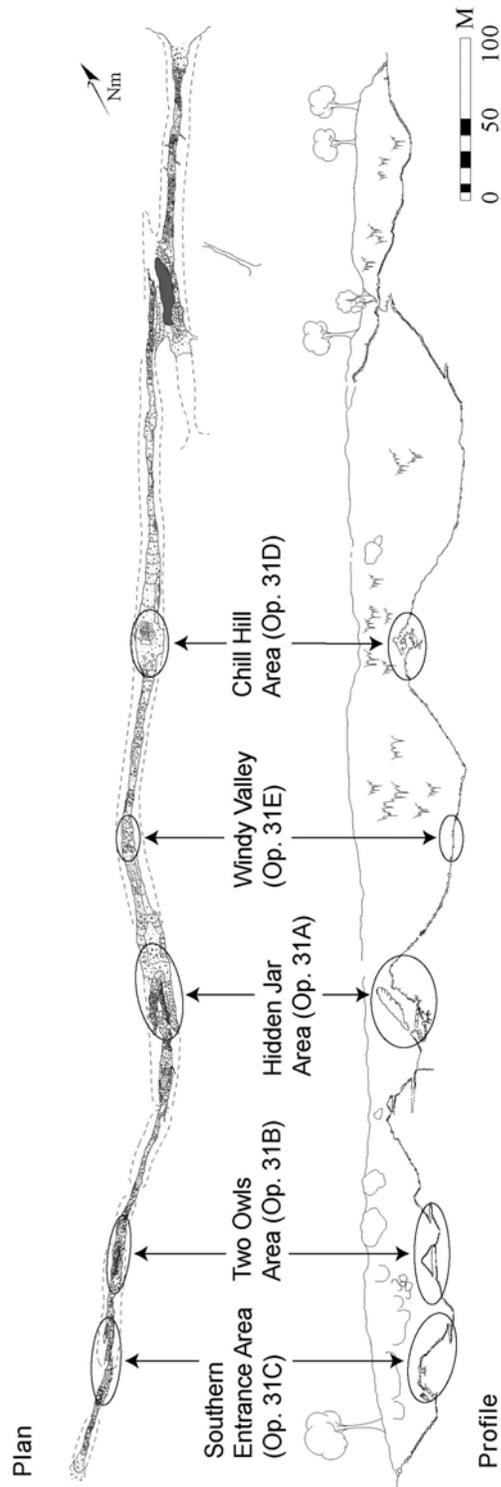


Figure 3.1. Plan and profile maps of the Grieta Principal, showing locations of investigated areas and their operation designations.

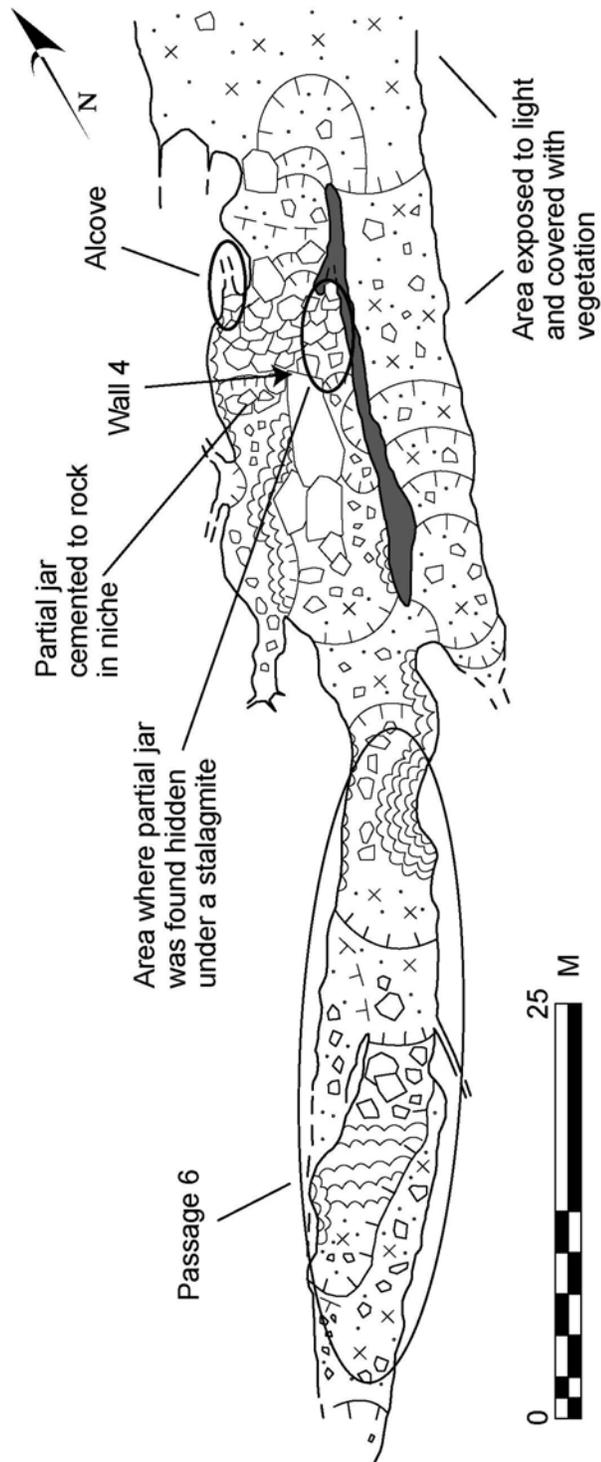


Figure 3.2. Plan of the Hidden Jar Area (Suboperation 31A) which consists of Chamber 2 (Inner Chamber), the Alcove, and Chamber 4 (Outer Chamber).

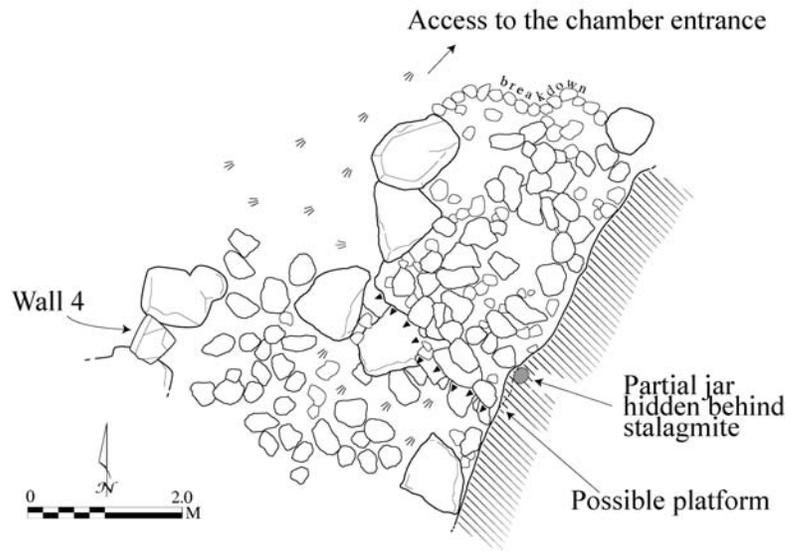


Figure 3.3. Plan of the area where the partial Pantano Impressed jar was found cached behind a stalagmite.

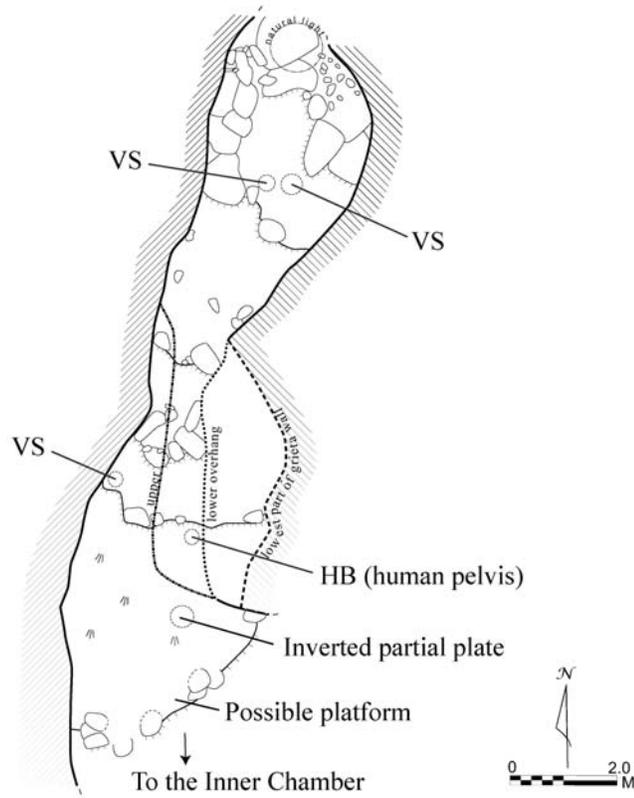


Figure 3.4. Plan of the Alcove, Hidden Jar Area.

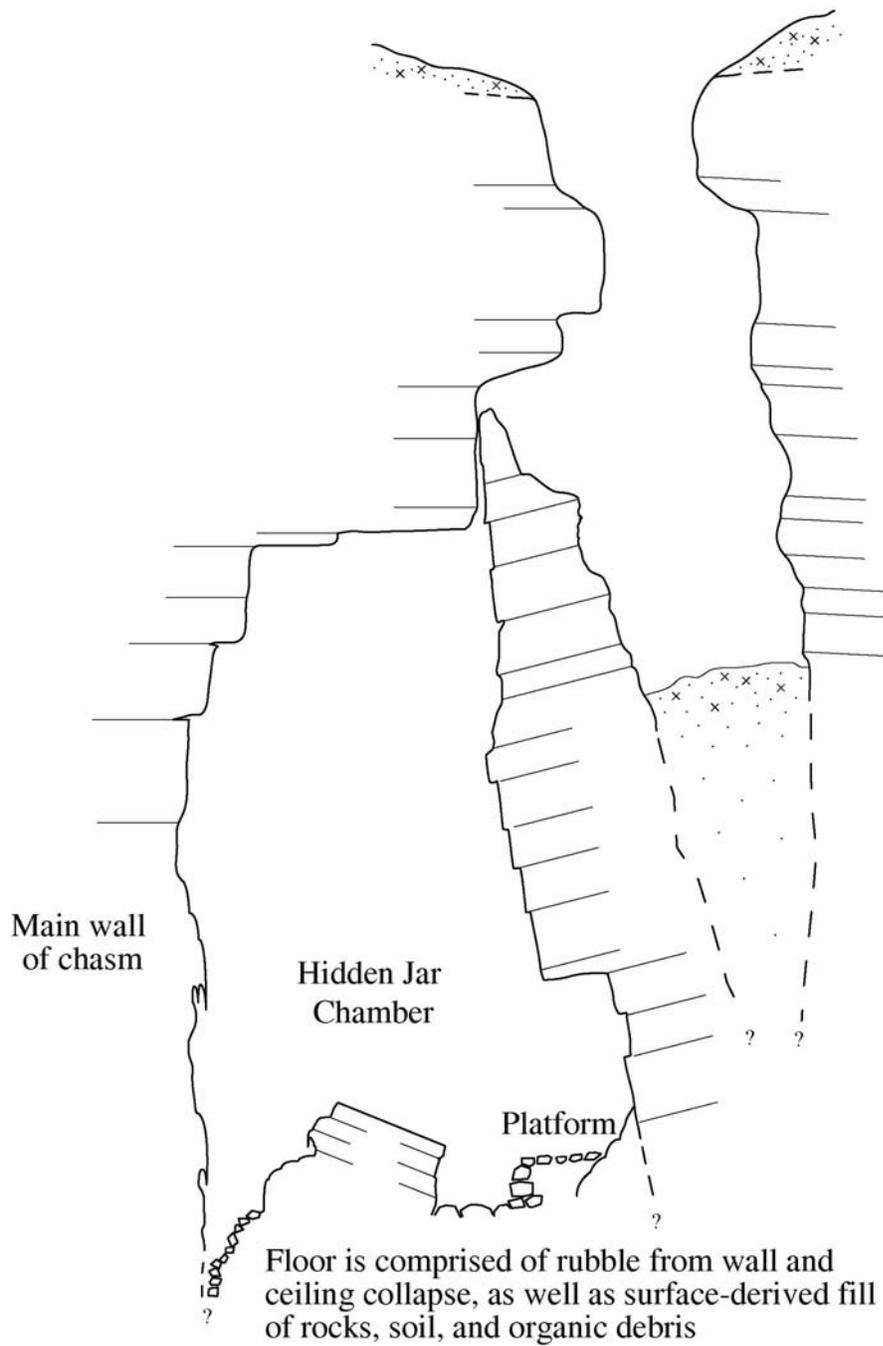


Figure 3.5. Schematic drawing of the geologic formation of the Hidden Jar Area. Viewing to the north. Drawing is not to scale.

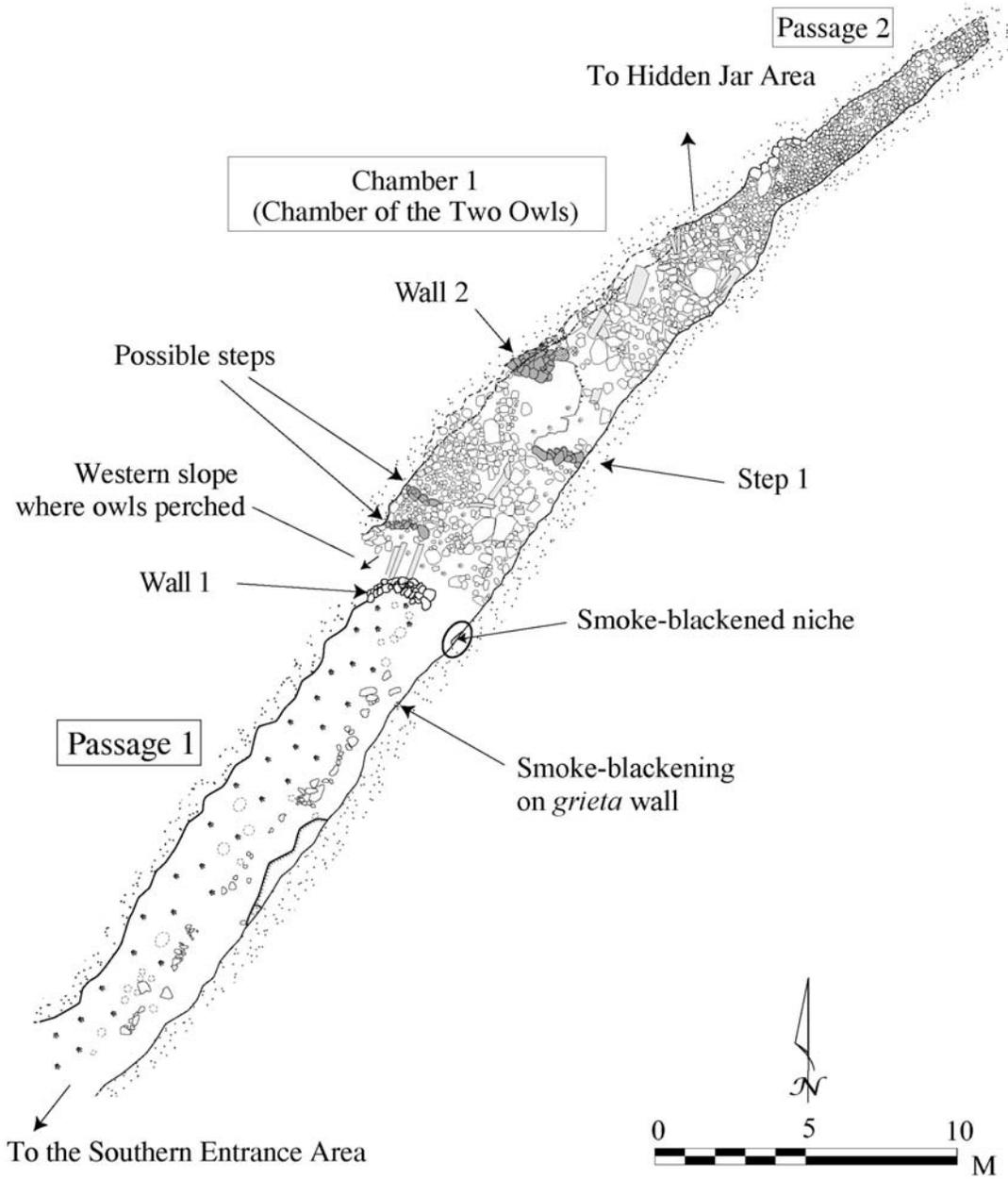


Figure 3.6. Plan of the Two Owls Area (Suboperation 31B), which consists of Chamber 1, Passage 1, and Passage 2.



Figure 3.7. Photo of the Two Owls Chamber, looking south. Passage 1 is behind Wall 1 at the top left. Wall 2 is in the foreground at the bottom right.

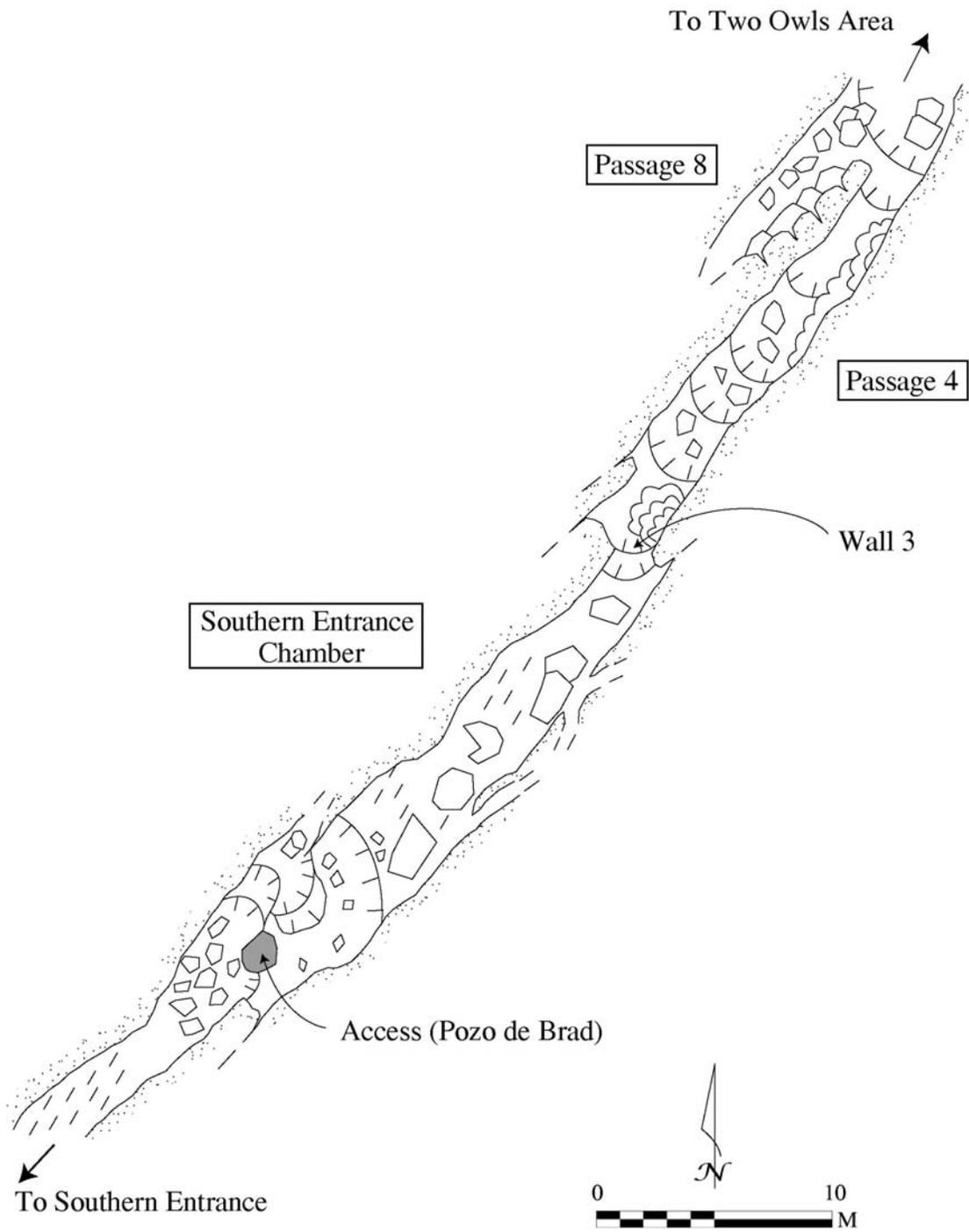


Figure 3.8. Plan of the Southern Entrance Area (Suboperation 31C), which consists of the Southern Entrance Chamber, Passage 4, Passage 7, and Passage 8.



Figure 3.9. Photo of the Upper Chamber, Southern Entrance Area, looking north. The dark area in the background is the space above Passage 4, a steep down slope.



Figure 3.10. Photo of Chill Hill, looking north. Note cave entrance is at the base of the large limestone slabs at the bottom left.

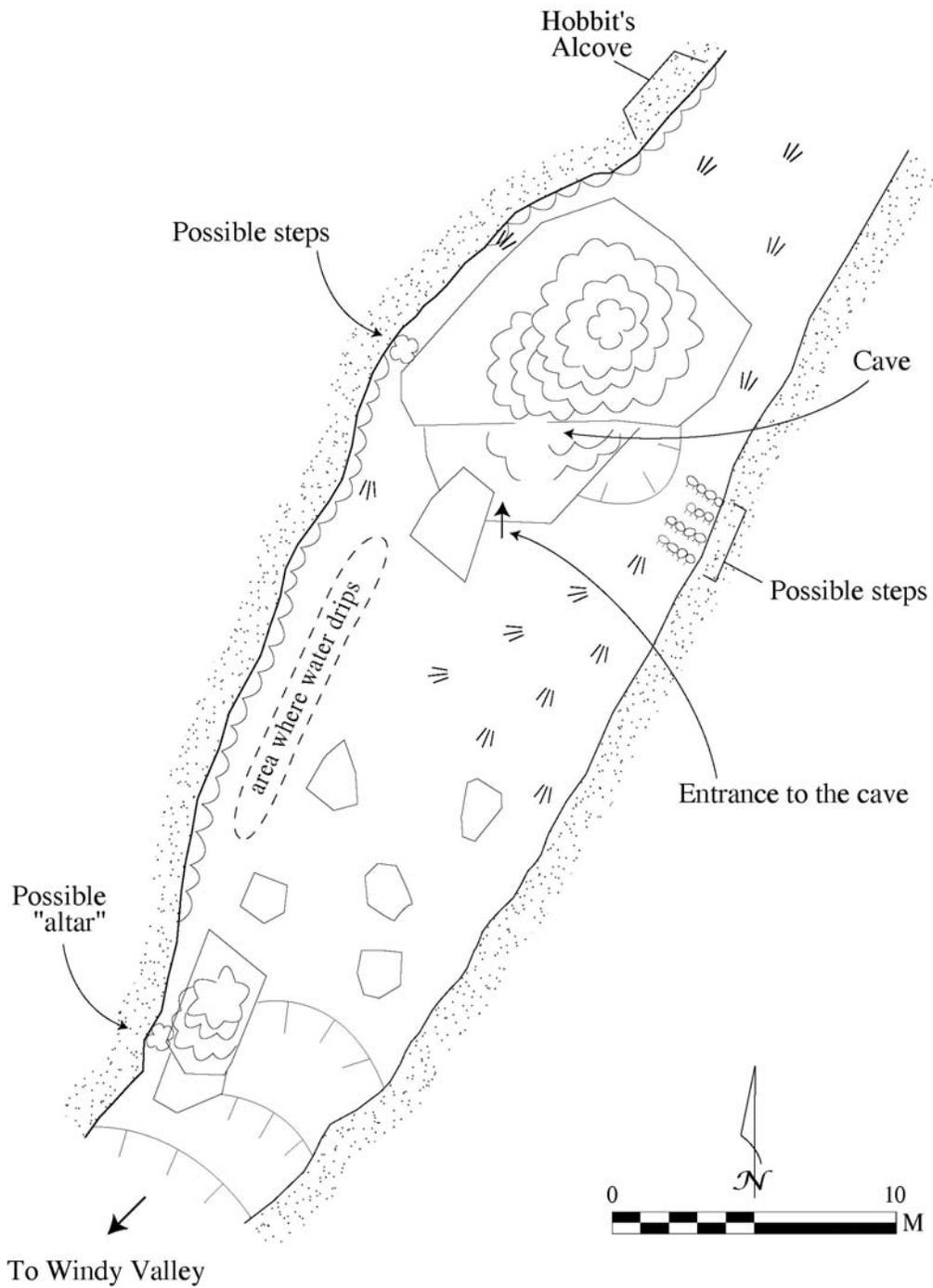


Figure 3.11. Plan of the Chill Hill Area (Suboperation 31D), consisting of Chamber 5 and the Cave.



Figure 3.12. Cave on Chill Hill, looking inward from the entrance.



Figure 3.13. Cave on Chill Hill, looking south toward the entrance from the back of the cave.

CHAPTER 4

SURVEYING AND MAPPING

Archaeological investigations of the *grietas* at Aguateca consisted of three phases: (1) survey and mapping of the *grietas* in their entirety; (2) surface collections; and (3) excavations. In 2003, a one-day reconnaissance was carried out to assess the feasibility of the project. One of the site caretakers, Edgar Castañeda, guided my crew through the majority of the Grieta Principal, as we created a sketch map and photographically documented architectural features and artifacts on the surface.

The first task of the formal investigations was to complete a plan and a profile of the entire Grieta Principal because only the top outline of the *grieta* had been mapped previously by the Aguateca Archaeological Project (e.g., Inomata 1995). Mapping of the *grieta* consisted of three components: (a) production of a general plan and profile (large-scale mapping, phase 1); (b) production of a digitized three-dimensional map (large-scale mapping, phase 2); and (c) production of a detailed plan of selected areas with archaeological significance along with illustrations of the architecture (archaeological mapping). Speleothem breakage was also documented. Two weeks in 2004 were allocated to the mapping phase with two crews. One crew, consisting of volunteer cavers Bev Shade and Nick Johnson and archaeologist Doug Weinberg, carried out (a) and (b) of the foregoing, while the other crew, comprised of Guatemalan students Jenny Guerra, Ana Cristina Morales, Marielos Corado, and myself, focused on (c). This division of labor proved efficient and productive, given the short field season in 2004.

During the 2004 season, the crew accomplished surveys and produced plans and profiles of the Grieta Principal, the Grieta Rincón, and the Barranca Escondida cave (**Figures C.1, 4.1 - 4.3**). Detailed archaeological maps were completed during this time and architectural features were documented. During the 2005 field season, the cavers' crew consisting of Shade,

Johnson, and Philip Rykwaldler completed the maps of Phase 1, and data for Phase 2 mapping was taken.

Mapping Phase 1

As noted, survey was accomplished in two phases. In the first phase, data was collected to produce a general plan and profile map of the *grietas* (**Figures C.1, 4.1 - 4.6**). Standard mapping techniques used by the caving community (cf. Dasher 1997) were applied, in which a survey line consisting of a set of survey stations was established with stations connected to each other by measurements of azimuth, inclination, and distance. A Suunto compass and clinometer as well as a Leica Disto laser distance meter (model: pro⁴) were used to take the respective measurements. A basic profile of the *grietas* was also produced in Phase 1 (**Figures C.1, 4.1 - 4.6**), running parallel to the survey baseline, and a detailed sketch map was produced in the field at a scale of 1:400. Care was taken to correlate the *grieta* map with that of the surface site, by tying in the *grieta* data to known surface datums established throughout the site by previous phases of the Aguateca Archaeological Project. In order to check for any survey measurement errors, I performed a simple ground-truthing test, by tossing small rocks marked with flagging tape into the Grieta Principal from the surface. The points from which the rocks were tossed were recorded and compared to the locations where the rocks were found inside the *grieta*. Because the rocks may bounce and roll, resulting in horizontal movement of the rocks from the point they hit the *grieta* floor, two rocks were thrown from each point. I also carefully listened for sounds that may indicate that the rocks rolled, and if so, how far. Admittedly, this test is not scientific, but did in fact serve to clarify some discrepancy in the survey data in correlating parts of the maps.

Additionally, descriptive data were recorded for each survey station. This data consisted of: (a) floor matrix (e.g., clay, sand, boulder, breakdown, humus); (b) light intensity (1 = completely in sun light; 2 = indirect light, or one can see without artificial light; 3 = diffuse light,

or one can only make out general features without artificial light; 4 = no light, or total darkness); (c) ceiling height or absence of ceiling; (d) distance to cave walls taken perpendicular to the previous survey line (i.e., a left-right distance to the walls); and (e) height of the survey stake, which is the survey station mentioned above. It should be noted that light intensity is necessarily a qualitative factor: the time of day and surface weather conditions have a significant effect on the amount of light entering the *grietas*, up to one unit of difference on the four-unit scale. Because the *grietas* are often open to the surface, there is more light than is the case in many caves. However, in the darker areas it is still necessary to use artificial light to move safely and see details of the passage for mapping. The use of electric lights in darker areas decreases human sensitivity to very low levels of natural light. Thus, some areas mapped as being in total darkness may have perceptible levels of light if measured by an instrument.

Speleothem breakage was documented by taking distance and azimuth from a known datum and photographing them. These were plotted onto the *grieta* plans (see **Figures 4.12, 4.13**). Speleothems are crystalline deposits of minerals, most commonly calcite in the karstic regions of the Maya lowlands, formed when dissolved components of the bedrock are deposited in a cave by groundwater (see **Appendix A**). Speleothem breakage was recorded because it has been shown that such breakage is common in Mesoamerican caves, with several uses for the speleothems including construction material both in caves and in structures at surface sites, as places to venerate ancestors and deities, and offerings in caches and burials at surface sites (Brady, et al. 2005; Brady, et al. 1997b; Peterson, et al. 2005; Rissolo 2003:357-360). Brady and his colleagues (Brady, et al. 1997b) present findings from neutron activation analysis of speleothems taken from caves in the Copan Valley, Honduras, suggesting that such analysis may allow determining the cave of origin of broken speleothems from trace elements. Speleothems have been collected from surface contexts at Aguateca in the collapse debris of Structure L8-4 (**Figure 4.1**), and a

speleothem carved into a phallus was found behind Structure M8-8 (Inomata, personal communication, 2003). By documenting the distribution of speleothems found at the surface site and speleothem breakage in the *grieta*, it is hoped that the use of broken speleothems at Aguateca can be examined at a later date.

Mapping Phase 2

The second phase was designed to add more detail to the data collected in the earlier phase, providing a more detailed surface model for areas of interest. Data for this phase were recorded to contour the *grieta* walls and floor, perpendicular to the base survey line, allowing these areas of the cave to be displayed in three dimensions simultaneously. The Disto laser distance meter, a Brunton hand-held transit, and a carpenter's triangle (i.e., a large protractor) were used to measure the distance, azimuth, and inclination to various points along the cave wall from the floor to the ceiling or the highest possible point on the cave wall. Up to 22 points were taken at each station, and stations were set 0.2 – 2.0 m apart. Station spacing was tighter in more complex areas. Each station set up in this latter phase was tied into a datum established in the first phase. A detailed sketch (1:50 scale) of the profiles was drawn for each station.

Archaeological Mapping

Areas with architectural features and a high concentration of artifacts on the surface were mapped in detail in addition to the maps described above. A scale of 1:20 was primarily used, although 1:25 and 1:50 were also used for parts of areas with less archaeological significance. The baseline - offset method of mapping was used, in which offset points are taken to the cave walls and other features from a level baseline. A Brunton hand-held transit was used to measure the azimuth of the baseline, and metric tape measures for the distances. Architecture as well as artifact clusters were plotted onto the plans.

Architectonic features were documented by means of photographs and illustrations (plans, cross-sections, and elevation drawings on a 1:10 scale). Four walls (Walls 1 – 4), one step (Step 1), and one platform (Grieta Rincón) were documented (**Table 4.1**). Other architectural constructions were identified during excavations (platform in Alcove, Hidden Jar Area; retaining wall, Passage 1, Two Owls Area) while the identification of some could not be confirmed (platform, Chamber 1, Hidden Jar Area; steps in Chamber 5, Chill Hill) even through excavations. Others, because of their low degree of integrity, were simply observed and only cursory notes were taken.

Results of the Survey

The entire length of the Grieta Principal was mapped, both in plan and profile, according to the Phase 1 mapping method (**Figure D.1**). Standardized symbols used on the maps are shown in **Figure 4.2**. This map was subsequently referenced in relation to the Aguateca surface site (**Figure D.2**). Due to time restraints, the second phase mapping was completed for only two areas of the *grieta*, which are areas with a higher concentration of archaeological remains including architecture: the Two Owls Area (Chamber 1, Passage 1, and Passage 2) and the Hidden Jar Area (Chamber 2 and the Alcove).

The same two areas mapped in Phase 2 were mapped in more detail using the baseline – offset method. Chamber 1 was mapped using the archaeological mapping method because the majority of the well preserved architecture (Walls 1, 2, Step 1) is located here, which suggests that this area was a focus of ancient activity. Chamber 1 was mapped using three baselines at a scale of 1:20, and Passage 1 and Passage 2 were mapped at a scale of 1:50.

Part of Chamber 2 was also mapped with the baseline – offset method because it contains one of the intact walls (Wall 4). This map also encompassed the area with a possible platform feature where a partial jar had been cached behind a stalagmite. The Alcove that extends

to the northwest of the chamber near the chamber entrance was also mapped using this method because a concentration of human bone and ceramics in addition to a line of stones suggestive of an architectural feature were observed on the surface.

In addition to the Grieta Principal, a smaller karst feature, named Grieta Rincón, located in the southern end of the site along the top of the escarpment and south of Structure M8-34, was explored and mapped (**Figures 4.3, 4.4**). The cave at Barranca Escondida, located adjacent to Grieta Rincón, was also mapped using the Phase 1 method (**Figure 4.5**). The cave at Barranca Escondida was excavated by Markus Eberl in 1999 due to the discovery of several stela fragments in the vicinity of its entrance (Eberl 2000b; 2003); however, a complete map of the *grieta* had not been produced then. Two small *grietas* were also explored and mapped. These are the Grieta Pequeña I, or Grieta Turística where tourists regularly walk through, and Grieta Pequeña II, both of which are located at the northern end of the site immediately east of and paralleling the Grieta Principal (**Figures 4.6, 4.7**). A simple, pecked face (petroglyph) was identified on a bulbous speleothem along the western *grieta* wall at the northern entrance of Grieta Turística (**Figure 4.8a, b**). Several other *grietas* noted by the Northern Transect survey crew were explored by Shade, Johnson, and Rykwaldler as well, but will not be included here as they are outside the focus of this study (Buechler, et al. 2005; Shade, et al. 2005).

Ledges and niches within the Grieta Principal were also explored to assess any ancient use of these areas. Two approaches were used: technical rock climbing to high areas from below, and rappelling down to high areas from above when possible. No cultural materials were found on the ledges that were explored. During such explorations, Cave Under the Bridge was discovered). This cave is a small passage located southeast of and behind Structure L8-5 of the Plaza Principal, under one of the bridges that span the Grieta Principal. A closer examination of the spatial correlation between the cave and Structure L8-5 reveals that in fact the building stands

directly atop the cave (**Figure D.2**). The cave is located directly above the Two Owls Area. It was fully explored and mapped (**Figure 4.9**), and also investigated for cultural materials.

Architectural Features

The most intact and well-preserved architectonic constructions are described here. It is likely that there are others in the Grieta Principal, but their identification remains inconclusive due to varying degrees of preservation and site formation processes. Step 1 in Chamber 1 and the platform in Grieta Rincón are described in Chapter 6 because they were subject to excavation.

Wall 1

Wall 1 (**Figure 4.10**) is located in the southern end of Chamber 1 and northern extent of Passage 1. Its primary orientation lies northwest – southeast, and the western end tapers and merges with the breakdown rocks that line the western wall of Passage 1. The eastern end of the wall terminates approximately 1.4 m from the eastern cave wall of Passage 1, creating a narrow access way to and from the passage. It fits the definition of “wall” as outlined by Loten and Pendergast (1984:16): “a vertical linear unit of construction that has two parallel faces; not the facing of a platform, terrace, or other unit.” Like all other construction in the *grieta* and in caves in general, Wall 1 is constructed of dry-laid, unmodified stone of varying size with occasional spalls from the cave wall placed in between the larger stones. Probably because this wall was dry-laid, the mechanical bond has allowed it to remain well intact without collapsing (cf. Loten and Pendergast 1984). It is constructed on a slope, so the height of the wall from its lowest point measures approximately 1.3 m and 7 – 8 courses high. It is roughly two courses wide, and approximately 1.6 m long. Although the wall consists of rubble facings, the stones that face the eastern end of the wall, particularly the stones in the top half portion on the north face, are more rectangular and of a similar size. Moreover, the northern face appears better shaped with more

regularly sized stones, whereas more spalls and stones of varying size can be observed in the southern face.

Wall 2

Wall 2 is located in the central part of Chamber 1 along the western cave wall, almost across from Step 1. This architectural feature does not fall under Loten and Pendergast's (1984:16) definition of a "wall," as it is not entirely two-sided. However, it is referred to as a wall, because its identification was unclear without excavation. Its northern face consists of six to seven courses (or approximately 1.8 m high) (**Figure 4.11**), while the southern face is only two to three courses high. Stones are placed so as to fill in the space between the flowstone and the cave wall. Unmodified stones (except for one mano grinding stone, as described in Chapter 6) are used as facing stones, though these stones appear more rounded compared to that used in Wall 1 and Step 1. The upper stones in the construction are larger and more closely fit together, while those in the lower portion are smaller and more clay mortar can be observed between the stones. At the base of the northern face is a small hollow space, which appears to extend south or southwest. It may be that this wall was placed atop a hole or passage. Perhaps Wall 2 is a platform retaining wall. It is interesting because the southern face juts above the ground surface, thus creating a "lip" along the edge of the supposed platform floor. See Chapter 6 for the excavation results associated with this wall.

Wall 3

Wall 3 is located at the upper end of a steep slope leading up to the Southern Entrance Chamber. This architectural feature is more correctly classified as a retaining wall for a platform. It is eight courses (1.3 m) high at its highest point and three to five courses (1.0 – 1.4 m) wide (**Figure 4.12**). It is comprised of unmodified stone whose height is roughly similar. The surfaces of the stones are slippery and smoothed due to the water and mud that has fallen on it, and in fact,

currently there is much water drippage on this slope. Thus, similar to Wall 2, it seems that this architectural feature was constructed using clay mortar, but it is difficult to confirm without excavating. Although the top course of this wall does not coincide with the level of the chamber floor, this feature may have served to support and reinforce the access way to and from the Southern Entrance Chamber. If the slope has always been wet, this wall may have been placed to prevent erosion of the passage.

Wall 4

Wall 4 (**Figure 4.13**) is located in the central part of Chamber 2 (Chamber of the Hidden Jar) at the southern end of the downward sloping floor that extends from the entrance to the surface site at the north of the chamber. Conforming to Loten and Pendergast's (1984:16) definition of a "wall," this wall is oriented roughly northeast – southwest and measures 1.15 m (six to seven courses high) on the east face and 1.55 m (nine courses high) on the west. Again, unmodified stone is used in the construction. The majority of the stones in the west face appear to be similarly sized stone that occurs naturally in the flat and level bedding planes of the limestone. The stones in the east face are somewhat larger and square in shape. The wall was constructed by placing stones between two large limestone boulders that run in the same direction as the wall. The height of the wall matches the height of these two boulders that support the wall on its north and south sides. The function of the wall is unclear, but it may be that it serves as part of a platform retaining wall; the platform may extend to the north of this wall and correspond with the possible platform located in front of the cached jar, northwest of this wall. Additionally, this wall may have served to partition the chamber space.

Speleothem Study

Twelve areas of speleothem breakage were documented in Grieta Principal and five in Grieta Rincón (**Table 4.2, Figures 4.14, 4.15**). Only breakages of speleothems larger than 1 cm in

diameter were recorded, because thin speleothems, often called soda straws for their size and shape, are easily broken due to their fragility, and the cause of breakage may not necessarily be intentional (see **Appendix A** for cave terminology). Speleothem breakage scars were classified according to approximate diameter (or length if not circular) at the scarred end: small (1 – 5 cm), medium (5 – 10 cm), and large (10 cm and larger). Only speleothems that showed clear evidence of fracturing in the photographs were counted as broken, suggesting that the total frequencies err on the conservative side. The area under and around the breakage was briefly examined to find possible fragments of speleothem that may have broken off.

The majority of the breakage scars showed speleothem regrowth over the broken surface. The broken edges of some speleothems were rounded, indicating that some time had elapsed since the breakage occurred. In most cases, the broken speleothems were nowhere in sight near the breakage scars. This suggests that the speleothems were removed and carried elsewhere. Possible functions of such removal are listed below.

In addition to breakage scars, broken speleothems were found in three areas. In all instances, the broken speleothems were located in the immediate vicinity of other speleothems and had been calcified to the floor. Their corresponding breakage scars could not be identified, thus indicating that there was some degree of movement after breakage in each case. However, the failure to find the exact locations from which the speleothems were broken may be explained by the following factors. Regrowth tends to obscure breakage scar form. In addition, the broken speleothems calcified to the floor prevented me from closely examining the specimens to find its matching breakage scar.

One noteworthy example of broken speleothems is at the entrance to a narrow passage south of the Inner Chamber of the Hidden Jar Area, where several broken speleothems were found clustered behind stalagmites (SP10, **Figure 4.14**). These broken speleothems may have

been stalagmites in this area or may have been broken off from elsewhere and cached here since the ceiling above only contains thin soda straws. Though the significance of the removal and placement of these speleothems is unknown, it is likely that they were broken and cached here purposefully.

Another instance of broken speleothems occurs at the northern end of the Chill Hill Area, along the western *grieta* wall. Stalactites and stalagmites form the appearance of a maw, and one is able to enter the alcove behind these speleothems. The broken speleothems observed calcified to the floor may be the results of breaking speleothems to facilitate access into this alcove or perhaps to alter the appearance of the maw as has been reported from some caves in Belize (Griffith and Jack 2005).

The pattern of breakage scars suggests that speleothems were not indiscriminately harvested. This observation follows the stalactite breakage pattern documented at Balam Na Cave, Guatemala, where the hypothesis of speleothem mining for “utilitarian” use as ceramic tempering material was discredited (Brady, et al. 2005:217-218). Speleothems have been reported from cultural contexts such as intermixed with human interments at Actun Nak Beh, and the lack of the specific type of speleothem in the cave suggests that they were brought in from another cave (Halperin 2002:103). Possible functions of broken speleothems include use on household altars and shrines (Brady, et al. 2005:219; Deal 1988:74; Lorenzen 2003; Rissolo 1995:119; Stone 1995:130), offerings in rituals and caches (e.g., Ferguson 1998; Thompson 1970:183), architectural construction materials in structures at surface sites (Peterson, et al. 2005) and in caves (Brady, et al. 1997b:731-732; Rissolo 1995:116; 2003:100), and rarely as monuments such as Stela 31 at Yaxchilan (Brady, et al. 1997b:728, Fig.2; Tate 1992:132). Occasionally, simple faces were carved in speleothems, and they served as foci of veneration, referred to as “idols” (for list of examples of speleothem sculptures, see Brady, et al. 1997b:733-736). Alternatively, rather

than the object of worship, they probably functioned as “surrogates” for the ancestors or particular supernatural beings, to borrow Miguel Aguilera’s (2007) word. In some cases, speleothems are removed or stacked to facilitate or restrict movement in caves (e.g., Helmke and Ishihara 2002) or possibly to create a particular type of space, such as a niche, which, in the case of speleothem breakage #9 (SP9), I speculate may have functioned like an altar (**Figure 4.16**). Moreover, some speleothems have been worked into vessels, an uncommon artifact type that is believed to be associated with people of high status (Lothrop 1936:52; Christina Luke, personal communication, 2007). In addition, at Chechem Ha Cave in Belize, a broken speleothem contained ash and charcoal, suggestive of its use as an incense burner (Awe, et al. 2005:233, Figs.9.16, 9.17).

Speleothem samples were collected from areas of cultural context: where human bones were covered with calcite after final deposition of the bones, where calcite had grown over burned areas on cave walls, and where stalactites were growing back after breakage. These specimens were collected to be submitted for Uranium - Thorium Disequilibrium, a type of radiometric dating. However, geologist Jeff Dorale of the University of Iowa has examined the samples and comments that they are not appropriate for the analysis (Dorale, personal communication, 2006). Based on past experience, Dorale notes the specimens are “dirty,” or clay-rich, which distorts the Thorium-230 content because clay is a silicate and contains considerable uranium and thorium.

Summary

The primary objectives set for the mapping portion of the field seasons in 2004 and 2005 were accomplished successfully. The archaeological maps provide a foundation to spatially contextualize excavation operations. Illustrations of the more intact architectonic features were completed, which is significant in itself because architecture in cave contexts, though abundantly

reported from all parts of Mesoamerica, has not been recorded systematically and in detail (Guerra 2006). This is one of the first attempts to systematize the documentation process of cave architecture. It is also important that the *grieta* plan was tied into the surface site map (**Figure D.2**), because we can now examine spatial use in the Grieta Principal in relation to the Aguateca settlement.

Table 4.1. Architectural features documented in the Aguateca *grietas*.

Op.	Area	Architectural feature	Location
31A	Hidden Jar Area	Wall 4	Center of Inner Chamber
		Platform (?)	In front of hidden jar, in northeast part of Inner Chamber
		Low platform, altar-like	At the south end of Alcove
31B	Two Owls Area	Wall 1	Between Chamber 1 and Passage 1
		Wall 2	Northwestern part of Chamber 1
		Step 1	Northeastern part of Chamber 1
		Retaining wall (rock alignment)	Central part of Passage 1, paralleling passage length
31C	Southern Entrance Area	Wall 3	Northeastern end of Upper Chamber
31D	Chill Hill Area	Steps (?)	Northwestern part of Chamber 5
		Steps (?)	Northeastern part of Chamber 5
30A	Cave, Grieta Rincon	Platform	Chamber in first level of cave



Figure 4.1. Speleothems recovered from the collapsed material of Structure L8-4, Aguateca (photo taken by author; courtesy of Aguateca Archaeological Project).

PROYECTO ESPELEOLOGICO PURIFICACION Standard Cave Map Symbols

Compiled by Peter Sprouse, 1999

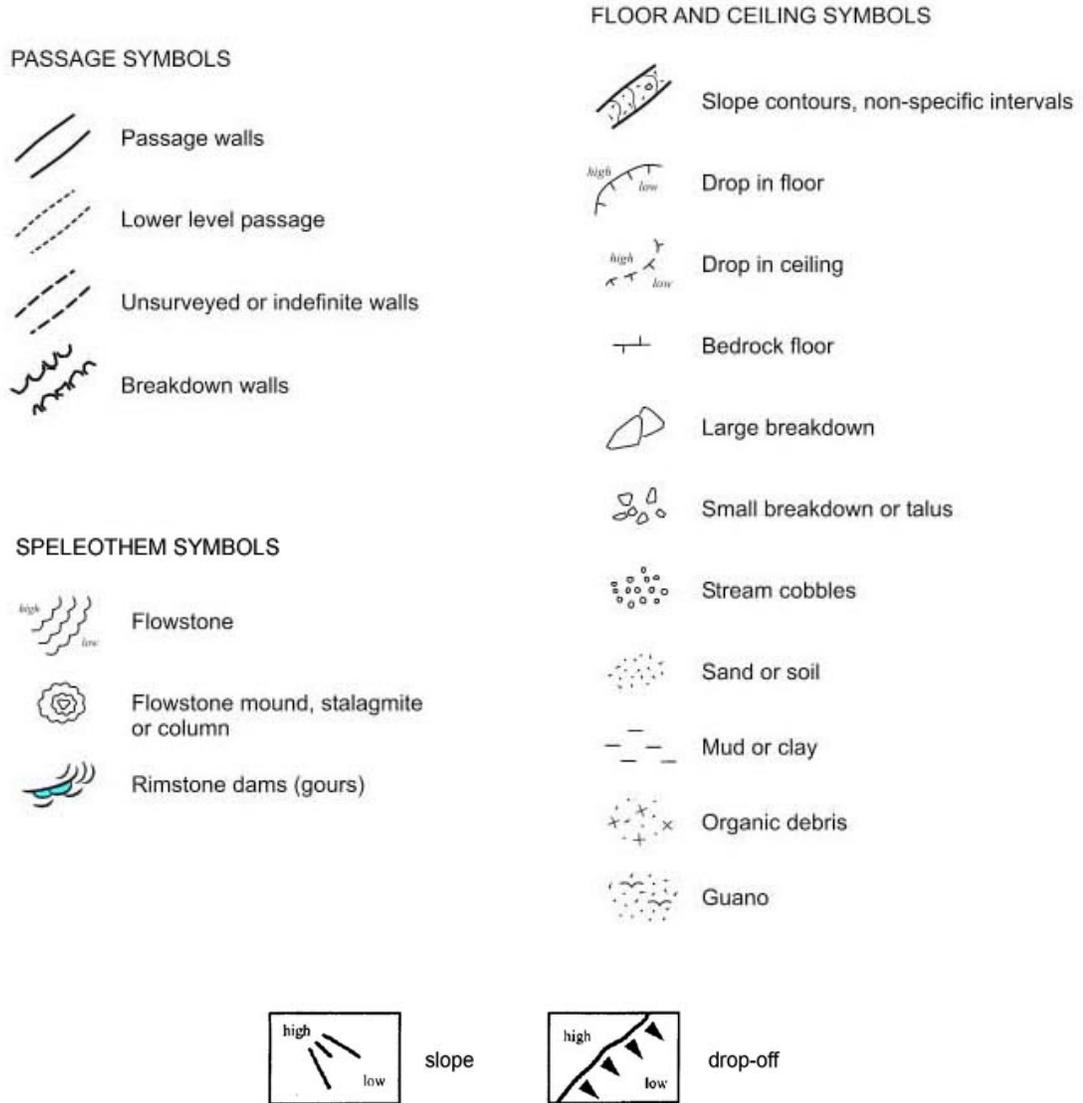


Figure 4.2. Symbols used in the maps. The upper symbols are courtesy of the Proyecto Espeleológico Purificación. The bottom two symbols are courtesy of the Western Belize Regional Cave Project.

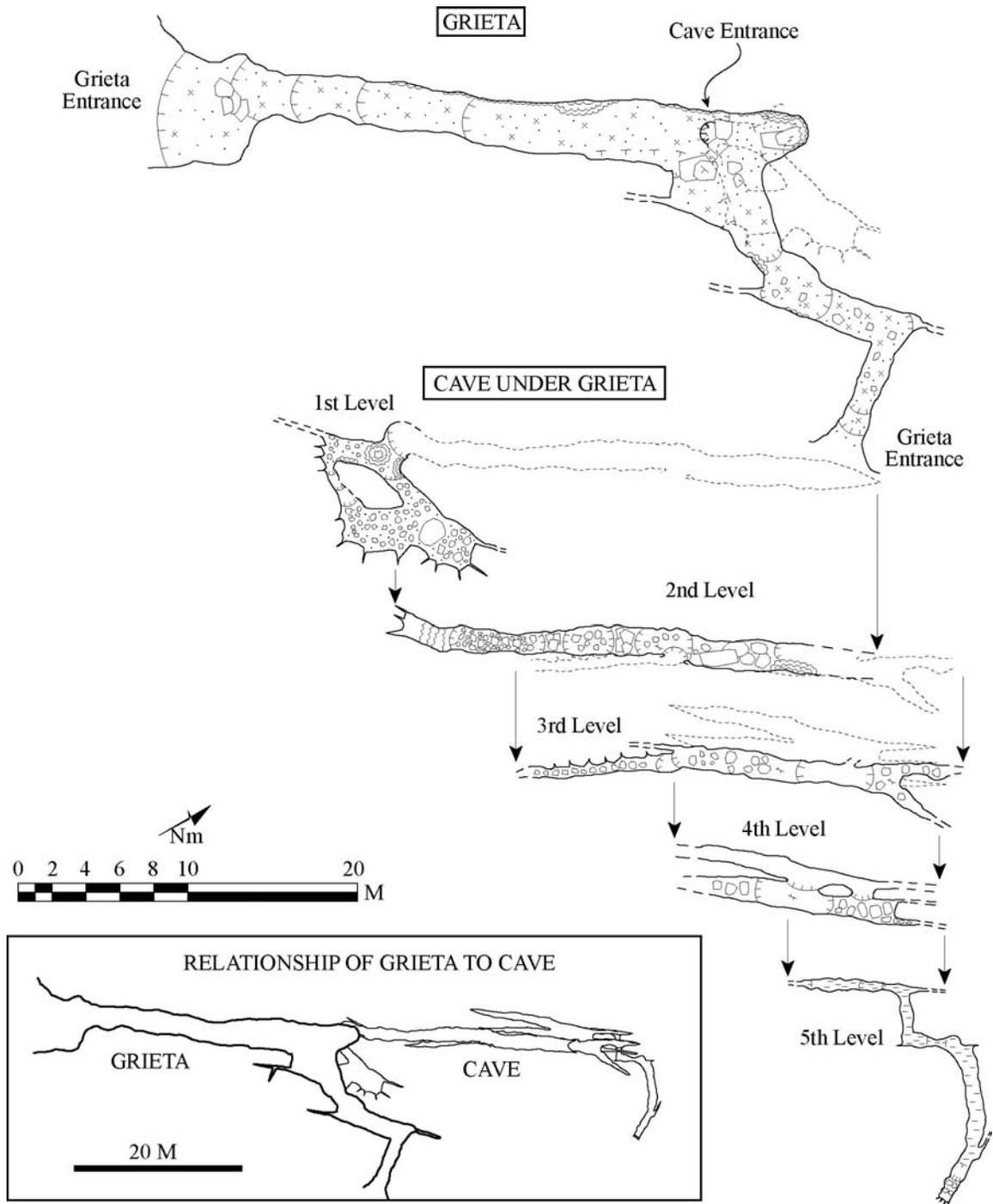


Figure 4.3. Plan of the Grieta Rincón and the cave under it. Survey by Bev Shade, Nick Johnson, and Doug Weinberg; drawing by Bev Shade.

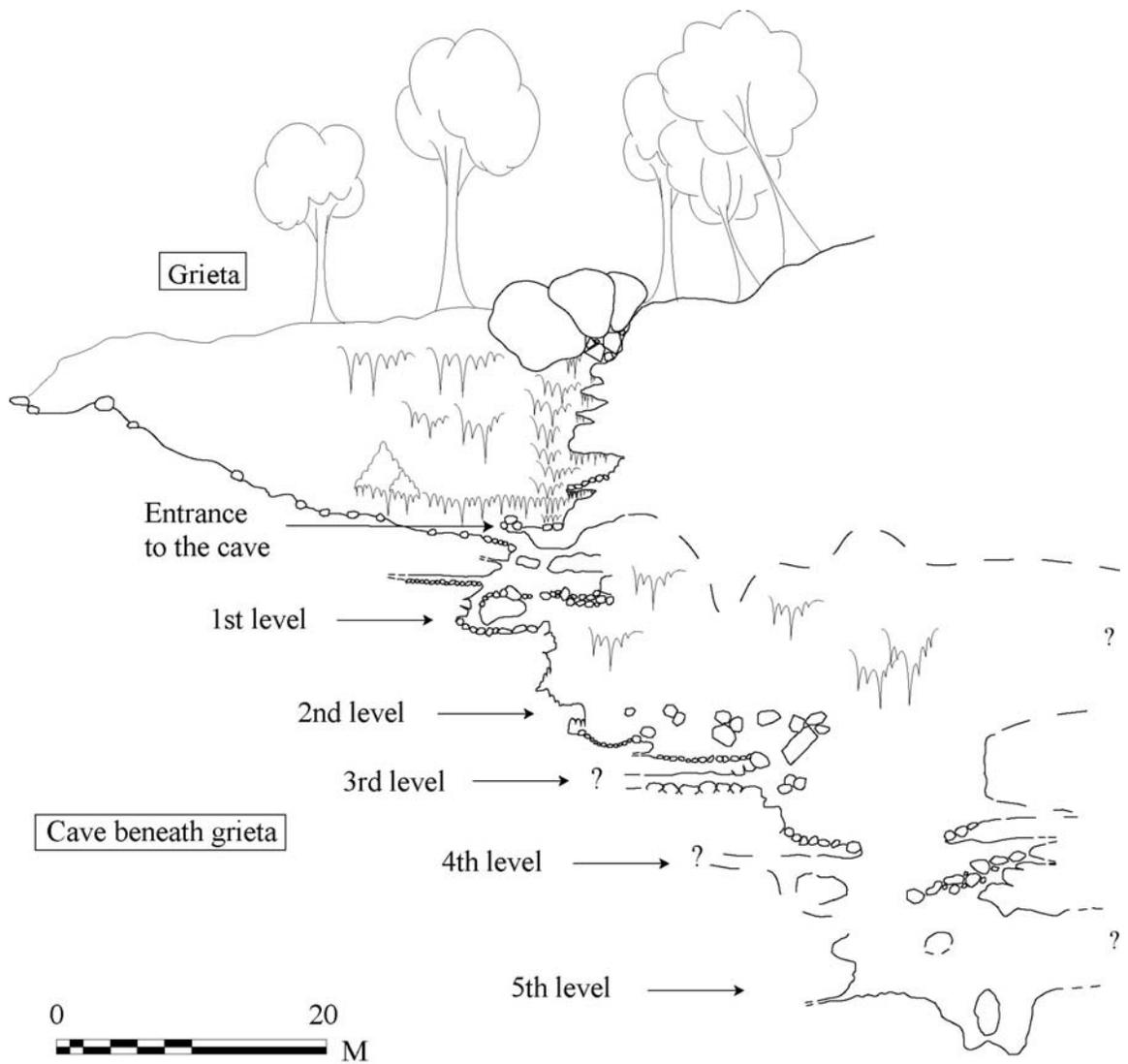


Figure 4.4. Profile of the Grieta Rincón and the cave.

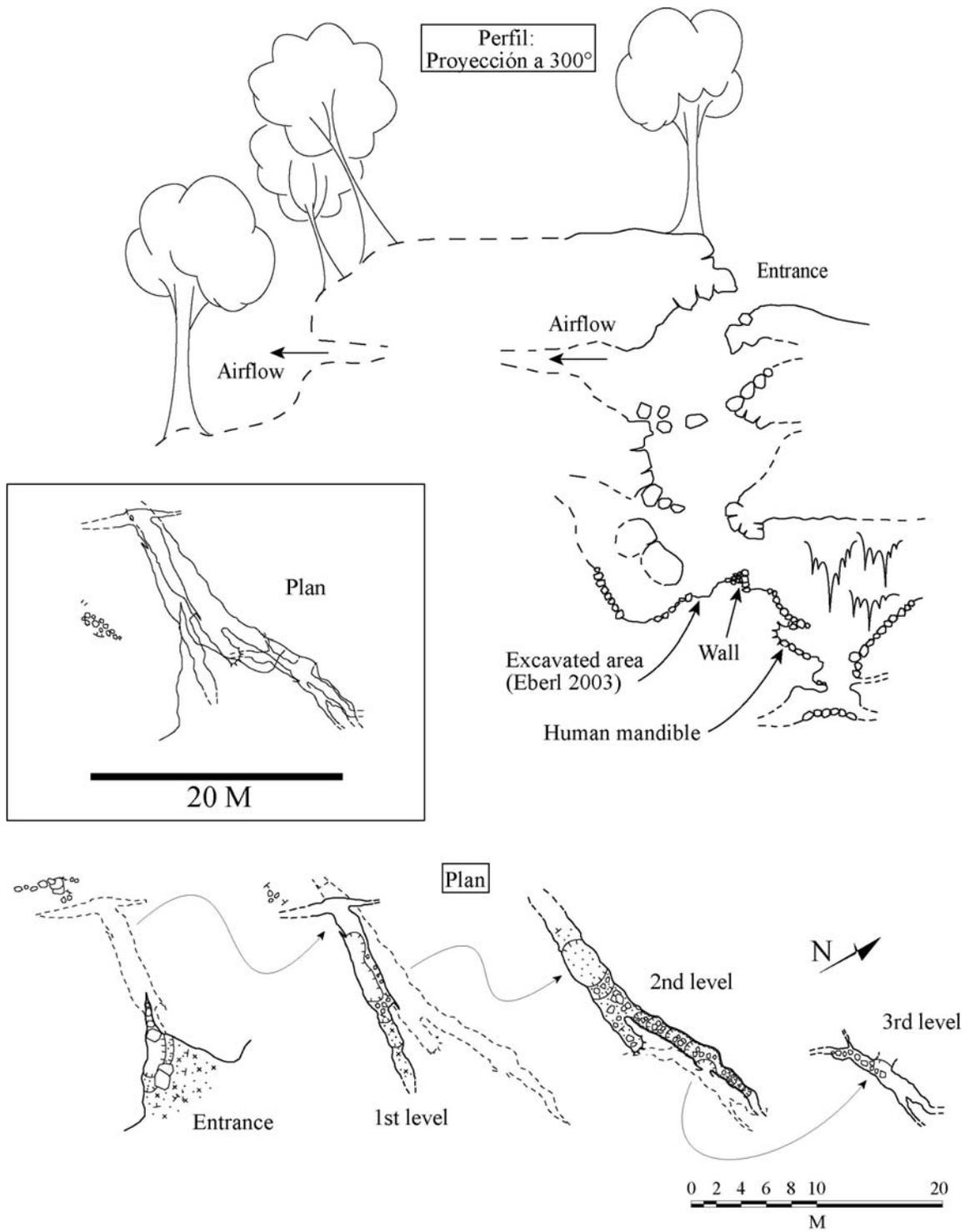


Figure 4.5. Profile and plan of the cave in the Barranca Escondida area.

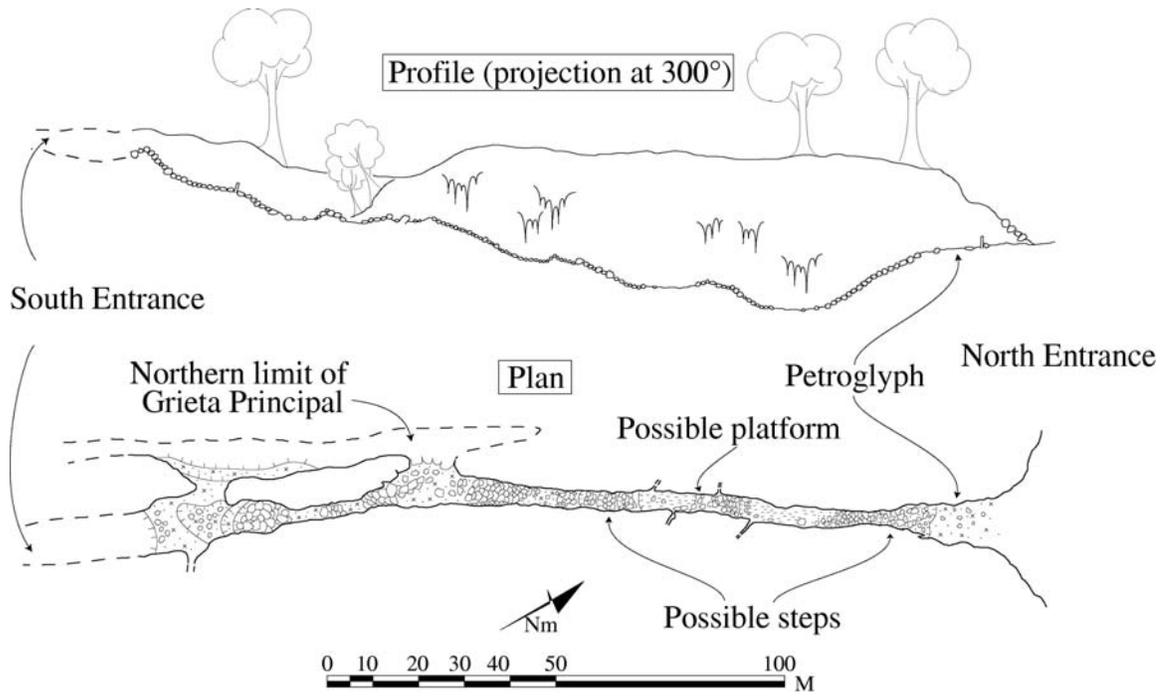


Figure 4.6. Profile and plan of Grieta Pequeña I (Grieta Turística).

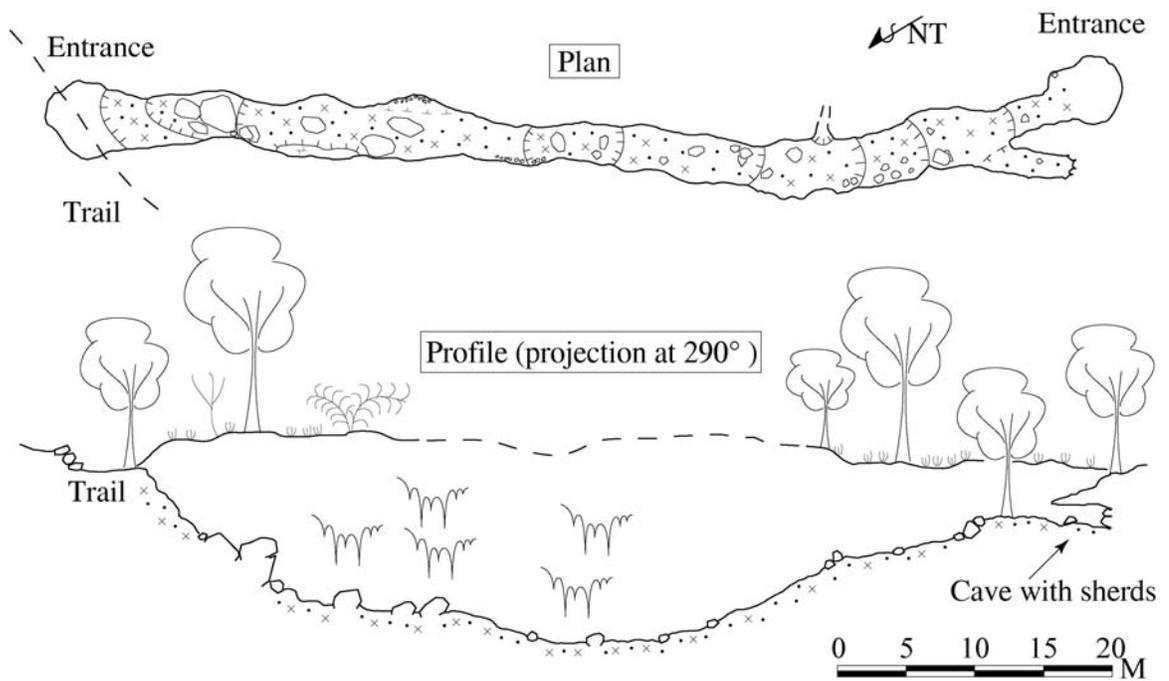


Figure 4.7. Profile and plan of Grieta Pequeña II.

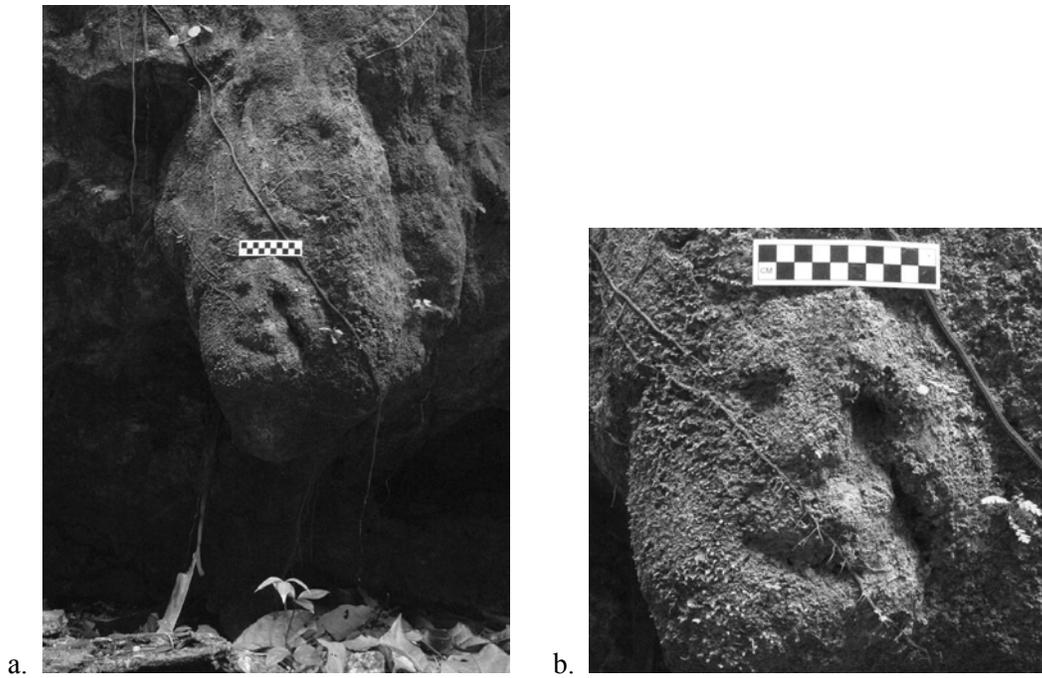


Figure 4.8. Petroglyph in the Grieta Turística: a. the cave formation; b. detailed view.

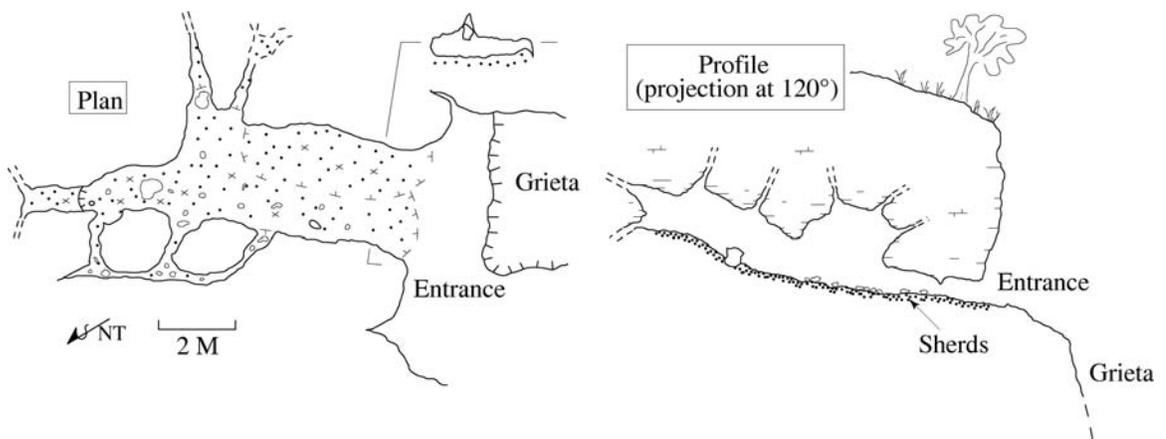


Figure 4.9. Section and plan of the Cave Under the Bridge, which is located above the Two Owls Area and behind and below Structure L8-5.

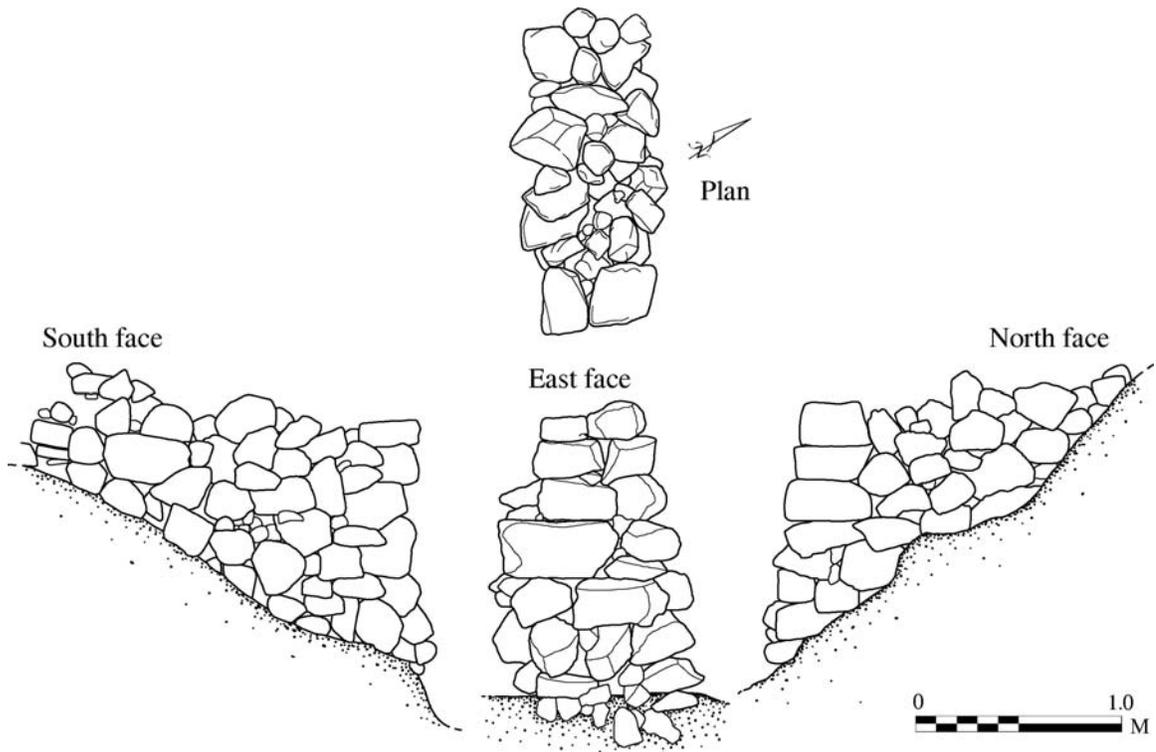


Figure 4.10. Elevation drawings and plan of Wall 1, Passage 1, Two Owls Area.

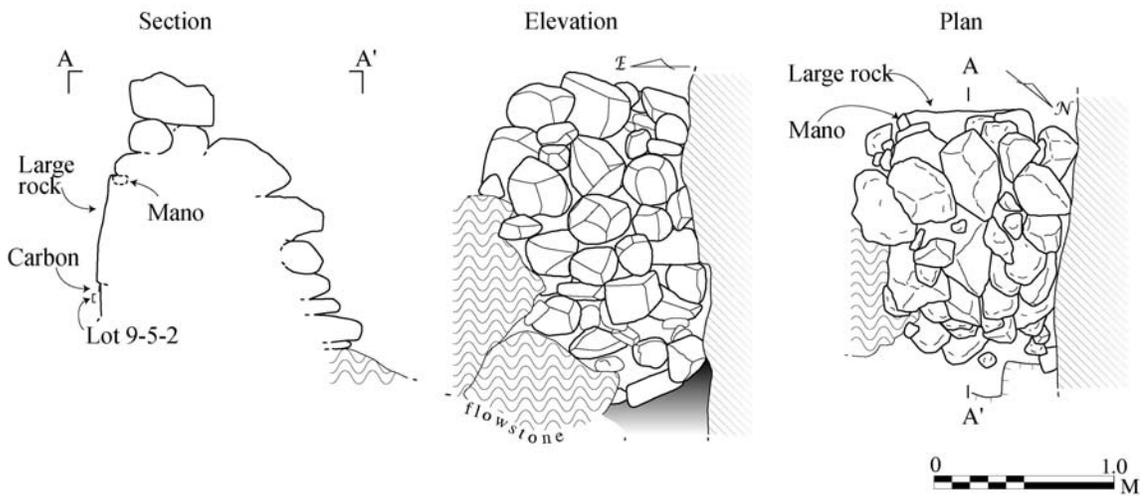


Figure 4.11. Section drawing (after excavation of Unit 9; see Chapter 6), elevation drawing, and plan of Wall 2, Two Owls Chamber, Two Owls Area.

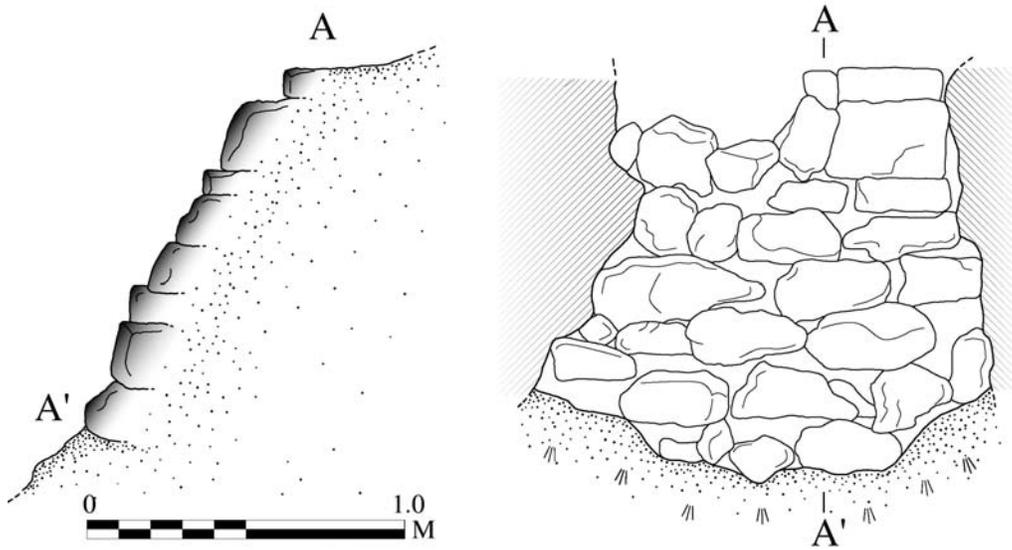


Figure 4.12. Section and elevation of Wall 3, Passage 4, Southern Entrance Area.

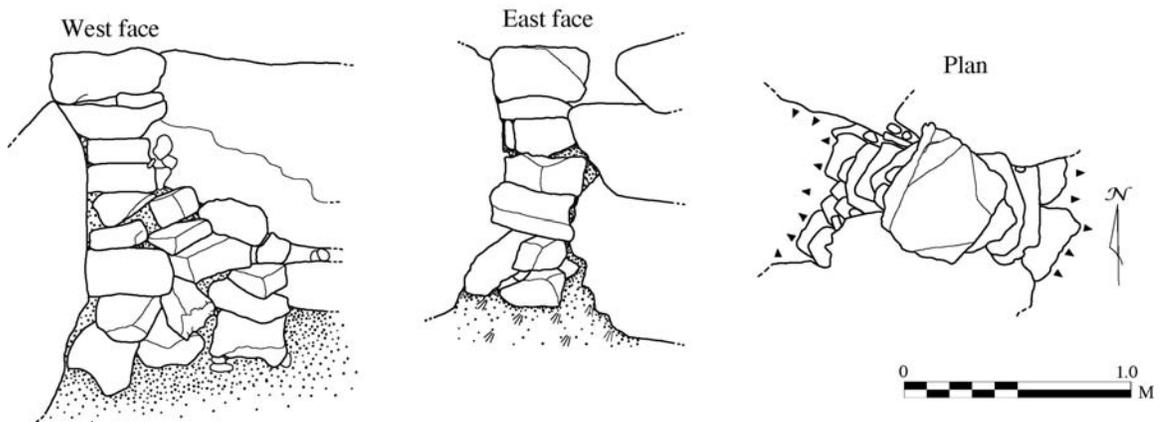


Figure 4.13. Plan and elevation drawings of Wall 4, Inner Chamber, Hidden Jar Area. For the section drawing, see Chapter 6.

Table 4.2. Descriptions of speleothem breakage in Grieta Principal and Grieta Rincón. The locations of the SP#s are shown in Figures 4.13 and 4.14.

	SP#	Description
Grieta Principal	1	1 medium, 2 small stalactite breakage scars. Some regrowth.
	2	2 small stalactite breakage scars. Some regrowth. One broken speleothem has been calcified onto surface, but cannot tell where it originates.
	3	1 large, 3 small stalactite breakage scars. Regrowth.
	4	2 medium stalactite breakage scars. Some regrowth.
	5	1 large bacon-shaped stalactite breakage scar. No regrowth.
	6	1 small stalactite breakage scar. Rounded edges along breakage scar.
	7	3 medium, 9 small stalactite breakage scars. Regrowth and rounded edges.
	8	5 small stalactite breakage scars.
	9	1 large, 2 medium stalactite breakage scars. 1 broken speleothem is found (?). Regrowth and rounded edges. Breakage has created a niche.
	10	2 medium stalactite breakage scars. At least 4 broken speleothems calcified to floor of niche. Rounded edges.
	11	2 large, 7 medium stalactite breakage scars in niche. Rounded edges.
	12	3 medium, broken speleothems (stalagmites?) lay calcified to floor.
Grieta Rincón	13	1 large stalactite breakage scar. Regrowth around the edges.
	14	1 large, 3 medium, 2 small stalactite breakage scars. Regrowth on broken surfaces.
	15	1 large stalactite breakage scar. Sharp edges, so may be relatively new breakage.
	16	1 large, 1 small stalactite breakage scars. Some regrowth.
	17	2 large, 2 medium. Regrowth.

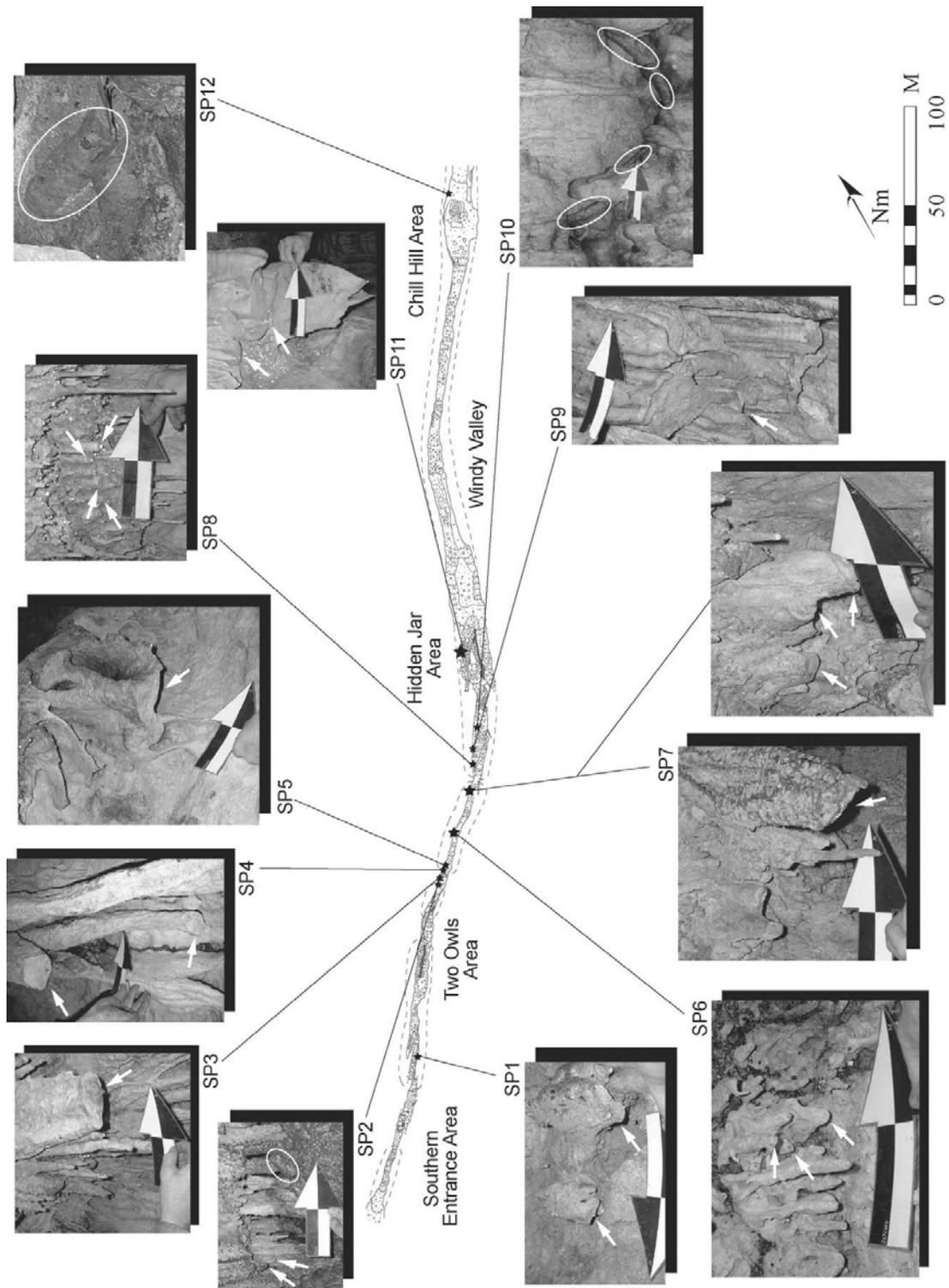


Figure 4.14. Map showing locations of speleothem breakage in Grieta Principal. Arrows point to breakage scars and circles show broken speleothems.

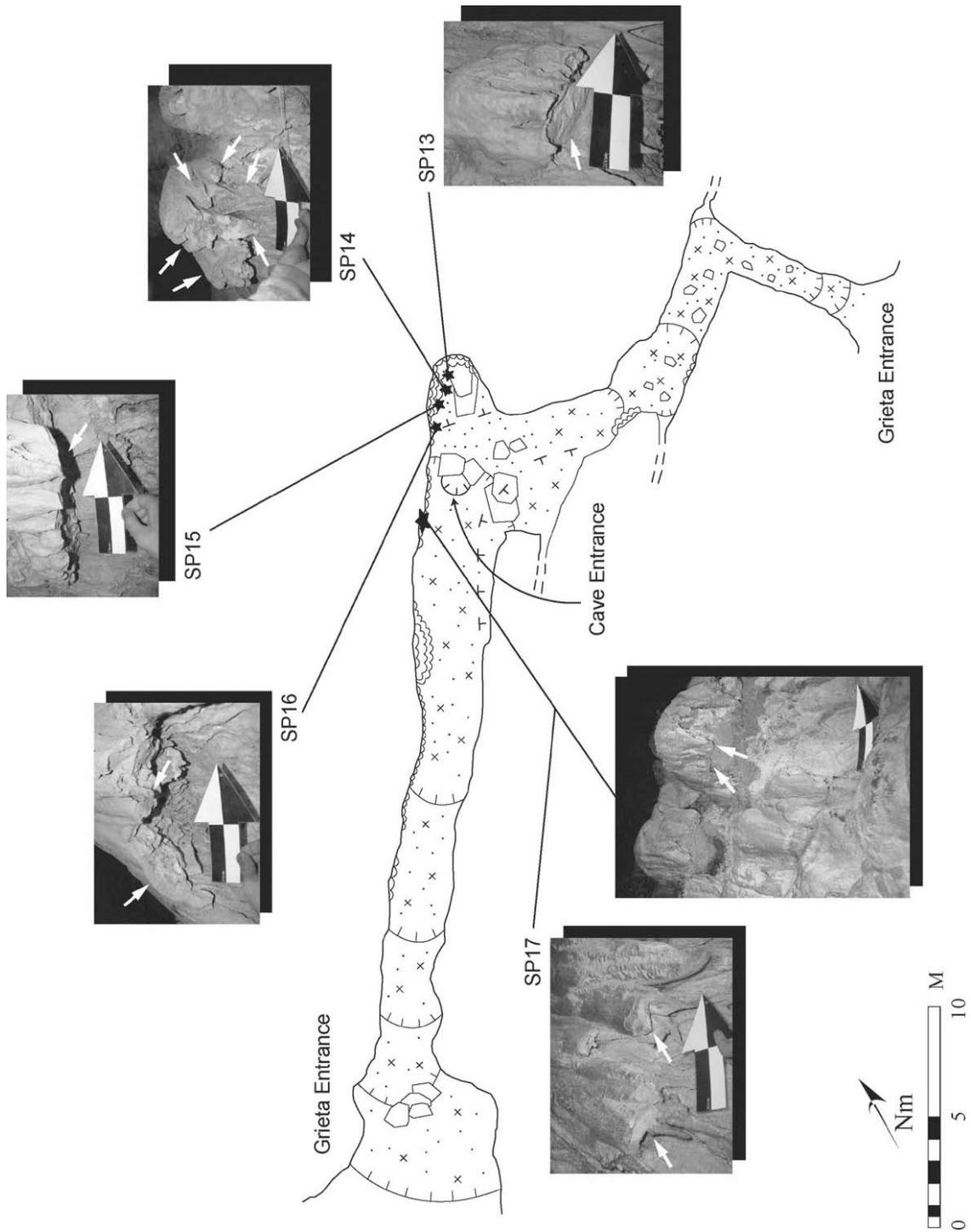


Figure 4.15. Map showing locations of speleothem breakage in Grieta Rincón. Arrows point to breakage scars.

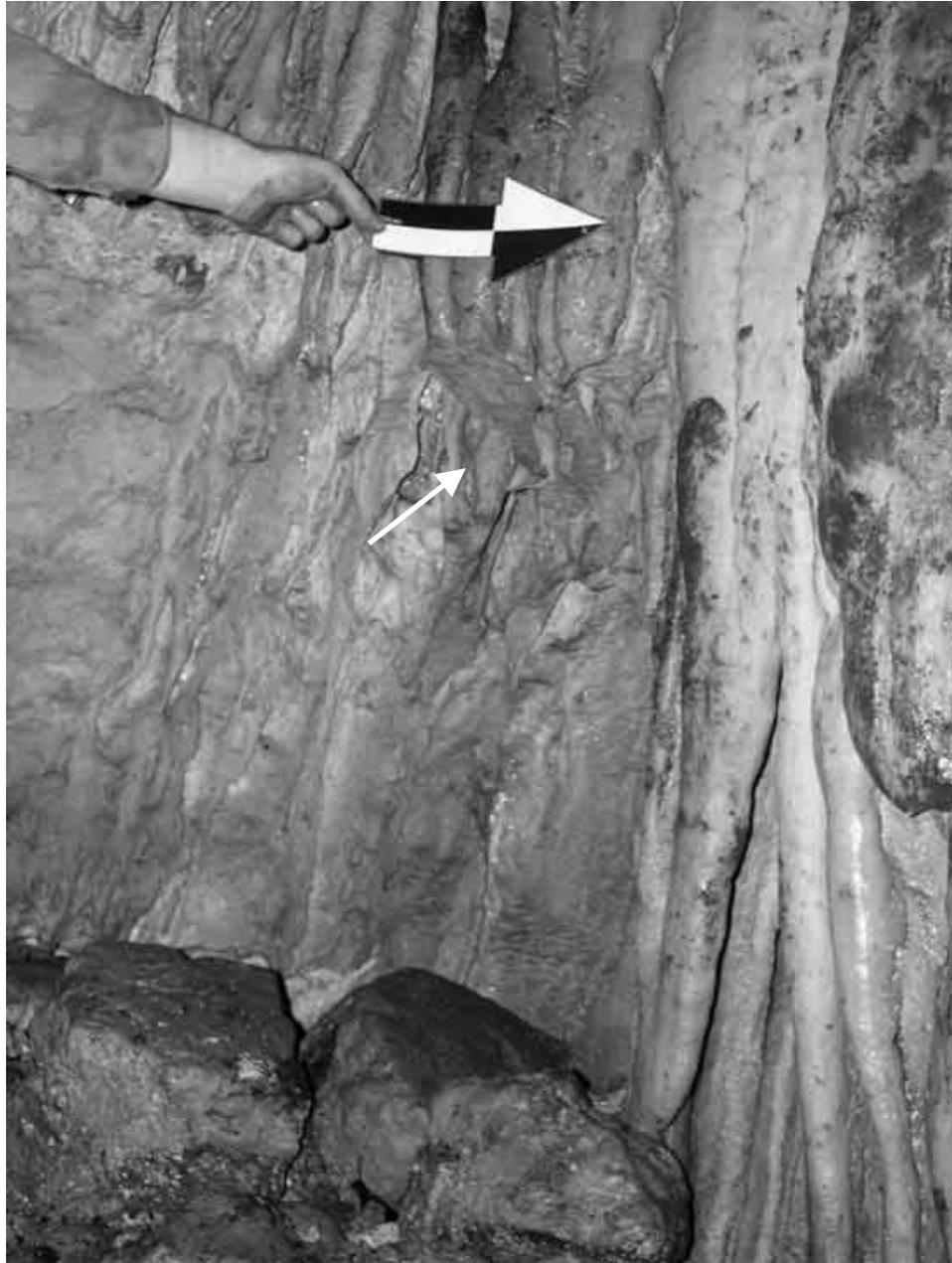


Figure 4.16. Niche created by the removal of some speleothems. Photo shows speleothem breakage SP9.

CHAPTER 5

SURFACE COLLECTIONS

During the first field season, upon completion of the map of the Grieta Principal and Grieta Rincón, surface collections were conducted in areas with high concentration of artifacts and bone on the surface. Efforts focused on the southern portion of the Grieta Principal, particularly since the majority of these areas were mapped in detail during the first season. Artifacts in the northern portion of the Grieta Principal were not collected because most of the northern half is overgrown with vegetation and has thick deposition of mud, and a systematic collection would not have been easily achieved. The Grieta Rincón was also surface collected, although some human bone and faunal material could not be collected because calcite deposition had cemented them to the cave floor.

Contextual designation follows the system used by the Aguateca Archaeological Project and is organized hierarchically. It is written as a string of letters and numbers: Site Operation – Suboperation – Unit – Level – Lot. For example, “AG31A-11-1-2” would signify “Aguateca Operation 31, Suboperation A, Unit 11, Level 1, Lot 2.” The current project encompassed two operations; the Grieta Principal was designated Operation 31, and the Grieta Rincón, Operation 30. A suboperation refers to investigations in a relatively large geographical unit defined, in this program, as a contiguous set of chambers and passages confined by natural morphological features. Suboperations are designated with a capitalized letter. Operation 31 had a total of five suboperations from A to E, and Operation 30 had two suboperations, A and B. The next level of investigation is the unit, represented by a consecutive number within each suboperation. Units refer to excavation pits as well as subdivided areas within a suboperation that were surface collected. Units are further divided into levels and lots. Levels refer to cultural and arbitrary levels during excavation (see Chapter 6). For the surface collection program, cultural material

was assigned Level 0 (zero). Lots are the smallest spatial component and may consist of cultural features such as hearths and caches. Levels are represented by consecutive numbers within each unit, and lots are consecutive numbers within each level.

Grieta Principal

Suboperation 31A: Hidden Jar Area

Suboperation A consisted of eight units, which covered the whole of Chamber 2 (Inner Chamber or Chamber of the Hidden Jar) (**Figure 5.1**). Unit 1 included the central boulders that bifurcate the chamber into roughly east and west halves. Numerous sherds, faunal remains, and a small obsidian blade fragment were collected from atop the boulders, and a few sherds were found west of this boulder. Additionally, under the large boulders in the area west of Wall 4, the complete rim and upper portion of a short-necked jar were found (**Figure 5.2**). The upright vessel was cemented securely onto a rock by calcitic deposition, but we managed to recover some body sherds. Its short neck measures approximately 2 cm high and its rim diameter is approximately 10 cm. Its hard paste is calcitic, the body sherds were relatively thin and had a well-preserved Peten Gloss slip. Although the rim could not be examined closely, I tentatively assign it to the Caribal Red type. A similar jar is illustrated in Adams (1971:Fig.25c). It was speculated that the pile of rocks along the *grieta* wall may have been a blockage to a lower chamber, possibly as a termination effort, since it appears that the chamber floor may actually be deeper (**Figure 5.3**).

Unit 2 consists of the lower (southern) part of the muddy slope that extends from the entrance to the surface. Sherds, human bone, a figurine fragment, and a bone disk were recovered. Unit 5 covers the upper (northern) part of this same slope, and the two units are delineated by two slabs of limestone boulders (not shown on map) that run roughly east – west halfway along the slope. From Unit 5, sherds and animal bone were collected. The surface of the slope is covered in a thick layer of wet, viscous mud that has undoubtedly flowed from the Outer Chamber north of

this slope, where it is exposed to the elements. Thus I suspect the materials from these two units have moved from their original place of deposition.

Unit 3 encloses the northeastern corner of the chamber, atop the possible platform. One of the more important finds here was a partial jar, placed inverted in a crevice behind a partially spalled part of the cave wall (**Figure 5.4**). Even when one knows the cave wall is spalled and the jar is wedged behind, it is difficult to see this unless one is adjacent to the cave wall by this crevice. The jar is of a Pantano Impressed type, and its red slip has preserved well under the thin layer of gray-colored calcite deposition, presumably from dripping water. About 50 % of the vessel is represented, with the entire rim and neck intact. A closer look along the broken edge, halfway down the body, reveals that the vessel had been “killed” in the form of a small circular hole, perforated from the jar’s outer side. Its hidden placement leads me to suspect that this jar was found in its primary context. Moreover, I was unable to locate the remainder of the vessel in the immediate area near this jar, which suggests that the jar was broken elsewhere and part of the vessel was purposefully placed in this location. Noteworthy is a stalagmite that has grown on the spalled portion of the *grieta* wall. This stalagmite is the only stalagmite that is present in the eastern side of the chamber. As well, its phallic form may have been significant to the ancient visitors. Faunal material and carbon were found along the cave wall near this jar.

Unit 4 contains the area east of the central, large boulders, and faunal material and sherds were found. Unit 5 was described above. Unit 6 encompasses the Alcove that extends northwest of the chamber (**Figure 3.6**). An intact human pelvis was found under the eastern overhang and numerous jar body sherds were found along the western cave wall. At the southern end of the passage, just north of a possible alignment of stones, was a partial tripod polychrome dish placed inverted on the floor. Numerous sherds were found on top of and around this partial dish. Unit 8 (note Unit 7 does not exist) is the passage that extends south of the chamber, more

specifically the part of the passage that is covered in flowstone. A bulbous foot of a tripod dish was collected there.

Suboperation 31B: Two Owls Area

Suboperation B included five surface collection units (**Figure 5.5**). Unit 1 was designated for surface collection in Passage 1 and four lots were established. Lot 1 contains Passage 1 in its entirety except for the more specific lots assigned within this area. Faunal remains, a fragment of a quartz, and sherds were collected from Lot 1. Among the sherds, a stuccoed sherd with blue paint was encountered as well as a polychrome drum sherd. Lot 2 consisted of disarticulated human and faunal bone concentrated in the southwestern part of the passage, in the western mud wall adjacent to the passage ceiling. The bones were exposed in the deep mud that comprises the floor of the passage that parallels Passage 1 on the west side. The human bone was collected as Interment 22, but its depositional history is unclear. Lot 3 consists of the hole in the floor along the east cave wall where the mud floor has begun to collapse and limestone rocks beneath are exposed. Large sherds of a Tinaja Red jar were collected.

Lot 4 is a possibly modified shelf or ledge along the eastern cave wall facing the east side of Wall 1 (**Figures 5.6 and 5.7**). The upper edges of this ledge show smoke-blackening, and a small fragment of shell was found on the ledge. It is possible that this ledge was used as some sort of offering place like an altar, particularly because it is located at the access way to the passage. About 3 m south of this ledge is another part of the *grieta* wall that shows smoke-blackening (**Figure 5.8**). A polychrome drum fragment was found on the surface in the flat area of the passage in front of this smoke-blackened area. It is noteworthy that Passage 1 contained the highest quantity of artifacts and bone in the Two Owls Area.

Unit 2 consists of the area north of Wall 1 and south of Wall 2 and Step 1. Two or three possible terraces or steps leading down into the chamber are observed, but the presence of

breakdown rocks have made it difficult to identify. The presence of tree trunks in this area also suggests that much material falls in from the surface, though it should be noted that previous consolidation projects may have dropped in such material as this is in close proximity to the Plaza Principal where they were working. Even though this lot appears to have accumulated material dropped in from the surface site, the quantity of artifacts was minimal: faunal material, quartz, and sherds were collected. Unit 3 encompasses the area north of Wall 2 and Step 1 up to Passage 2. Similar to Unit 2, this area is carpeted with limestone rocks and not much material was encountered: sherds and faunal remains were collected.

Unit 4 encompasses Passage 2 (Rocky Passage), a narrow and low passage with limestone rocks (10 – 30 cm) bearing the floor with no dirt matrix observable. Disarticulated human bone was encountered in several loci within the passage and was collected as Interment 23. Also found were polychrome sherds and a shell fragment. Unit 5 consists of the ledge that runs roughly north – south along the western cave wall at a level a few meters higher than the chamber floor. Sherds and faunal material were collected. It can be speculated that this may have been the northern access way into the chamber in ancient Maya times and possibly a ladder was placed atop or by Wall 2. We used a metal cable ladder because there is not an easy access into this chamber from the north.

Toward the end of the season, two sherds were recovered as Unit 15 from the Cave Under the Bridge. Nick Johnson observed that the morphology of the cave, that is, the relatively lower elevation of the entrance compared to the back part of the cave, suggests that the sherds could not have washed in naturally and thus they were brought into the cave.

Suboperation 31C: Southern Entrance Area

Surface collection for the Southern Entrance Area was divided into six units. Unit 1 consisted of the slope that begins at the *grieta* entrance and extends to the point at which one

must climb. There are possible steps coming down into the *grieta* along the slope (**Figure 5.9**) but like many other entrance slopes, the abundance of breakdown rocks in the area hinders a secure identification. Animal bone, sherds, and a mano fragment were found. Unit 2 is a narrow and low passage (crawlway) that begins part way up the climb at the north end of Unit 1 and winds around twice, ending up in the Southern Entrance Chamber east of the hole nicknamed Pozo de Brad. A shell disk, sherds, and faunal material were collected.

Unit 3 encompasses the Upper Chamber, and was divided into three lots. Lot 1 consisted of the entire chamber. Lot 2 was specifically a small alcove in which a complete miniature Pantano Impressed jar and rim and base sherds of a Saxche-Palmar Polychrome bowl were found (**Figure 5.10a, b**). These sherds were painted with a poorly executed WINIK glyph (T521) in addition to other pseudoglyphic elements around the rim (Markus Eberl personal communication, 2004). The worn interior side of these sherds suggests use before being deposited here. The alcove was reached by following a declining narrow passageway formed along the eastern *grieta* wall and topped by a large flat limestone rock (**Figure 5.11**). The alcove was accessed from its ceiling via a small hole through which only one arm would fit. The alcove floor was at roughly 80 cm below this hole. It is likely that the alcove had another access way at the time of deposition but subsequently had been blocked up, either intentionally or naturally. Lot 3 was assigned to Carmelita Incised vase sherds found in loose brown clay along the east cave wall east of Pozo de Brad (**Figure 5.10c**). This vase revealed an incised pseudoglyphic band around its rim.

According to Christophe Helmke, this pseudoglyphic band is comprised of the repetition of a single pseudoglyph, the so-called “Lu-Bat” collocation, which is closely associated with carved/gouged/incised vessels and may be a rendition of *y-uxul* (“it is the carving of”). Helmke suggests that, even though the text uses pseudoglyphs, the vessel may have been incised

by a moderately literate potter who copied a viable Primary Standard Sequence text (Helmke, personal communication, 2004).

Unit 4 consisted of Passage 4 (Nasal Passage), which slopes steeply downward from the north end of the Upper Chamber, and where Wall 3 is located. This unit ends at the bottom of the slope where a side passage branches off southwardly paralleling this passage. Human and animal bone, sherds, and chert were found. Unit 5 is the side passage west of the steep slope. Human bone and sherds were collected. Unit 6 consists of a fissure that can be accessed from about 10 m above Wall 3, and extends roughly north – south. Some sherds were encountered on a small ledge in the cave wall.

Grieta Rincón

Suboperation 30A: The Cave

As described in Chapter 3, the cave in Grieta Rincón consists of four overlapping levels, the upper two of which contain archaeological material (**Figure 5.12**). In the Lower Passage of the second level (Unit 1), human cranial fragments were found clustered in the central area and additional cranial material as well as vertebrae extended toward the northeastern cave wall (Lot 2). In this same area along the cave wall, a complete turtle carapace was found naturally cemented onto the wall by calcite deposits from dripping water; it was only partially recovered. It may have functioned as a drum. Further north under a large rock (presumably fallen after the bones were deposited) was bone circumscribed in a half-moon shaped area by rocks and the cave wall. These were initially recovered as an human interment but later identified as animal bone (Lot 3) (**Figure 5.13**). Some fragments of bone as well as sherds were found in the southern end of the passage (Lot 1). All of the human bones were collected as Interment #20.

On the central ledge of the first level (Unit 2), human remains including a pelvis and skull, very few sherds, and faunal material were found. Some of the bone could not be collected

as they were entirely calcified and cemented to the ground. In the Upper Chamber of this level, designated as Unit 3, ceramic sherds, chert, a speleothem fragment (significant because there are no cave formations in the immediate area), some faunal remains, and very small amounts of carbon were found. A possible low platform was also encountered (**Figure 5.14**) (see Chapter 6 for detailed description).

Summary

The archaeological material collected during the surface collection program revealed their excellent state of preservation, especially when compared with material found at the surface site. This is typical of caves, but was not entirely expected from the Grieta Principal because of its open nature in some areas. The distribution of the surface collected material provided the basis for the location of excavation units.

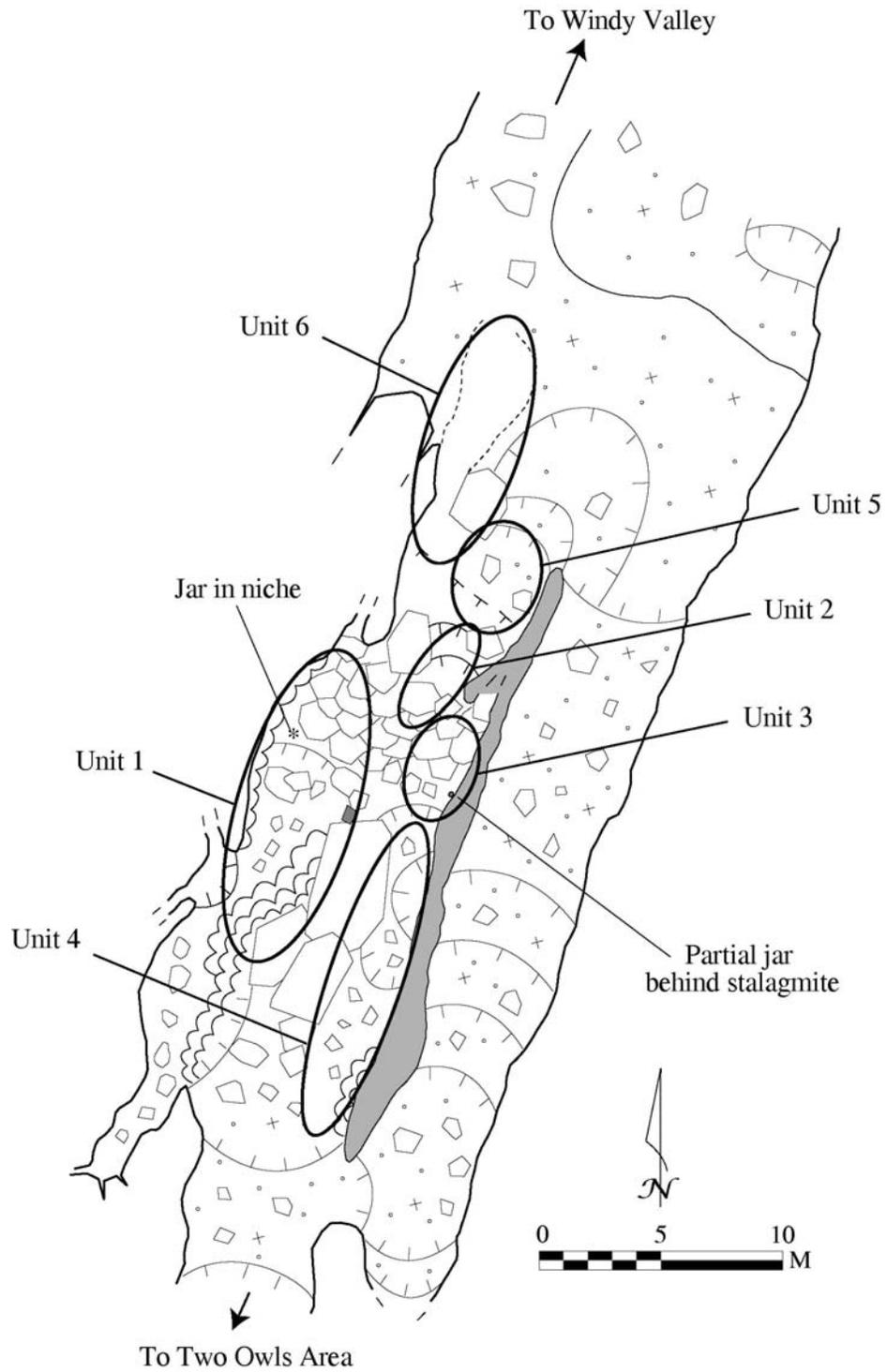


Figure 5.1. Map of the Hidden Jar Area (Suboperation 31A), showing locations of the surface collection units.



Figure 5.2. Photo of the jar that was found under boulders, cemented to a rock by calcite.



Figure 5.3. Photo of the general area of the jar found under boulders, cemented to the rocks by calcite. Note the stack of rocks that may cover a chamber below.

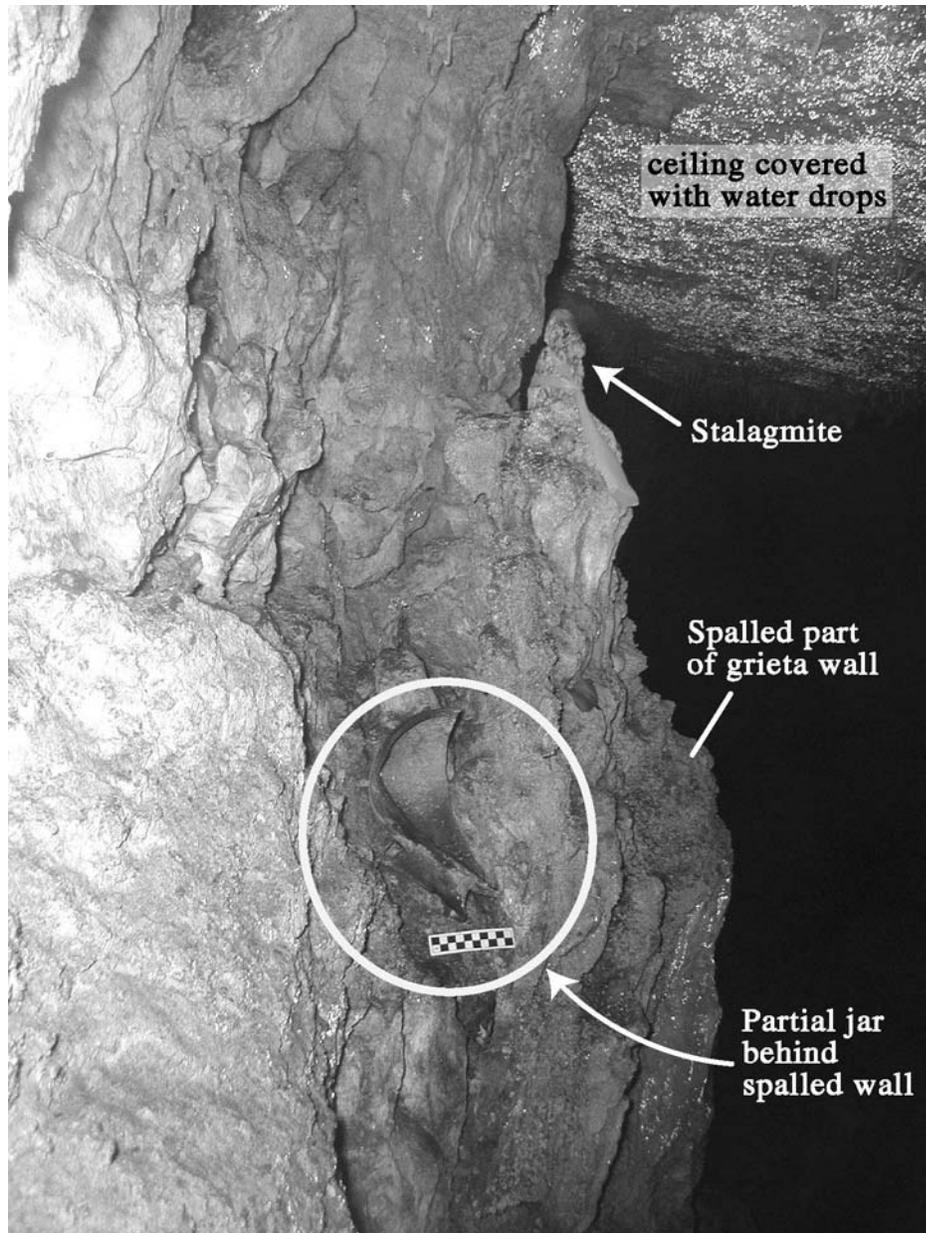


Figure 5.4. Photo of the partial jar (Pantano Impressed type) *in situ*, behind a spalled part of the *grieta* wall and below a stalagmite.

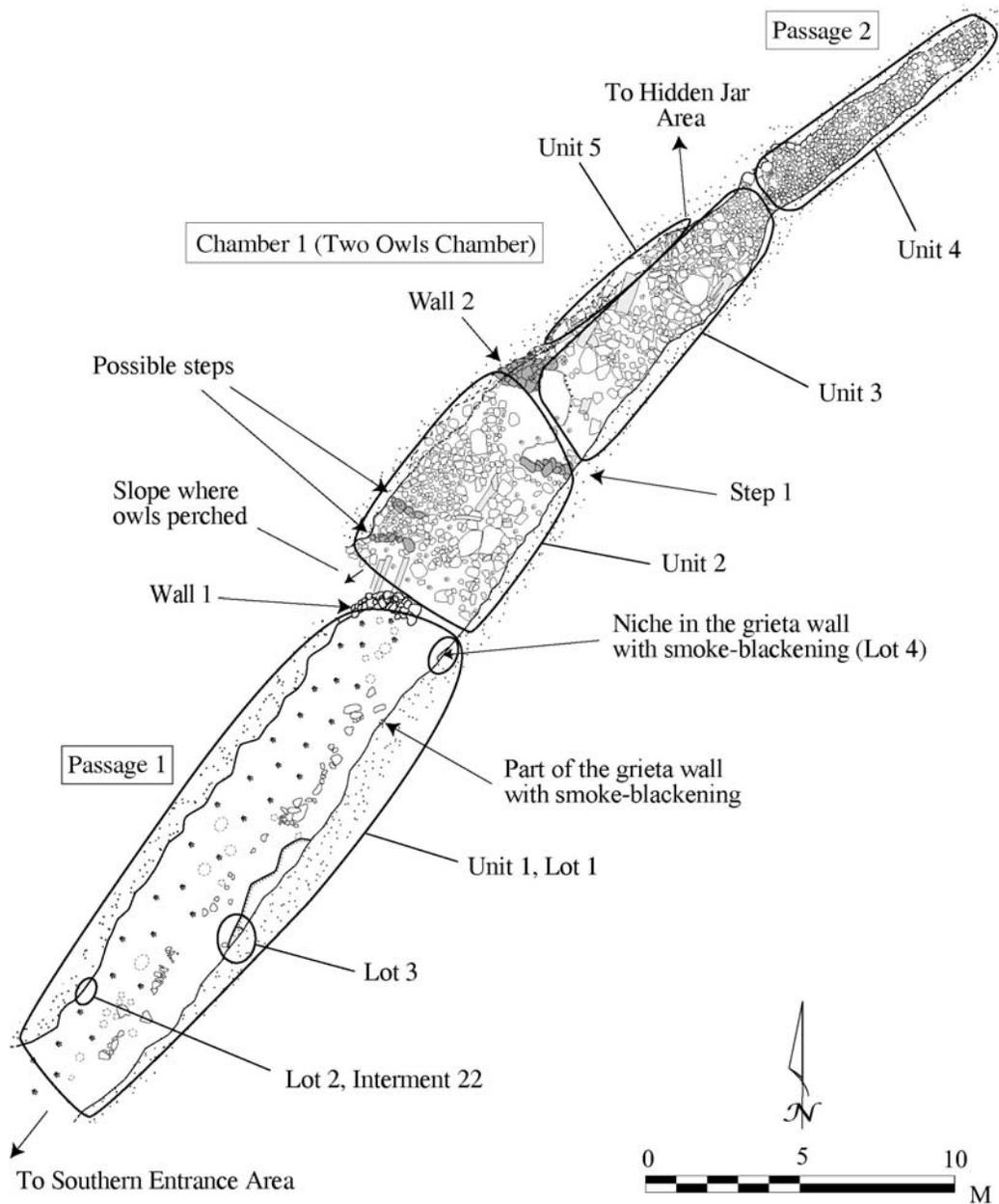


Figure 5.5. Map of the Two Owls Area (Suboperation 31B) showing locations of the surface collection units.

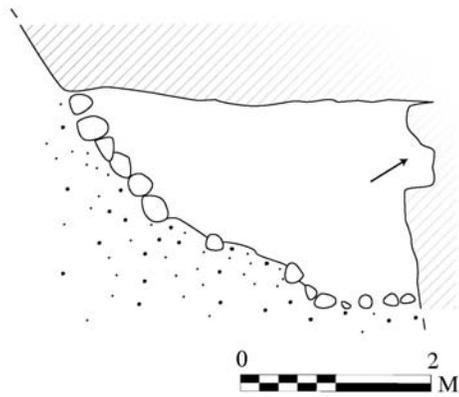


Figure 5.6. Profile of Passage 1, looking north, showing the niche with the possibly modified ledge which has smoke-blackening.



Figure 5.7. Photo of the niche with smoke-blackening, Passage 1. The arrows show where it is smoke-blackened.



Figure 5.8. Photo of the smoke-blackened wall in Passage 1 south of the modified niche.

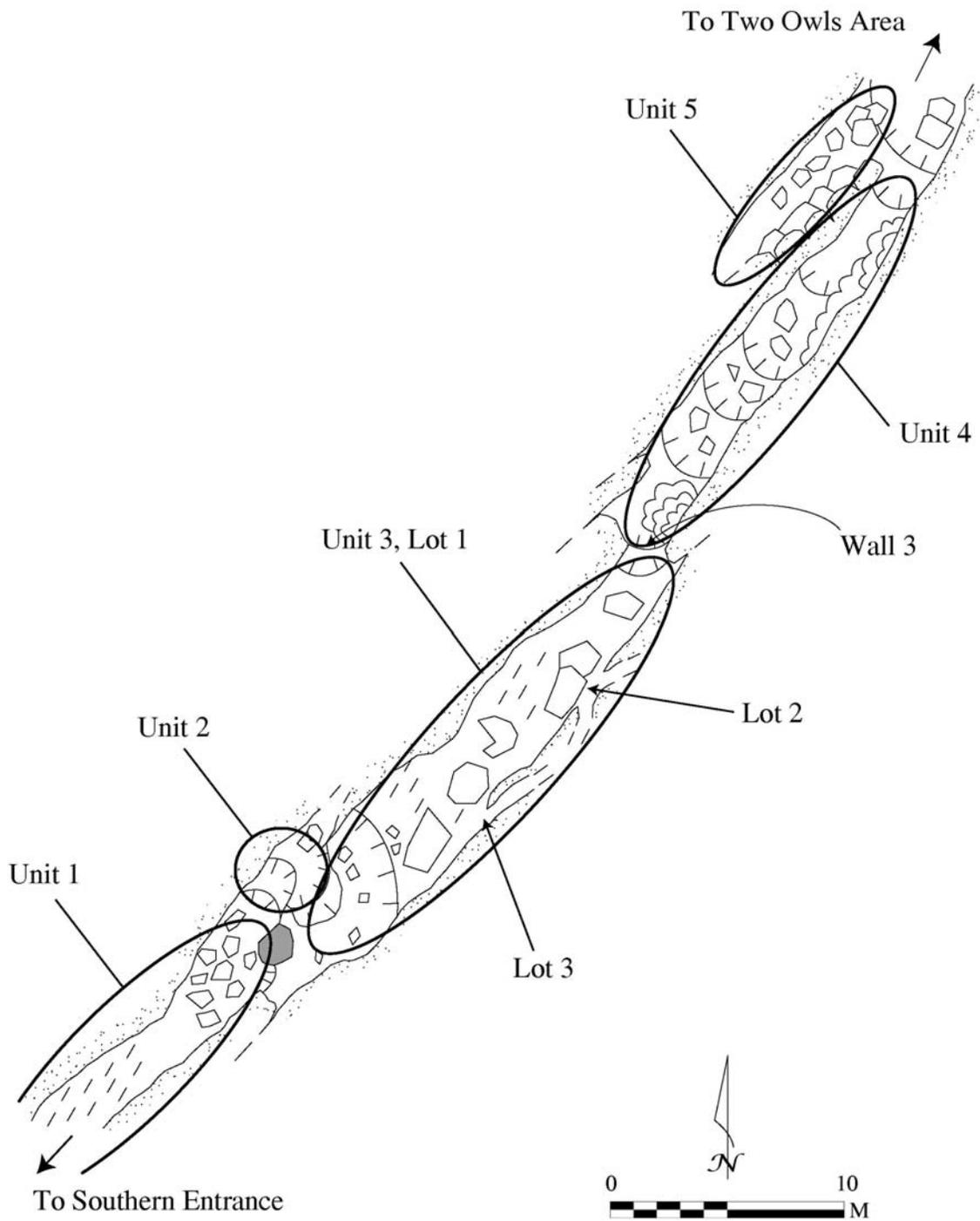


Figure 5.9. Plan of the Southern Entrance Area, showing the locations of the surface collection units.

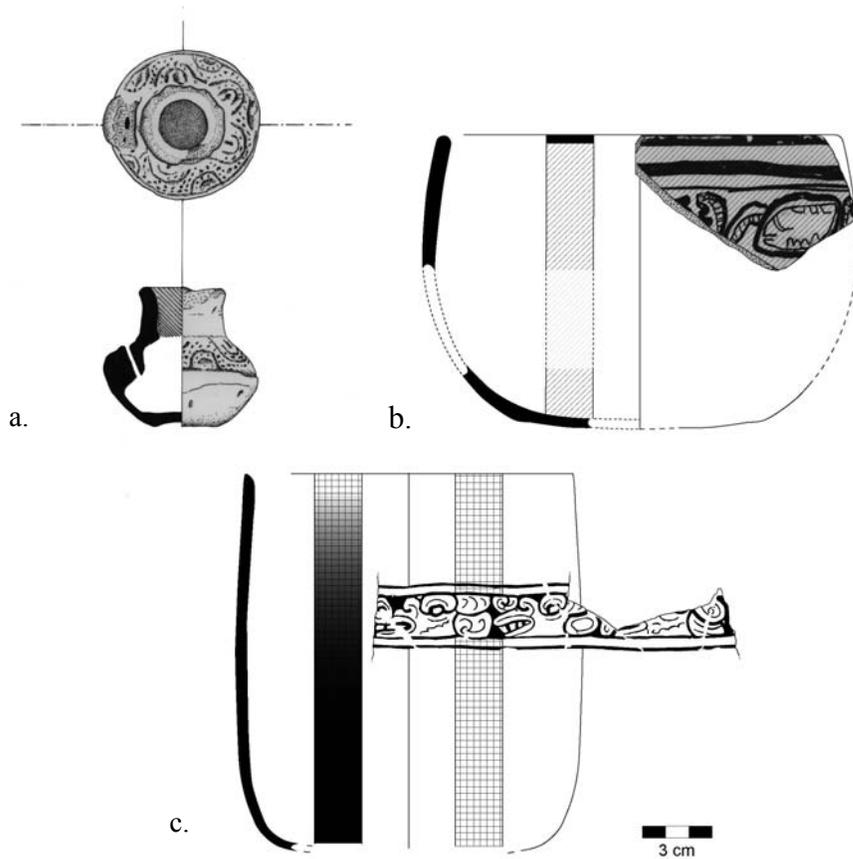


Figure 5.10. Artifacts surface collected from the Upper Chamber, Southern Entrance Area: a. miniature Pantano Impressed jar (AG31C-3-0-2); b. Saxche-Palmar Orange Polychrome bowl (same lot as a.); c. Carmelita Incised vase (AG31C-3-0-3). Drawings a and b by Hiro Iwamoto; drawing of pseudoglyphic band by Christophe Helmke.



Figure 5.11. Photo of area where miniature jar and polychrome bowl sherds were found. Arrow shows the modern access way.

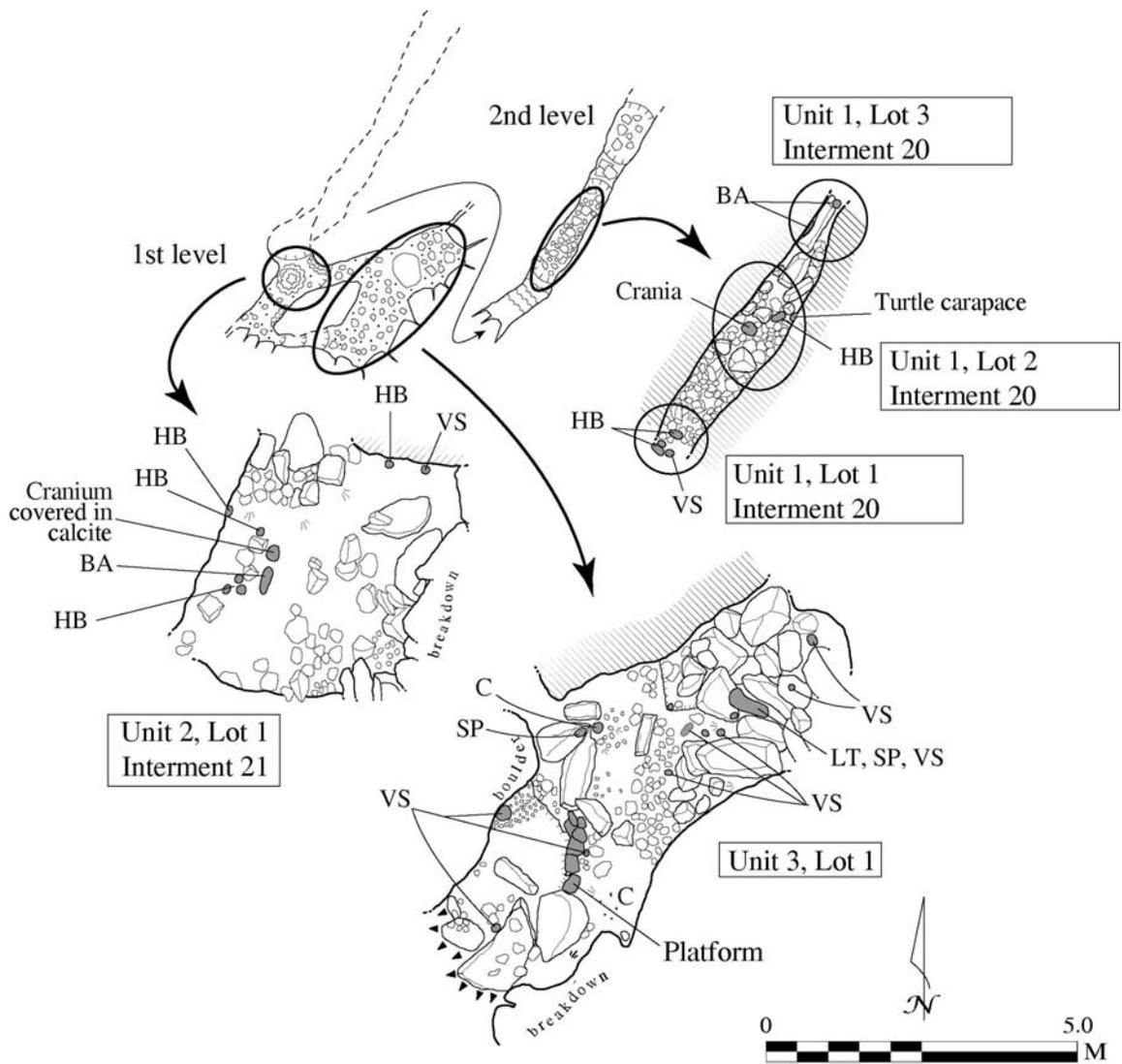


Figure 5.12. Plan map of Grieta Rincón, showing locations of surface collection units and lots.

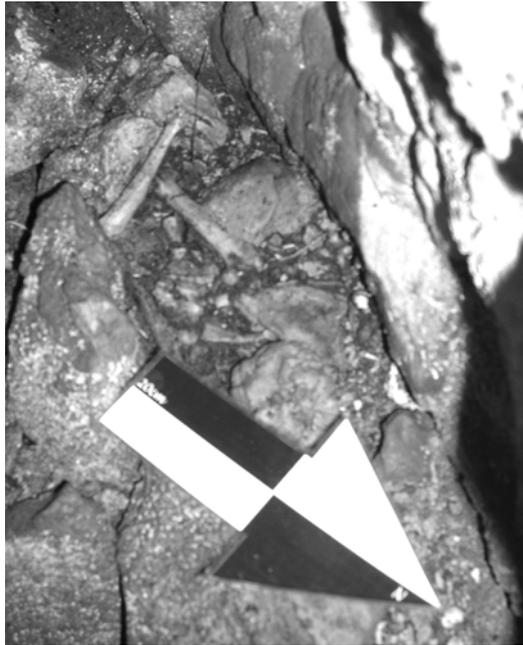


Figure 5.13. Photo of faunal material found in an area of Grieta Rincón (Op. 30A, Unit 1, Lot 3), delimited by stones placed in an arch shape along the *grieta* wall.

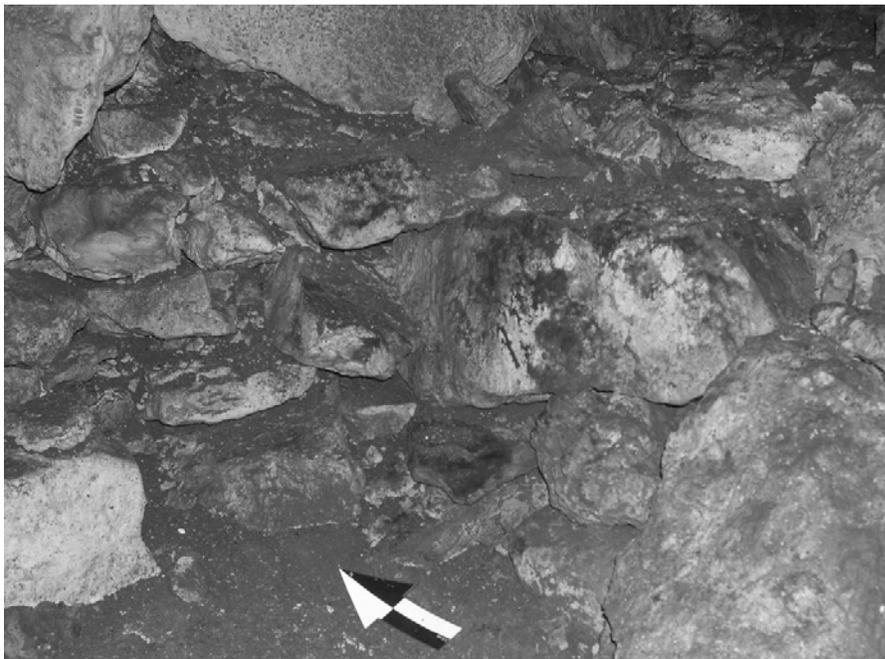


Figure 5.14. Photo of the platform feature inside the cave of Grieta Rincón.

CHAPTER 6

EXCAVATIONS

A total of 33 excavation units were opened, including 29 in the Grieta Principal and 4 in the Grieta Rincón (**Table 6.1**). They were placed in many of the morphologically distinct areas throughout the Grieta Principal, and units were dug in both the cave component and the *grieta* at Grieta Rincón. The basic goal was to test enclosed, dark spaces as well as open and exposed spaces, as it was hypothesized that the uses in the former were likely to be comparable to ritual cave use while the latter types of spaces may have been used for other non-religious functions, such as daily trash disposal places and mass graveyard of those that died in the battle that presumably ensued when the site center was attacked and burned.

Excavations were conducted using five hundred watt halogen lamps run by a generator as primary sources of light unless there was sufficient sunlight, while excavators also used headlamps (Black Diamond Lunar models), with incandescent bulbs so as to minimize soil color distortion. Both natural and cultural levels were used; arbitrary levels were used in Units 6 and 7 of the Two Owls Area during the first field season. The matrix was screened only when possible (i.e. Unit 10 in the Hidden Jar Area, Unit 9 in the Southern Entrance Area) because the majority of the matrix encountered was wet clay. Thus, excavators checked the matrix by hand prior to relegating it to the backdirt pile. Lot forms that were developed for excavations in cave settings were used; these were adapted from those developed and used by Dr. Jaime Awe's Western Belize Regional Cave Project, of which the author was a part (**Figure 6.1**). Artifacts and other cultural material such as bone and carbon were collected and placed in bags according to artifact type. Artifact type codes designated by the Aguateca Archaeological Project were used and are listed in **Table 6.2**, with additional codes such as HB for disarticulated human bone and SP for speleothems to reflect cave assemblages. A total of 96 soil samples and carbon samples were

collected and cataloged in the paleobotanical sample log. Aside from the carbon samples that were submitted for AMS analysis, the samples were subjected to floatation, and macrobotanical remains were collected using a water hose, a large bucket, and mosquito netting. These samples were sent to Christopher Morehart, a graduate student at Northwestern University, for analysis and results are pending.

In an effort to develop skills that might be useful in future careers, all the workers in the *grieta* were taught to map and draw unit plans and profiles. Not all the workers liked to map, but many enjoyed it, and with some practice, became competent so that only a final review by the supervisor was necessary. This not only benefited the supervisors but we believe also gave the workers an increased sense of responsibility.

Grieta Principal

Suboperation 31A: Hidden Jar Area

Five excavation units were opened in this area: three in Chamber 4 (Units 9, 10, and 14), two in Chamber 2 (Units 11 and 12), and one in the Alcove (Unit 13) (**Figure 6.2**). A high frequency of archaeological material was collected from the surface, including an *in situ* fragmentary jar cached behind a stalagmite, and an intact wall (Wall 4) constructed in the middle of the chamber was documented during the reconnaissance (see Chapter 5). Based on the abundance of cultural material encountered in survey, the general objectives of the excavations in this area were as follows: (1) to identify activities in the partially enclosed area in front of the stalagmite where a jar had been cached, and subsequently to determine whether they were associated with rituals; (2) to assess the identification of a possible platform feature in front of the stalagmite; (3) to examine use of the more open area of Chamber 4; (4) to compare spatial use between the more open Chamber 4 and the more enclosed Chamber 2; and (5) to collect data associated with the construction and use of Wall 4.

Inner Chamber (Units 11 and 12). Unit 11 (1.75 x 1.60 - 2.45 m), an irregularly shaped excavation, was opened in front (west) of the stalagmite behind which the partial Pantano Impressed jar had been found (see Chapter 5 for details). This area is covered almost entirely by limestone rocks, and was speculated to have been modified into a platform. The objectives of the unit consisted of (1) and (2) listed above. Evidence of activities in this part of the chamber was further suggested by carbon on the surface close to the *grieta* wall, and the area's importance may in part be due to the fact that this area is wet with small but active stalactites on the ceiling.

Level 1 (lot 11-1-1, 4 – 25 cm thick) was comprised of a black, very wet clay with no inclusions aside from the large rocks on the surface (**Figure 6.3**). In the southeast corner of the unit, a concentration of sherds, a rasp made of a human femur (Kitty Emery, personal communication, 2006), a bone pick, some faunal material, human bone, and carbon were found (lot 11-1-2). Level 2 consisted of a very wet, compact, dark brown (10YR 3/3) clay (lot 11-2-1, 27 – 47 cm thick). An articulated partial skeleton consisting of vertebrae and ribs (Interment #51) was revealed below but slightly north of the cited artifact cluster. Fragments of human bone, 3 *Pomacea* spp. shells (2 of which are perforated), sherds, an obsidian blade fragment, a chert flake, and a limestone spindle whorl were collected from this level.

Three concentrations of sherds were found in level 2 (lots 11-2-2, 11-2-3, 11-2-4). In addition to the carbon lens in level 1, thick carbon and ash lenses were exposed in the southern part of the unit (lots 11-2-3, 11-2-5). The deepest carbon and ash lens, located 69 – 83 cm below surface and measuring 20 cm thick, revealed a radiocarbon date of AD 555 – 658 (2-sigma, AA71120) (**Table 6.3**), suggesting Early Classic use of the area. Although no ceramics were collected in association with this carbon lens because it was only detected in the baulk, a relative abundance of Early Classic ceramic types was observed from this unit. It is notable that although the majority of the unit is covered with large rocks, a narrow area parallel to the *grieta* wall is

generally devoid of such rocks, and much of the cultural material was found in this eastern part of the unit along with the southwestern quadrant. Thus it may be that rocks had been moved to make room for the activities or the deposits may represent sweeping and cleaning of the area, a common behavioral pattern prior to modern ceremonies (Guerra and Ishihara 2006a; Guerra and Ishihara 2006b; Scott and Little 2003; Stross 1998). Though no architectural fill or core was encountered in this unit and identification of a platform construction could not be confirmed, I believe that this space had indeed been modified based on the unnaturally flat and elevated surface. Excavation was terminated at 80 – 100 cm below surface, when the bottom of the unit was covered in the large rocks and could not be removed.

Unit 12 (1.20 x 0.90 m) was located directly west of Wall 4. The objective of the unit was to examine the function of the architectural construction as well as a temporal framework for its use. The unit was placed on the west of the wall because the large slab of rock that the wall sits atop extends farther out on the east side with no matrix to excavate.

This unit contained two levels (**Figure 6.4**). Level 1 (lot 12-1-1, 10 – 28 cm thick) consisted of a wet, black clay with numerous medium-sized rocks (up to 40 cm), which could be seen on the surface prior to excavation. Sherds and faunal material were collected. Level 2 (lot 12-2-1, 34 – 68 cm thick) consisted of a dark grayish brown (10YR 4/2) clay with some limestone inclusions (1 - 40 cm). Two complete bone needles, a chert flake, a chert pestle, 6 obsidian blade fragments, a quartz hammerstone or polishing stone, a mano fragment, animal bone, shell, human bone, and sherds were recovered. The disarticulated human remains, representing an adult of unidentified sex, consist of cranial fragments, mandible fragment, four teeth, femur and humerus fragments, ribs, and foot bones (Palomo 2007). Noteworthy is a fragmentary Saxche-Palmar Orange Polychrome bowl with a partial Primary Standard Sequence, whose stylistic rendering is similar to vessels commissioned by the early Late Classic Tikal ruler Animal Skull, as identified

by Markus Eberl (**Figure 6.5a**). This is significant because it suggests a Tepeu 1 date (AD 600 – 700) for the vessel, and may point to use of the *grieta* prior to or shortly after the building of the Aguateca site. Incidentally, the name of the owner is missing.

The unit was extended northward, roughly a 1.0 x 1.0 m unit extension, into the niche under the large, flat slab of limestone (lot 12-2-2). The level 1 matrix from the main unit was not present in the unit extension, as the single layer of soil was comparable to level 2 in the main unit. A worked bone with at least 9 perforations of unidentified function (**Figure 7.48**), reworked sherds, sherds, chert lithics, 3 obsidian blades, faunal material and a human foot bone were collected. The large limestone slab has served to protect the niche, demonstrated by the large sherds found on the surface. The unit was terminated when the larger rocks filled the unit floor and could not be removed safely. The unit reached a depth of 145 cm below surface in the northwestern corner, while the other corners reached a depth of 51 – 69 cm. It is important to note that sherds of an Early Classic Dos Arroyos Orange Polychrome refitted to a plate found in Units 11 and 12, implying that they were manually transported (**Figure 6.5b**). This suggests that these two locales formed part of one activity space, reflecting spatial movement of the participants, which is important because direct evidence of such dynamic actions rarely occurs.

Outer Chamber (Units 9, 10 and 14). Unit 9 (2.0 x 2.0 m) was placed in the southern, flat end of the Outer Chamber at the top of the muddy slope that connects to the Inner Chamber. Unit 9 was opened in order to clarify the processes that led to the final deposition of the artifacts and human bone that we found along the slope. Moreover, it was designed to examine any evidence of activities in the open area, including architectural modification of the space (i.e., platform).

The humic layer (lot 9-1-1, 3 – 11 cm thick) is a loosely compacted, black clay with almost no inclusions and was covered on the surface by leaf litter and some vegetal growth

(**Figure 6.6**). Under that was an older, more compact, browner humic layer (lot 9-1-2, 34 – 52 cm thick), containing a high frequency of limestone rocks (5 - 25 cm). At least two, maybe three, thin distinct layers of carbon were exposed, but they were not observed in the unit baulks. A figurine head of an old man with his tongue out (**Figure 6.7**, see **Figure 7.10c** for line drawing) was uncovered from this lot as well as a few sherds.

The next level (lot 9-2-1, 70 – 84 cm thick) consisted of a very dark gray (7/5YR 3/1), compact clay with numerous medium-sized (up to 30 cm) limestone inclusions. The majority of the cultural material was collected from this level. Ceramics, a figurine fragment, faunal material, ground stone, chert lithics, obsidian, and a reworked sherd disk were collected. A high frequency of disarticulated human bone (collected as Interment #47) was found at the bottom of the level, above level 3. It is noteworthy that many fragments of hand and foot bones as well as cranial and vertebrae were recovered, but no long bones. The last level, which was sterile, was comprised of a dark brown (7.5YR 3/2) silty clay with numerous medium-sized to large rocks (up to 1 m length). No artifacts were collected and the unit was ended at a total depth of 133 – 138 cm, when no more large rocks could be removed.

Unit 10 (2.0 x 2.0 m) was placed in the northwestern corner of the Outer Chamber, where it is slightly higher in elevation than the rest of the chamber. The unit is located in the access route that connects Chamber 4 with the steep slope that leads to Windy Valley. During the one-day reconnaissance in 2003, sherds including a Pantano Impressed jar were found clustered in this area, probably gathered by recent passersby through the *grieta*. It was thought that because of the good preservation of the ceramic material despite the open nature of this area, remains of activities conducted in this area may likewise be preserved. Additionally, this unit would provide comparative data to that from Unit 9 in the flat area of the chamber.

Three levels were encountered in this unit (**Figure 6.8**). Lot 10-1-1 (36 – 40 cm thick) consisted of a compact, very dark grayish brown (10YR 3/2), slightly silty clay with tiny limestone inclusions (< 1.0 mm). Some branches and leaf litter (though fewer plants than in Unit 9) covered the surface, but the lack of an organic humic layer as observed in Unit 9 suggests that site formation processes within the chamber vary. The drier nature of the matrix in this unit allowed us to screen the dirt.

In the eastern half of the unit, some disarticulated human bone and sherds were found a few centimeters below the modern surface. As these were removed, at 9 - 21 cm below surface, the articulated remains of an adult male were exposed (Interment #48, lot 10-1-2). This individual shows evidence of trauma on his left femur (Palomo 2007). The next level (lot 10-2-1, 63 – 68 cm thick) was a dark yellowish brown (10YR 3/4 - 4/4) compact, silty clay with small- to medium-sized limestone rocks (10 - 40 cm). The majority of the artifacts came from this lot, and includes ceramic sherds, faunal remains, 1 complete chert biface, other chert lithics, mano fragment, 3 river cobbles, and obsidian blades. A different matrix (lot 10-2-2, 30 – 50 cm thick) comprised of a yellowish brown (10YR5/4), silty sand with a high frequency of small to large rocks (1 - 50 cm) was encountered under lot 10-2-1, though it only extended in the west side of the unit as a narrow strip following the contour of the *grieta* wall. No artifacts were recovered from this lot. We reached large rocks that covered the bottom of the unit, and the unit was terminated at 110 – 120 cm depth below surface.

Unit 14 (1.0 x 0.92 m) was located along the eastern *grieta* wall in the open area of the Outer Chamber, at the base of the slope of collapsed rocks, an area behind Structure M8-37. The objective of this unit was also to examine the use of this open, light area. In particular, it was speculated that objects may have been thrown in from above, because Structure M8-37 has an

open-ended alleyway that leads toward the *grieta*, suggesting the presence of a hanging bridge or placement of a ladder.

This unit was distinct from the other two units in this area because six distinct levels were found here and extended much deeper (**Figure 6.9**). Level 1 (lot 14-1-1, 4 – 12 cm thick) consisted of a loose, black clay with few inclusions and some leaf debris on the surface. Level 2 (lot 14-2-1, 19 – 22 cm thick) consisted of a highly compact, very dark grayish brown (10YR 3/2) clay with very few inclusions. Only 2 and 5 sherds were collected from the upper two levels, respectively. Level 3 (lot 14-3-1, 41 – 48 cm thick) consisted of a highly compact, very dark gray (10YR 3/1) clay with very few inclusions. Sherds, chert flakes, a mano fragment, and a human rib bone were found.

Level 4 (lot 14-4-1, 31 – 44 cm thick) consisted of a very compact, very dark gray clay (2.5Y 3/1) clay with very few inclusions and occasional medium-sized rocks (up to 20 cm). A concentration of Subin Red or Chaquiste Impressed miniature (?) bowl sherds was found in the southwest corner (lot 14-4-2). Some carbon was found about 30 cm northeast of these sherds. Level 5 (lot 14-5-1, 34 – 44 cm thick) was comprised of a highly compact, very dark grayish brown (10YR 3/2) clay with few very small inclusions (< 1 - 5 mm). Early Classic sherds were collected among chert lithics, quartz or flowstone, 3 obsidian blade fragments, a figurine fragment, and worked shell. A small speleothem was also recovered, and this is significant because there are no speleothems in this area. A sherd cluster was found 152 cm below the surface in the northeast corner along the *grieta* wall, and was designated as lot 14-5-2. The unit was extended toward the *grieta* wall 30 cm, as an overhang was exposed along the bedding plane of the *grieta* wall. In this extended area adjacent to the *grieta* wall, fragments of a Chaquiste Impressed bowl were found (lot 14-5-3). An arbitrary level was introduced and assigned to lot 14-5-4, comprising the last few cm of level 5, when sherds of possibly earlier types started

coming out. Level 6 (lot 14-6-1, 60 – 96 cm thick) was comprised of a highly compact, brown (10YR 4/3) slightly silty clay with numerous tiny inclusions (< 1 - 3 mm). Sherds and faunal material were collected. Excavation was terminated at 212 – 240 cm below surface, when large rocks were encountered and could not be removed by hand.

The Alcove (Unit 13). Unit 13 (1.75 x 1.75 m) is located at the southern end of the Alcove (originally designated as Passage 5). An inverted dish fragment and disarticulated human remains were surface collected in 2004. The objective of the unit was to recover other associated remains that may indicate the use of this crawlway. Moreover, the unit was to confirm the identification of a low platform, which may have been constructed at the south end (**Figure 6.10**).

This unit consisted of three levels and numerous lots (**Figure 6.11**). Level 1 (lot 13-1-1, 4 – 36 cm thick) consisted of a loosely compacted, wet, black clay. Only a few sherds and chert were collected. Level 2 (lot 13-2-1, 2 – 9 cm thick) consisted of a compact, dark brown (7.5YR 3/2) clay with few inclusions. Sherds and a human rib and pelvis were recovered.

The majority of the cultural material originated from level 3 (lot 13-3-1; 15 – 41 cm thick in south side, 84 - 115 cm thick in north side), a compact, wet, very dark gray (7.5YR 3/1) clay with some small inclusions (5 - 10 mm) and numerous medium – large rocks. Several concentrations of artifacts were found within this level and designated as distinct lots (**Figure 6.12**). The greater majority of artifacts were found in the northern part of the unit, or atop the platform or altar surface. The artifact clusters contained sherds, worked bone, disarticulated human bone, faunal remains, and chert lithics.

A large carbon and ash lens was revealed in the north baulk (**Figure 6.11**), which probably horizontally spanned the platform surface. Its radiocarbon date revealed calAD 383 – 539 (**Table 6.3**). Lots 13-3-6 and 13-3-10 are directly under this carbon lens, and they are almost entirely composed of Late Preclassic ceramics. Lot 13-3-6 which lies above the carbon lens

contains Early Classic ceramics in addition to jar sherds with fine striations, indicating an Early Classic or possibly early Tepeu 1 date (based on the jar sherds) (Inomata, personal communication, 2005). The matrix change in level 2 seems to suggest use after the arrival of the Aguateca dynasty, as almost all the polychrome plates in levels 1 and 2 are flat-based plates, indicative of ceramics dating to the Tepeu 2 phase.

It is notable that no obsidian was found and the amount of chert is very small. No figurines were found either. Noteworthy is the high frequency of human pelvises, some of which show cut marks that may indicate dismemberment. These observations suggest differential activities taking place depending on the area within the *grieta*. Also of importance is the relatively high frequency of Preclassic sherds (17%, n=130).

Summary. The two distinct types of space, namely the more open, lighter Outer Chamber and the more enclosed, darker Hidden Jar Chamber, probably supported different activities as the artifact assemblages indicate. The sizable quantity of human remains in the Outer Chamber requires further scrutiny, as this area uncovered one of the highest frequency of human skeletal elements and MNI. The unusually high number and preservation of foot and hand bones is also intriguing despite their presumed exposure to the elements. No architectonic constructions were detected in the open space.

In the Inner Chamber, there were at least two distinct activity areas: the platform area where the jar had been cached and the area west of Wall 4. The platform area, which probably is only a slightly modified area and not fully architectural by definition, was likely significant because of the presence of drip water and the stalagmite, which is one of the few accessible speleothems in the *grieta*. Much burning activity took place here as well as the interment of a partial individual, which may have been decapitated based on a cervical vertebra showing cut marks (Juan Manuel Palomo, personal communication, 2006).

In the area to the west of Wall 4, the niche was an important area possibly during the Tepeu 1 phase. The partial Saxche-Palmar Orange Polychrome bowl with a Primary Standard Sequence may have been deposited here when the Dos Pilas-Aguateca polity was established. Wall 4 may have functioned to block or restrict access between the east and west sides of the chamber, confine the space around the niche, or as the excavators suggested, provide steps to facilitate access down to the niche. The wall may have had multiple functions. Since it was constructed up to the same height as the adjacent large slabs of limestone, it may have also served as part of a platform retaining wall that would have spanned the northern part of chamber. This function may also be attributed to a small stack of stones found to the west of the limestone slab that forms the ceiling of the niche (**Figure 6.4**).

The Alcove, located between the two chambers, had also been modified to form a low platform or altar-like area, on top of which offerings were made as the greater majority of the artifacts were recovered from this part of the unit. Large quantities of sherds were found in layers covering the surface of this altar among other cultural material including carved bone, lithics, shell, and human bone. This altar appears to have been an attractive activity area during the Late Preclassic and continued to be an important space in the Late Classic, with little activity in the Early Classic. The presence of dripping water likely added religious significance to this particular space.

Suboperation 31B: Two Owls Area

Three excavation units were opened the first season (Units 6 through 8) and six were excavated the second season (Units 9 through 14) (**Figure 6.13**). The goal of the first three test units was to assess whether ritual activities had been performed in the dark, cavern-like spaces of Grieta Principal, specifically in the Two Owls Area where architectonic construction was concentrated. During the first season, Units 6 and 7 were located in Passage 1 and Unit 8 was

located on Step 1 in the chamber. Excavations in the first season did confirm a ritual function in Passage 1, revealing an abundance of burning, an artifact assemblage resembling that typically found at cave sites, and an elaborate system of architectural modification throughout the area. The second season was aimed at expanding our understanding of the ritual activities that were performed: 1) in Passage 1, which includes obtaining data to clarify the stratigraphic sequence of the passage and assessing identification of the low rock alignment exposed in Unit 7; and 2) in Chamber 1, which consisted of examining the functions and temporal usage related to Wall 2. A unit was also placed in Passage 3 (Unit 14) to compare spatial use and its artifact assemblage, since artifacts found here may have been washing down from a different part of the *grieta* or even from the surface site.

Two Owls Chamber (Units 8, 9 and 13). Unit 8 (1.5 x 1.8 m) was opened to expose Step 1 in Chamber 1. The objectives of this unit were: (1) to expose and examine the extent of the architecture; (2) to examine the construction techniques and any previous phases of construction; and (3) to obtain temporal information from the ceramics used in or associated with the construction.

Step 1 is located in the central part of Chamber 1 abutting the eastern cave wall. It is comprised of three courses of stone, the top course of which is approximately 0.8 m high (**Figure 6.14**). However, the coursing is only partial as the western end of the step does not have lower courses below it. The facing stones are uncut (20 - 40 cm large), but similarly sized stones were selected for the top courses. The eastern part of the step appears to have slumped down, but originally the step must have been about 1.8 m wide (approximately 2.1 m prior to excavation).

Only a thin deposition of black (5YR 2.5/1), clayey matrix (upper layer of lot 8-1-1) lies above the clay used for the mortar (lower, majority of lot 8-1-1) (**Figure 6.15**); thus there has not been much deposition since the ancient use-floor. The clay used for the mortar is of a dark

brown (7.5YR 3/2) clay with minute limestone inclusions (up to 2 mm). Artifacts found in this clay, which is the construction core of the step, include a limestone spindle whorl, 1 chert flake, 56 sherds including a Saxche-Palmar polychrome bowl with a pseudoglyphic band, and several human foot bones as identified by Palomo (2007).

Below the mortar clay (lot 8-1-1), predominantly in the southwestern quadrant and western side of the unit but also appearing as a thin layer under the core in the southeastern quadrant, two soils were encountered (both comprise lot 8-2-1 as they were not distinguished in the field). The upper soil comprised of a black (5YR 2.5/1) clay with few limestone inclusions (up to 1.0 mm) (5 – 11 cm thick), while the lower, more localized soil consisted of a dark grayish brown (10YR 4/2) clay with some limestone inclusions (up to 3.0 mm in size) (2 – 5 cm thick) (**Figure 6.16**). Two fragments of small speleothems and 8 sherds were collected. Three additional matrices were encountered but no cultural material was collected, indicating that prior to the construction of the step, there was not much activity in this particular locale. A light yellowish brown (10YR 6/4), silty, saskab-like clay (8 – 31 cm thick) with a high proportion of angular limestone rocks (2 – 10 cm in size) in addition to larger rocks (20 – 50 cm in size) covered the unit (lot 8-3-1). Below the saskab-like clay of lot 8-3-1, a reddish yellow (7.5YR 6/8) clay (10 – 14 cm thick) was found sitting atop a highly compacted, white (10YR 8/1) clay (thickness unknown) (lot 8-4-1) that was very difficult to excavate even with a geological hand pick. Excavation was terminated (72 cm below surface in the deepest, northwestern corner; 20 cm below surface in the southwestern corner) due to the hardness and lack of cultural material.

Excavations revealed that the step was constructed in a single phase in the Late Classic. Apparently, the builders incorporated large rocks and the natural slope into the construction of the step. This facilitated the construction as fewer core stones were needed and the natural slope, comprised of a large rock, acted as part of the retaining wall. Although the step retaining wall was

dry-laid, the core consists of smaller limestone rocks (0.1 - 0.2 m) mixed with a clay mortar. Small amounts of carbon were found in the upper 20 cm of the core, and artifacts were found throughout. Below the core there was no further cultural material, and excavation was terminated at 121 cm below surface in the southwestern corner, at which point the large rocks took up most of the unit.

The step width coincides with that of the access way into Passage 1 created by Wall 1. This suggests that the function of this step may have been to direct traffic or access over this step and into Passage 1, passing through the narrowed access way created by Wall 1.

Unit 9 (1.0 x 1.2 m) was placed immediately southwest of Wall 2 in Chamber 1, on what is presumably the back of the wall. The goal of the excavation was to examine the construction of the wall, including the period of construction and its function. No unit could be placed on the northeast side because the base of the wall consists of flowstone and thus cannot be excavated. The wall was left intact and excavations proceeded up to the wall on the southwest side and up to the western *grieta* wall.

Five levels were identified (**Figure 6.17**). Level 1 (lot 9-1-1) consisted of a 4 – 22 cm thick, very dark gray (5YR 3/1), slightly compact clay with a high density of small limestone inclusions (0.1 - 2.0 cm) and rocks (up to 20 cm). Sherds, lithics, and faunal remains were collected. Level 2 (lot 9-2-1) was comprised of a 4 – 10 cm thick, very dark grayish brown (10YR 3/2), wet, compact clay with fewer limestone gravel (up to 2 cm) inclusions than the previous level. Like the previous level, chert lithics, sherds, and faunal material were collected. A loosely compacted, dark gray (10YR 4/1) silty clay extended throughout the unit close to the bottom of the level, but because it was an ephemeral lens (3 - 4 mm thick) without any particular associated cultural material, no lot change was instituted.

Level 3 (lot 9-3-1) was actually comprised of two matrices, a brown clay (8 – 10 cm thick) and a light olive brown (2.5Y 5/3), silty clay (2 – 4 cm thick); however, this distinction was recognized only after excavation was completed. Not unlike the upper levels, little cultural material was found. A few sherds and some fauna were recovered. A carbon scatter was exposed in the central to central-western part of the unit.

Level 4 (lot 9-4-1) consisted of a 30 – 41 cm thick, loosely compacted, brown (10YR 4/3), silty clay with tiny limestone inclusions (< 1.0 - 1.0 mm), and contained more small to medium-sized rocks than the previous level. This level revealed the highest frequency of artifacts, including sherds, chert and quartz fragments, and faunal material. In the north-central part of the unit, a jar neck and polychrome sherds were clustered together. In the central part of the unit, some red pigment was exposed. It was submitted to the Ministerio de Energia y Minas for identification and was preliminarily identified as cinnabar.

Level 5 (lot 9-5-1) consisted of a 8 – 27 cm thick, brown (7YR 4/2), silty clay with gravel inclusions (< 1 - 3 mm). Not many artifacts were recovered from this level, though some sherds, faunal remains, and human cranial (frontal, temporal) fragments were collected. In the northern corner of the unit, at 98 cm below surface, 2 small greenstone pendants, 2 perforated dog canines, and a long, complete bone needle were encountered together (lot 9-5-2) (**Figure 6.18**). This feature lies below a layer of carbon (which was revealed in the baulk after excavation), which is just under the large rock that appears to be the foundation for Wall 2 (see **Figure 4.11**). The relative location of the cache suggests that it was placed there as a dedicatory offering prior to the construction of Wall 2. Flowstone was exposed and covered the majority of the unit. Further excavation along the *grieta* wall in between the flowstone did not reveal any cultural material, so the unit was terminated at 141 cm below surface in the deepest, southwestern corner (**Figure 6.19**).

Upon placement of the cache and subsequent burning of possibly organic offerings, a large rock was placed as the foundation of the wall, on top of which medium-sized rocks were stacked, likely dry-laid. The ceramics in level 5, which underlie the large rock, consist primarily of Late Classic types (Saxche-Palmar Orange Polychrome, Tinaja Red or Pantano Impressed, and Subin Red or Chaquiste Impressed) indicating a Late Classic construction date of Wall 2. This large rock is particularly noteworthy because the south face of it is very vertical and flat. No evidence of cut marks was observed to show that it had been worked, but the muddiness of the rock made it difficult to see clearly. The selection of such a flat rock, whether worked or not, may have served as a facing stone. Its placement so that the flat side faced south and was not covered up by the wall construction on the north side, suggest that the area to the south of this wall may have been an activity area, or at least an area of importance because of the presence of water. The *grieta* wall here was very wet, even in the dry season in February when it is not raining outside. Moreover, the flowstone under the wall construction that extends southward may have been wet and active, and was an object of veneration during the Late Classic.

Unit 13 (1.11 x 0.83 m) was opened just outside (north) of Passage 1, northeast of Wall 1, along the eastern *grieta* wall. Similar to Unit 12, the goal of Unit 13 was to provide comparative information for Unit 6, namely to examine the use outside (northeast, chamber-side) of Wall 1 compared to the use inside (southeast, passage-side) of the wall. Another purpose of the unit was to ascertain the presence of stairs that appeared to originate with Step 1 leading up to Passage 1, which in turn coincided with the width of the activity area marked by the low rock alignment in the passage.

Only one level was found in this unit and was terminated at a depth of 90 cm below surface when medium-sized rocks covered the majority of the unit bottom. It was comprised of a very dark gray (7.5YR 3/1) clay with some limestone inclusions (1 - 40 cm). Some wood debris

was observed on the surface of the unit, which likely washed in from the surface site. Some sherds and faunal material, some of which were articulated, were collected. At 11 – 14 cm below surface, disarticulated human remains (MNI = 2) were exposed (**Figure 6.20**) including a fragmented cranium (subadult), a scapula (adult), and a pelvis (adult) (Interment #27) (Palomo 2005).

Passage 1 (Units 6, 7, 10, 11 and 12): Construction of Wall 1. Unit 6 (1.50 x 3.26 m) was placed south of Wall 1 at the northern end of Passage 1, to examine the construction technique and the time of initial construction of Wall 1. Excavations revealed that not much deposition had accumulated along the southern side of Wall 1, as the modern surface roughly coincided with the base of the wall. Although we did not penetrate the construction, it appears that the wall was constructed in a single phase. No use-floors were found in association with the wall.

The series of excavation units throughout Passage 1 suggest that the whole western side of the passage was built up by depositing dirt mixed with artifacts, much like construction fill. The fill (20 – 30 cm in thickness), a dark brown to black, compact clay with some small- to medium-sized limestone inclusions (5 - 30 cm), was deposited atop the floor comprised of large rocks (20 - 50 cm), which are probably a natural part of the *grieta* as they were observed in other parts of the Grieta Principal (**Figures 6.21 - 6.23**). Excavations of the units terminated at 140 cm below surface in the western side of the passage and 40 – 94 cm below surface in the eastern side. The west side of Passage 1 was built up to the low ceiling (about 1.6 - 2.0 m from the passage floor) so as to enclose the passage. However, prior to the deposition of this dirt, a single human rib was placed atop a flat object that was found carbonized. A figurine fragment was found above and at the eastern edge of the feature along with some sherds, but these artifacts may or may not be directly associated with the feature. This cache was placed immediately below and along the

central point of Wall 1. The charcoal from this feature was submitted for AMS dating, but the resulting date shows that the sample was contaminated (see AA71119 in **Table 6.3**).

After the dirt was piled up, Wall 1 was then constructed on top of the fill at the northern end of the passage. It seems the appearance of the fill was not of much concern as it was allowed to follow its natural angle of repose, creating an irregular surface. The effect of the construction of Wall 1 was not only enclosure of the narrow passage but also separation between this enclosed space and the more open chamber. It may also have functioned to restrict access between the chamber and the passage.

At the time the construction fill was deposited, a two- to three-course high, one-course wide rock alignment was built in the passage, presumably as a retaining wall for the construction fill. Another function may have been to delineate the fill from the ritual activity space as discussed below, and further may have served to demarcate the southern and northern extent of primary activity space. It is unclear whether this retaining wall was initially built to span the entire length of the passage, but at the time of excavation, only two segmentary lines were uncovered in the central part of the passage.

The ceramics contained in this construction fill date the modification of the passage and construction of the wall to the Late Classic period. Furthermore, a 2 mm thin carbon lens was found 1 – 6 cm below surface, only in the western side of the passage, whose radiocarbon date of calAD 592 – 769 (2-sigma, AA 68568) (**Table 6.3**) suggests that the architectonic modification to this area occurred during the Late Classic period when the Dos Pilas – Aguateca dynasty established itself in this region. It seems that this western side was burned after the modifications were completed, and prior to the performance of ritual activities discussed below.

Passage 1 (Units 6, 7, 10, 11 and 12): Rock alignment and activity areas. Shortly after excavation commenced in Units 6, 7, and 11, a carbon lens was exposed at 1 – 6 cm below

surface, which covered the western side of the passage on the slope. This carbon lens did not extend into the eastern, flat side of the passage, past the rock alignment in Units 7 and 11. Although its absence may be due to disturbance from people walking through the passage, all three of the units did not reveal any remnants of carbon in the eastern side, so it is likely that the carbon was only limited to the western side. A radiocarbon date of calAD 592 – 769 (2 –sigma, AA68568) of this carbon lens accords well with the timeframe of the Dos Pilas – Aguateca dynastic presence in the area.

Remnants of ritual activities were exposed in the central part of the passage, in the eastern flat side. Both Unit 7 (1.50 x 3.10 m) and Unit 11 (1.0 x 2.05 m), in addition to Unit 11-extension (6.6 x 0.8 m), encompassed these remains (**Figures 6.24, 6.25; see also Figures 6.22, 6.23**). Several carbon and ash lenses were exposed covering a large part of the flat space in this part of the passage. Non-organic materials were offered as well and these were not placed in this hearth, as they remain unburned. At some point, a Saxche-Palmar Orange Polychrome bowl had been smashed into small sherds, at least one of the sherds that conjoins was found in Unit 14 (**Figure 6.26**). Other deposited items include a pyrite mirror mosaic piece, a greenstone celt, a broken bone needle (which was broken at the time of deposition and may have been broken intentionally as the two halves were found side by side), an intact needle, a possible weaving pick and pin, a dark red perforated bone disk or spindle whorl, a carved shell ring and other decorative objects, chert points and flakes, an obsidian blade, speleothems, a small river cobble, human long bone fragments and cranial fragments, and small figurine fragments. The large amount of carbon and ash suggests that a primary activity in this area consisted of burning organic materials, possibly of offerings, much like contemporary offering hearths in which a variety of materials are layered and subsequently burned (cf. Brown 2004). The carbon lens found at the deepest point compared to the others, which was comprised of much charcoal and black soil that appeared

organic in origin, was exposed at 22 – 24 cm below surface. It was radiocarbon dated to calAD 648 – 809 (2-sigma, AA68559) (**Table 6.3**).

It was noted that sherds from the same vessel of a Delirio Plano-relief type were found throughout the unit, cross cutting several strata (Daniela Triadan, personal communication, 2004) (**Figure 6.27**). This calls into question the integrity of the stratigraphy of this unit and those throughout the passage. One plausible interpretation is that the surface of the activity space was swept clean prior to each ceremony as is the case in modern ceremonies (e.g., Brown 2004:36; Guerra and Ishihara 2006b); this would move and mix cultural material from their original point of deposition.

At the north end of Passage 1, in front of the smoke-blackened ledge, a partially articulated subadult (Interment #24) was exposed, revealing some disturbance as a few bones were far (about 40 cm) from their anatomically correct positions. The cranium was found face down and at a slightly higher elevation than the rest of the skeleton, possibly suggesting that the individual had been placed in a seated position and collapsed forward. Palomo (Palomo 2007) identified the individual to be about 4 – 5 years of age, and two other bones were collected as part of the same interment: a femur (younger than the first individual, precise provenience unknown) and a tibia (adult, possible introduced into the context after the interment of the nearly complete individual). Minute flecks of carbon were found to the northeast of the individual. It is likely that this interment represents part of a ritual activity that occurred toward the end of the passage use because it is found very close to the surface and may have been left exposed, hence its fragility. Its relative location may be significant as the body was placed in the access way of Passage 1 and in front of the “altar” ledge. The associated ceramics are of Late Classic types. Charcoal associated with the interment revealed a radiocarbon date of calAD 777 – 973 (2-sigma,

AA71119) (**Table 6.3**). This accords well with the assessment that the body was interred toward the end of the use of the area, after Aguateca had become the primary capital.

Unit 10 (1.0 x 1.0 m) was opened in front (northwest) of the smoke-blackened *grieta* wall in Passage 1. Because the smoke blackening is not found throughout the passage and is localized only to two areas of the eastern *grieta* wall, it was hypothesized that this may be evidence of some activity that involved either more intensive burning in this particular area or stopping in this particular location for a relatively longer duration with a torch. Combined with the fact that a polychrome drum fragment was surface collected here, it was hoped that evidence of ritual activities could be obtained. Three levels were encountered only after excavation was finished, so all material was collected as lot 10-1-1. Level 1 consisted of a thin (1 – 6 cm in thickness), very dark gray (7.5YR 3/1) clayey matrix. Level 2 (10 – 15 cm thick) was comprised of a light brown silty clay with small limestone inclusions (up to 5 cm). Level 3 (43 - 80 cm thick) was a dark brown clay with numerous medium-sized to large rocks. Two carbon lenses were exposed in the central part of the unit, on top of level 3. A cluster of artifacts including a reworked sherd disk, fauna, a human tibia fragment, a figurine fragment, a ceramic spherical bead, and 2 obsidian blades, were also found associated with one of the carbon lenses adjacent to the *grieta* wall. All the ceramics date to the Late Classic. Excavation was terminated at 58 – 80 cm below surface, when large rocks that covered the bottom of the unit could not be removed.

Unit 12 (1.5 x 1.0 m) was located at the southern end of the passage in order to obtain comparative data for Unit 6 and to determine whether the rock alignment continued to the south end of the passage. Two levels were encountered, though only after excavation was completed; thus all material was collected as lot 12-1-1 (**Figure 6.28**). Level 1 consisted of a 4 – 10 cm thick, black clay. Level 2 comprised the majority of the excavation, measuring 60 – 150 cm in thickness.

Excavation revealed no evidence of the rock alignment. Sherds, disarticulated human remains, faunal remains, worked bone including a carved bone and a needle, lithics including an almost complete chert point, weathered speleothem (no speleothems are present in this passage which suggest it originated elsewhere), obsidian blades, figurine fragments, mano fragments, and a piece of burnt clay were recovered. The sherds are all Late Classic types. Excavation was terminated at 154 cm below surface, when large rocks that covered the unit floor could not be removed.

Passage 3 (Unit 14). Unit 14 (1.0 x 2.0 m), located in Passage 3 south of Passage 1, was excavated in the relatively flat area at the base of a rocky slope. The purpose of the unit was twofold: to assess the identification of a platform, and to identify any activity areas in this more open area relative to the narrow Passage 1.

This unit was one of the deepest units throughout the Grieta Principal, though it only had three levels (and bedrock was not reached) (**Figure 6.29**). Level 1 (lot 14-1-1, 8 – 28.5 cm thick) was comprised of a black clay with small - medium inclusions (1 – 40 cm) and much wood debris. Some sherds were collected. Level 2 (lot 14-2-1) consisted of a grayish brown (10YR 5/2) clayey silt with some small limestone inclusions (5 – 10 mm). Some intrusive sandy clay matrix was observed in this level in the unit profiles. No matrix change had been detected during excavations, but upon examination of the unit baulk, a matrix change did indeed occur at about 60 – 90 cm after level 2 started; thus lot 14-2-1 consists of both levels 2 and 3. Covering the entire northwest quadrant, a carbon lens was exposed at about 35 cm below modern surface in level 2. Faunal material, worked bone, figurine fragments including flute and ocarina pieces, chert lithics, obsidian cores and blades, mano and metate fragments, donut stone fragments, hammerstones, sherds and human remains were recovered.

Level 3 consisted of a dark brown (7.5YR 3/3) clay. An arbitrary lot change was assigned at about 130 – 134 cm after level 2 was initiated (lot 14-2-2) because at the time of excavation, it was thought that there was no matrix change. Faunal remains, worked bone, figurine fragments, a chert biface, mano fragments, sherds and human remains were collected. Noteworthy is a well-preserved carved bone pin with an open hand at one end, meticulously showing the lines in the palm and nails. Except for three fingers, it is complete. See Chapter 7 for a detailed description of the artifact. I suggest that it is a weaving pin (Ishihara 2006b: see Chapters 7 and 8). A charcoal concentration found in the southeastern corner of the unit at 221 cm below surface (that is, 10 cm above the bottom of the unit) was radiocarbon dated to calAD 25 – 230 (2-sigma, AA68570) (**Table 6.3**). The greater majority of the ceramics are of Late Classic types throughout the unit, so this early date may indicate a florescence of use during the Late Classic in an area where there was no use during the Early Classic and perhaps very limited use during the Late Preclassic. Excavation was terminated at 230 - 278 cm below surface (deepest point in the southwestern corner), when large rocks that could not be removed by hand were exposed.

Because this area is relatively more open to the surface site, it is possible that objects could have been thrown or fallen in. The thicker humic layer along the *grieta* wall, comprised of organic debris that originated from the surface site, may suggest that sediments tend to wash toward the *grieta* wall. Likewise, the majority of the artifacts were recovered from the eastern half of the unit, closer to the *grieta* wall, but particularly clustered in the southeastern part of the unit. The unit itself is on a slight slope, as the northern side is 50 cm higher in elevation than the southern. So do the artifacts in this unit represent material that originated from the surface site (e.g., washed in from the surface site, tossed in as trash) or do they represent remains of ritual activities that were conducted here or nearby? I suggest that the material represents material

remains of ritual activities that were associated with those conducted in Passage 1 (see Chapter 8 for a discussion on interpretations of possible activities). This is based on the observations that two sherds of differing vessels that were found here in Unit 14 refit with reconstructible vessels that were recovered from the central activity area of Passage 1. One sherd refits the Saxche-Palmar Orange Polychrome bowl, which was smashed to pieces in Passage 1, and the other refits with a basal sherd of a partial Delirio Plano-relief vase. These two sherds were recovered from this unit, approximately 20 m from the remainder of the vessels, and the morphology of this area would suggest against any natural causes that would wash them down toward Unit 14 as Unit 11-extension is located well inside the covered, flat passage. Moreover, sherds that were washed in should show evidence of water wear such as eroded surfaces and rounded edges. The sherds from Unit 14, however, are well preserved and the sherd edges are sharp, suggesting that the artifacts did not wash into this area from other areas of the *grieta* or the surface site.

Summary. The Two Owls Area was clearly an important ritual space, as attested by the architectonic elaboration of the area including the enclosure of Passage 1 and the construction of Wall 1, Wall 2, and Step 1. Two of the architectural features had associated caches thought to be dedicatory in nature. The planning of the spatial elaboration and intensive labor that was necessary to create the desired space in this area of the *grieta* indicate a coordinated effort probably supervised by people with a higher status, based on the quality and types of artifacts recovered (e.g., carved shell ring, carved bone weaving pins, greenstone celt, pyrite mirror mosaic, etc.). Excavations revealed that the majority, if not all, of the activities in this area including the construction work was carried out in the Late Classic period, probably immediately after the establishment of the Aguateca-Dos Pilas dynasty in the region. The majority of ritual activities took place inside the passage in the central part. Much burning activity, possibly of

organic offerings, can be observed in the layers of charcoal and ash. In accordance with modern ritual practices, sweeping behaviors probably were part of the ritual preparation of the space prior to performing the ceremonies. The multiple layers of carbon and the diverse artifacts in this confined space represent a palimpsest of ritual activities that took place over a relatively short time during the reign of Aguateca.

One important point about this area is that the Main Plaza, the large ceremonial plaza at Aguateca, lies adjacent to this area (see **Figure 8.5**). I suggest that the Main Plaza was intentionally constructed in that particular location because the Two Owls Area and the small cave under the bridge are located here. It is possible that rituals conducted in this part of the *grieta* was a part of ritual performances conducted in the Plaza Principal; only specific people would enter the *grieta* to conduct more private ritual activities, which was a public display of the restricted access to the sacred space and sacred knowledge (cf. Inomata 2001a).

Suboperation 31C: Southern Entrance Area

Five excavation units in total were opened in the South Entrance Area (**Figure 6.30**). One unit was placed at the base of Passage 4 (Nasal Passage) (Unit 7), three units in the Upper Chamber (Units 8, 9, 10), and one unit in Passage 7 (South Entrance Passage) (Unit 11). The objective of the excavations included confirming ritual usage as suggested by the miniature vessel found during surface collections. Additionally, we hoped to clarify the temporal dimension of use, since sherds that may date to the Tepeu 1 phase were surface collected.

Passage 8 (Unit 7). Unit 7 (1.4 x 1.86 m unit, was placed at the northern end of Passage 8, a low passage that parallels Passage 4. It should be noted that this area is very wet, probably one of the wettest areas within the Grieta Principal. The location of the unit in a very low passage and the constant water drippage created a rather unpleasant and sometimes dangerous locus to excavate.

Two levels were identified. Level 1 (lot 7-1-1, 34 – 56 cm thick) was comprised of a very dark brown (10YR 2/2) clay with some very small limestone inclusions (< 1 – 10 mm). Level 2 (lot 7-2-1, 86 – 106 cm thick) consisted of a dark brown (7.5YR3/2) clay.

Although no cultural material is documented to have been recovered from lot 7-2-1, many of the sherds, figurine, and faunal remains collected as level 1 probably originated from level 2 because the matrix change in level 2 was not detected until later. A partially articulated adult male (Interment #34) was exposed at 100 - 150 cm below surface in the northern half of the unit. Two reconstructible polychrome bowls were found in this unit (**Figure 6.31**). Excavation was terminated since the last 20 cm did not contain any cultural material and the unit was becoming increasingly dangerous because of instability of the area caused by water-saturated mud collapsing the rocks.

Upper Chamber (Units 8, 9 and 10). Unit 8 (1.0 x 2.4 m) was placed at the north end of the Upper Chamber along the eastern *grieta* wall at the junction between the chamber and Nasal Passage. Due to very little deposition on the floor of this chamber, there were not very many prospective locations for excavation units. The objective of the unit was to obtain data to help in the interpretation of the use of the area, including its temporal dimension.

Level 1 (lot 8-1-1, 26 – 34 cm thick) was a black clay with fragments of wood and leaves (**Figure 6.32**). Numerous small to large rocks (5 - 50 cm) cover the surface. Sherds, faunal material, shell, figurine fragments, chert flakes, and obsidian were collected. Level 2 (lot 8-2-1, 12 – 24 cm thick) consisted of a dark gray (10YR 4/1) clay. The eastern part of the unit that lies under the overhanging ledge is wet from the dripping water. This unit contained a high density of limestone rocks with little dirt which made excavation difficult. Carbon was found scattered throughout the unit in this level. Sherds and fauna including shell were collected. No human

remains were recovered from this unit. Excavation was terminated at 76 cm below surface, when the large rocks could not be removed and the unit could not be excavated any further.

Unit 9 (0.95 x 3.20 m) was located at the south end of the chamber along the western *grieta* wall, in one of the few flat areas of the chamber. The unit was covered by a brown (7.5YR 4/2), loosely compacted and dry silty clay (lot 9-1-1, 2 – 6 cm thick) (**Figure 6.34**). The dry and loose nature of the matrix allowed it to be screened (1/4" mesh). No artifacts were collected from this first level.

The second level (the same lot number was maintained; 20 – 44 cm thick) consisted of a more compact, lighter brown (7.5YR 5/3), slightly clayey silt with very few small inclusions (< 1 - 3 mm). As soon as this level was initiated and a medium-sized rock was removed, a bone “awl” (weaving pick; see Chapter 7) was uncovered. A shell disk was also recovered from this level as well as sherds and obsidian. In the southern half of the east baulk, once excavation was completed, a carbon lens was observed capping the second level. The second matrix that sits atop the rocks likely represents an ancient use-floor. A burning episode took place in the southeastern quadrant of the unit toward the end of the use of this area. Below the second matrix were medium to large limestone rocks (20 - 60 cm, a 1.4 m-long slab lies along the northeastern edge of the unit). The unit was terminated at 48 – 74 cm below surface, when very large rocks that could not be removed were exposed throughout the unit.

Unit 10 (0.3 - 0.7 x 2.4 m), an irregularly shaped unit, was opened in the central part of the chamber along the eastern *grieta* wall. The unit encompassed a narrow space between the *grieta* wall and a large, slanting slab of limestone (**Figure 6.35**). The unit floor was lower in the northern part and more restricted. The unit was placed to recover additional sherds of a Carmelita Incised vessel with a pseudoglyphic band found during surface collections and to attain any associated material, which may have been cached here.

Hardly any soil deposition was encountered in this unit, and only one level was documented. Level 1 (lot 10-1-1) was comprised of a brown (7.5YR 4/2) silty clay with small (< 1 – 15 mm) limestone inclusions. A chert point fragment, an animal tooth, an obsidian blade, faunal material, two speleothems, and sherds were collected. The speleothems (one of which is 25 x 15 cm large) are noteworthy because no speleothems are observed growing on the *grieta* walls or ceiling in this chamber. In addition to the Carmelita Incised vase, sherds of a partial Infierno Black bowl were found.

In the central part of the unit, sherds of an unusual and almost complete vase were found under a rock, which had probably fallen and broken the vessel (**Figure 6.36b**). A carbon fleck was found attached to the vessel exterior, possibly from a torch. The rim exterior is red-slipped while the white-slipped body is globular but has wide, vertical flutings, much like a calabash vessel. The incurving sides and the direct rim suggest that there may have been a corresponding lid. The interior resembles a Saxche-Palmar Orange Polychrome, with a narrow, red band on the lip while the rest is slipped a light orange. The light tan paste is hard and fine with a wide gray core. The vessel's association with the partial Carmelita Incised vase (**Figure 5.10c**) and partial Infierno Black bowl (**Figure 6.36a**) suggest a Late Classic date but no comparative specimens have been located either in the Petexbatun or in the greater Maya area. Excavation was terminated when the soil was swept clean off the boulders that comprised the unit floor.

Southern Entrance Passage (Unit 11). Unit 11 (1.0 x 1.1 m) was placed at the base of the South Entrance Passage where, just to the north, one must climb up through the small hole to access the Upper Chamber from the south. In this relatively level area, Unit 11 was placed to encompass the southern end of a low mound of rocks along the western *grieta* wall. The objective of the unit was to assess whether the mound was an architectural feature, possibly a platform. A similar rock mound was observed in Grieta Pequeña I.

Two levels were identified, but only one lot was assigned (lot 11-1-1) (**Figure 6.33**). Level 1 (2 – 18 cm thick) consisted of very loose, black clay with leaf and wood debris. Level 2 (24 – 29 cm thick) was comprised of a brown silty clay with small (1 – 20 mm) limestone inclusions. The unit was extended 1 m northward and 2 m westward so as to encompass the width of the passage, making it a 2.0 x 2.0 m unit. Only five sherds and faunal material were collected from this unit. Though a possible line of rocks indicative of a retaining wall was exposed in the eastern half of the enlarged unit, its lack of articulation with material exposed in the unit extension and the inconclusive evidence of any construction fill suggest that it is collapsed material and not an architectural feature.

Summary. Quite possibly the entrance slope, like others in the grieta, had been modified by constructing steps to facilitate access. Indeed, stacked rocks wedged between the grieta wall and larger rocks forming a step were observed. However, there is difficulty in securely identifying such modification because of collapsed rocks covering the surface and the rough nature of construction techniques.

Use of this area can be placed in the Late Classic period. The use-floor from this time period was found only a few centimeters below the modern surface, and some burning activity took place in the southern portion of the chamber. From the narrow space confined by large limestone slabs along the eastern *grieta* wall, three reconstructible vessels were found. Counting the intact miniature jar and two Saxche-Palmar Orange Polychrome vessels, this is one of the areas with a high frequency of reconstructible vessels.

Additionally, the significance of this area can be attested to by the construction of Wall 3, a well-built retaining wall. Its function was probably to reinforce the slope of Passage 4 and the chamber floor above, suggesting recurrent use and access through this passage. Toward the base of the slope were found disarticulated human remains, and in the side passage at the base of this

slope, a mostly articulated individual was exposed. Based on the relatively low frequency of cultural material, a low intensity of usage can be suggested of the Southern Entrance Area.

Suboperation 31D: Chill Hill Area

One of the project's objectives was to investigate the more open areas that are exposed to sunlight and the elements. It was hypothesized that the less cave-like atmosphere might have provided a setting for functions other than activities pertaining to religious ritual. Examples of such practical, non-religious functions include using the *grieta* as a place to throw daily trash, which would result in a household midden in the *grieta*, and as a place for disposal of casualties from battles related to the Aguateca abandonment.

Not many middens have been found at the Aguateca surface site (Inomata, personal communication, 2003) and the *grieta* would appear to be a convenient place to dispose of daily trash. Residential structures border the northern portion of the *grieta*, particularly near the Chill Hill Area, in contrast to the southern part, which is adjacent to the Plaza Principal, a more public and ceremonial space. Despite its system of defensive walls and burned elite residences, direct evidence of battles has been limited at the surface site (Inomata, personal communication, 2003). It was hypothesized that interments of warriors and weaponry from such battles might be found in the *grieta*. It was also hoped that the open nature of these areas would provide abundant stratigraphic information, which is often lacking in enclosed caverns, or in this case, in the southern parts of the *grieta*. To this end, a total of eight excavation units plus a surface collection unit were opened throughout this area (**Figure 6.37**).

Chamber 5, Open Area (Unit 1). Unit 1 (1.0 x 3.0 m) was placed in the relatively flat area at the southeast part of this chamber. The purpose of the unit was to test the hypothesis described above that the *grieta* might have served non-religious functions. This area coincides with the area north of the Grupo Palacio (Palace Group), where most of the structures are likely

residential in nature. On the other hand, this flat area may have been used for ritual activities due to its proximity to a cave, particularly for performances accommodating a relatively large group due to its wide and open space. Moreover, the flat area may be remnants of the presence of a platform or modification of the area.

Interestingly, this unit represents one of the few units throughout the *grieta* with clear stratigraphy (**Figure 6.38**). The humic layer (lot 1-1-1, 8 – 20 cm thick) was surprisingly thin, given the open and exposed morphology of this area combined with the fact that vegetation covered the area. Level 2 (lot 1-2-1, 4 – 13 cm thick) consisted of a more compact, dark grayish brown (2.5Y 4/2) clay with small- to medium-sized (1 – 150 mm) limestone inclusions, though the west part of the unit contained medium – large stones (up to 50 cm) and a higher concentration of gravel inclusions (1 – 10 mm) compared to the east which only had some gravel inclusions. Not many artifacts were collected from the upper two levels, where roots apparently reach. In the third level (lot 1-3-1, 2 – 19 cm thick), which was a compact, dark grayish brown (10YR 4/2) clay with a high frequency of gravel, a thin scatter of carbon was found throughout the unit, although a higher concentration of carbon (3 - 10 cm thick; lot 1-3-2) was encountered in the eastern one-third of the unit, at 94 cm below surface (although measures 85 cm below surface in the northern end of the charcoal stain). Some sherds and an obsidian blade were found within this carbon lens (**Figure 6.39**).

Level 4 (lot 1-4-1, 14 – 17 cm thick) was comprised of a grayish brown (2.5Y 5/2), compact clay with a high frequency of gravel and some medium-sized rocks (up to 30 cm). The eastern one-third of the unit was covered with a carbon lens, the largest concentration of charcoal in the unit, and adjacent to this, in the north-central part of the unit at 99 cm below surface, a reconstructible Saxche-Palmar Orange Polychrome plate was exposed (lot 1-4-2) (**Figure 6.39**). On the other hand, the western half of the unit contains very little carbon. More artifacts were

collected in this level than the previous ones. Noteworthy is a sherd of an incised white stone vessel (see Chapter 7 for a detailed description), a rare type of artifact that has been recovered at Aguateca and is often associated with regal contexts (Inomata, personal communication, 2005). Christina Luke (personal communication, 2007) observed that the sherd has been exposed to fire.

From level 5 (lot 1-5-1, 9 – 13 cm thick), a highly compact, wet clay of a dark gray color (10YR 4/1) with very few inclusions, sherds, figurine fragments including ocarinas, a small cluster of faunal remains, obsidian, and worked bone were found throughout the level, interspersed with small fragments of carbon (**Figure 6.39**). In the south-central part of the unit, along the southern baulk, a reconstructible brown-slipped tripod bowl with stucco on the exterior was exposed at 114 cm below surface (lot 1-5-2). Along the northern baulk, fragments of a partial Saxche-Palmar Orange Polychrome rounded bowl with a kill hole were collected at 107 cm below surface (lot 1-5-3). It is noteworthy that a Tinaja Red or Pantano Impressed jar body sherd with red pigment on its interior side was collected.

Level 6 (lot 1-6-1, 27 – 46 cm thick) was comprised of a very wet and compact, dark grayish brown (10YR 4/2) clay containing many small inclusions (1 - 100 mm). In the western one-third of this level are found numerous medium – large (10 - 50 cm) rocks. A high frequency of artifacts including sherds, faunal remains, obsidian, and figurine pieces, was observed in this level, along with a scatter of carbon throughout the level (**Figure 6.39**). Also found were more sherds containing red residue that refit the Tinaja Red/Pantano Impressed jar body sherd found in level 5. A sample of the residue was submitted to the Ministerio de Energia y Minas for identification and was preliminarily identified as cinnabar. Soon after this level was initiated, partially articulated human remains of an adult male were exposed (Interment #52; lot 1-6-2). The head was found face down, the top of the head pointing to the southeast. An ash lens containing some carbon was found associated with the interment. The radiocarbon date of some charcoal

found near the ribs and long bones revealed to be calAD 640 – 766 (2-sigma, AA68571) (**Table 6.3**). A chert hammerstone was found 10 cm to the northeast of the cranium, and 2 sherds to the same Saxche-Palmar Orange Polychrome plate and an animal tooth were located to the northeast and southeast, respectively, of the cranium.

The last level of the unit (lot 1-7-1, 21- 35 cm thick) consisted of a highly compact, wet clay of a very dark grayish brown color (10YR 3/2) with some tiny inclusions (< 1 - 2 mm) and numerous brittle, medium-sized (10 - 30 cm) rocks. Aside from the carbon lens and the two Flor Cream sherds and Triunfo Striated jar body sherds, not much cultural material was encountered (**Figure 6.39**). Refitting sherds of the striated jar were found from lot 1-6-1, but it is likely that they were collected from the top of level 7. The ceramics in addition to the radiocarbon date of carbon found in the level superimposing lot 1-7-1 suggests that this lot can be dated to the end of the Late Preclassic or beginning of the Early Classic. At 111 – 141 cm below surface (174 cm at deepest point in between rocks in the northeastern part of the unit), the presence of large rocks prohibited further excavation and the unit was terminated.

The greater majority of sherds from the unit represent Late Classic types. In particular, Chablekal Gray sherds, which are associated with the late facet of the Nacimiento phase (ca. AD 761 - 830) (Foias 1996:428-432), are found throughout the unit in levels 1 through 6, suggesting use of this area dates to the time after Dos Pilas Ruler 5 was captured in AD 761. No sherds from the Terminal Classic have been identified, indicating use of this area ended around the time of abandonment of the site.

Chamber 5, Possible Steps (Units 3 and 4). Unit 3 (1.0 x 1.0 m) was opened along the western grieta wall toward the north end of Chill Hill, northwest of the cave. It was hypothesized that a series of steps had been constructed along this western grieta wall. Unit 3 encompassed the uppermost of a series of four or five steps running southward. This unit contained two levels

(**Figure 6.40**). Level 1 (lot 3-1-1, 31 – 61 cm thick) consisted of a loose, dark yellowish brown (10YR 3/4) clay with small inclusions (< 1 – 3 mm). Level 2 (lot 3-2-1, 76 – 96 cm thick) comprised of a more compact, yellowish brown (10YR 5/4) clay with some gravel (< 1 – 2 mm) and small rocks (up to 15 cm). Some sherds and faunal material were recovered from the first level, but no artifacts were collected from level 2. Excavation was terminated at 110 - 142 cm below surface, when large rocks covered the unit floor. No construction fill or core was observed, so the presence of a step cannot be confirmed; yet the possibility of slight modification by placing a single course of facing stones in between large boulders cannot be disproved at this point.

Unit 4 (1.0 x 2.65 m), located southwest of Unit 3, encompassed the bottom three of the possible steps mentioned above (**Figure 6.41**). Level 1 (lot 4-1-1, 6 - 29 cm thick) consisted of a loose, dark grayish brown (10YR 4/2) clay. Some sherds, chert, worked bone, and fauna, some of which are burnt, were recovered from level 1. Sherds from the surface were also collected as part of this lot. Level 2 (lot 4-2-1, 52 – 106 cm thick) comprised of an olive brown (2.5Y 5/3) clay with small inclusions (< 1 – 2 mm). A chert chopper and a figurine fragment were recovered, and a cluster of sherds (lot 4-2-2) were found along the western baulk in the central part of the unit. These sherds were located atop some small rocks, which are in line with what was speculated as one of the step's retaining walls. All the ceramics recovered from this unit belong to Late Classic types. A third matrix was encountered only in the northeast quadrant of the unit, but no cultural material was found from this soil.

No architectural fill or any strong evidence of step retaining walls was observed. Though none of the steps could be confirmed, the line of rocks that runs through the center of the unit, or the second step, remains as a possible intentional alignment of stones that would have functioned as a step. The higher quantity of artifacts in the southern end of the unit is likely a result of natural elements washing the material down slope.

The Cave (Units 2, 5 and 6). Unit 2 (1.0 x 1.0 m) was opened inside the small cave (**Figure 6.42**), in the flattest area at the base of the short slope from the entrance. The purpose was to test the cave interior for any cultural materials. Upon completion of Unit 2, Unit 5 (1.0 x 1.6 m) was opened to extend Unit 2 to the south, encompassing the short slope up to the cave entrance. It was hoped that these units would provide data to help understand the depositional processes of the material in the cave: whether they washed in from the hill to the east (which may in turn have been thrown in from the surface site) or were originally deposited in the cave.

The humic layer, a loosely compacted black clay containing some decomposing branches on its surface, actually consisted of two matrices: one a very thin black layer, the other a compact, very dark grayish brown (10YR 3/2) clay with few inclusions (2 – 11 cm thick total) (lots 2-1-1, 5-1-1) (**Figure 6.43**). The second matrix was not encountered in Unit 2. Few sherds were found in this first level in Unit 2, and even though this lot in Unit 5 encompassed two levels, nothing was collected.

Level 2 (20 – 53 cm thick) consisted of a very dark gray (10YR 4/1), compact clay with some very small inclusions (1 – 10 mm). The majority of the cultural material came out of level 2 (lots 2-2-1, 5-2-1), particularly from Unit 5. Three heavy concentrations of artifacts were exposed in Unit 5, carpeting the entire unit (5-2-1, 5-2-2, 5-2-3). Most of the sherds in the first lot are very small and weathered, raising the possibility that they washed in from outside the cave. A diversity of artifacts was recovered mixed with charcoal, including a tiny obsidian blade fragment, chert flakes, a bone needle, and flute and ocarina fragments. Interestingly, a sherd from lot 2-2-1 is likely of the same vessel as a sherd found in Unit 1 (lot 1-4-1) outside of the cave. Although they do not refit, these sherds share recognizable characteristics, such as a thick white slip with post-slip incisions, smudged brown interior, and a fine pinkish brown (2.5YR 6/6) paste with a wide gray core (**Figure B.5**). The second layer of artifacts (lot 5-2-2), found 3 – 5 cm below the

first, contained a higher density of material including sherds, chert, slate, obsidian, and figurine fragments. Carbon was found in the southern portion of the unit.

Lot 3 (lot 5-2-3) consisted of the third layer of artifacts 3 – 9 cm below the second (**Figure 6.44**). This concentration of artifacts was primarily comprised of large sherds including a complete rim of a Tinaja Red jar and Cambio Unslipped/Encanto Striated jar rims, and Saxche-Palmar Orange Polychromes. The size and intactness of these sherds suggest that they were not washed in naturally but rather deposited inside the cave intentionally. Other artifacts include a bone rasp, a bone spatula, possibly a hair pin, figurine fragments, obsidian, and chert. Faunal material and human bone were also recovered. The disarticulated human bone comprised of cranial elements, teeth, a mandible, a tibia, a vertebra, scapula, and rib. At least two individuals are represented, including a subadult, ranging in age from 2 to 5.5 (teeth, vertebra, tibia, mandible), and a subadult or young adult (teeth, cranial bone, and scapula) (Palomo 2007). Carbon was found concentrated in the southwestern quadrant.

Level 3 (lot 5-3-1, 40 – 76 cm thick) comprised of a grayish brown (10YR 5/2) clay with fewer small inclusions (1 – 40 mm) than the previous level but more large rocks (up to 30 cm). This level clearly exposed less cultural material, but included sherds, figurine fragments, a chert point fragment, and human bone (cranial fragments, teeth, and calcaneus of a subadult; adult teeth). No artifacts are reported from lot 2-3-1. A fourth level (lot 5-4-1, thickness unknown) was encountered, but excavation was terminated at 88 - 130 cm below surface (deepest at the southern end of Unit 5), without digging into this level because the large rocks that filled the majority of the unit floor could not be removed. This level was not reached in Unit 2. Almost all the sherds are of Late Classic types.

Unit 6 (0.8 x 0.85 m) was opened in the narrow space outside of the cave in the entranceway to the cave (**Figure 6.45**). Its purpose was to examine any uses at the cave entrance

and to collect comparative data to help assess the depositional processes of the material in the cave. Level 1 (lot 6-1-1), the humus (5 – 12 cm thick), consisted of no artifacts, and level 2 (lot 6-2-1, 7 – 12 cm thick) comprised of a dark grayish brown (10YR 3/2) clay with a high concentration of rocks (5 – 20 cm). Level 3 (lot 6-3-1, 38 – 48 cm thick) consisted of a compact, brown (10YR 4/3) clay with some small inclusions (< 1 – 5 mm). Late Classic sherds, 2 obsidian blade fragments, chert tools (a point fragment, a uniface, and a small flake), and possibly worked bone were found in level 2, while a lower frequency of material was collected from level 3 including sherds, a river cobble, and a figurine fragment. Most of the material from level 3 was found in the northern part of the unit. Excavation was terminated at 45 - 56 cm below surface, when the large rocks could no longer be removed.

This unit yielded a very low frequency of cultural material, suggesting that this narrow space at the entrance of the cave served only as a walkway going into and out of the cave. Additionally, the drastic difference in artifact frequency compared to that in the cave indicates that not much material washed into this entranceway from the slope east and northeast of this unit.

Chamber 5, North Part (Unit 7). Unit 7 (0.75 x 0.75 m) was placed at the northern extreme of the Chill Hill Area along the western grieta wall, under the south end of an alcove, nicknamed Hobbit Alcove (**Figure 6.47**). One can climb up to the alcove (about 2.5 m above modern surface of the unit) from the unit and enter the narrow space (about 1 m wide, 4 m long, and 2.5 m high) that is lined along the eastern edge with active stalagmites and stalactites, many of which have been broken. Some broken fragments of speleothem lay cemented onto the floor of the alcove. Though it is difficult to assess whether the breakage was artificial and intentional, I would like to entertain the idea that the overall appearance combining the stalactites, stalagmites, and the empty void in between the speleothems produced a maw-like effect. Similar examples of

such modified speleothems, termed “modified speleothem sculpture” by Cameron Griffith, appear in numerous caves in western Belize (Griffith and Jack 2005). This alcove is unique because the majority of speleothems in this part of the grieta are found much higher up along the western grieta wall. Access to active speleothems is rare in this area. Another important factor to this alcove includes the wet nature of this space, given the close association of activities with water in caves (Brady and Ashmore 1999; Rissolo 2001). The unit was placed here in order to examine any uses associated with the watery alcove.

Four levels were found in Unit 7 (**Figure 6.47**). Level 1 (lot 7-1-1), a 4 – 11 cm thick humus, did not reveal any artifacts. Level 2 (lot 7-2-1) comprised of a 11 – 27 cm thick, compact, brown (10YR5/3) clay, with small inclusions (1 – 3 mm). This matrix was sparsely contained patches of a loose, light brown (10YR 7/3) clay with a high concentration of inclusions (0.1 – 5 cm). This latter matrix may be remnants of calcite deposits from the dripping water. At the top of level 2, a small carbon lens was exposed in the southwestern corner, and many of the sherds were concentrated here.

Level 3 (lot 7-3-1) consisted of a 43 – 57 cm thick, compact, silty clay of brown color (10YR 5/3). Late Classic sherds and some faunal remains were found. Level 4 (lot 7-4-1, 10 – 24 cm thick) comprised of a light gray (2.5Y 7.2) clay with many small inclusions (< 1 – 5 mm). This matrix was sparsely dotted with moist and compact, brown (7.5YR 4/4) clay that contained small, hardened clay (1 – 2 mm in size). This latter clay was found to be that of level 5. Level 5 (lot 7-5-1) consisted of a 13 cm thick, dark yellowish brown (10YR 3/4) to brown (7.5YR 4/4) clay containing small pieces of hardened clay.

This unit yielded a low overall frequency of cultural material. The unit was terminated at 96 – 108 cm below surface, due to the combination of the sterility of level 5 and the presence

of large rocks that could not be removed. Excavations here suggest that little activity took place here.

Chamber 5, East Part (Unit 8). Unit 8 (1.05 x 1.0 m) was placed at the peak of the hill that lies along the eastern grieta wall, to the east of the cave. The unit was initiated in order to: (1) collect comparative data to determine whether material was washing from this hill into the cave; (2) assess if material was being thrown from the surface site; and (3) examine the presence of architectural features, namely steps that run southward possibly creating a stepped hill.

Three levels were found (**Figure 6.48**). Level 1 (lot 8-1-1) consisted of a wet, black humus layer, 6 – 18 cm thick. Faunal remains, sherds, chert were collected from the surface (lot 8-0-1), and from level 1, sherds and chert were recovered. Level 2 (lot 8-2-1, 4 - 63 cm thick) comprised of a dark grayish brown (10YR 3/2) clay with some limestone inclusions (< 1 – 10 mm, small rocks up to 10 cm large). Carbon flecks were observed scattered throughout level 2. In the northwestern corner of the unit, a human pelvis of an adult was exposed at 21 cm below surface, and in the northeastern part, a cluster of sherds was found 43 – 51 cm below surface. Other artifacts include a fragmentary ceramic spindle whorl with incisions and 3 obsidian blade fragments. The unit baulk showed the presence of a third matrix (lot 8-3-1) that was not noticed during excavation. Level 3 (4 – 72 cm thick) consisted of a dark grayish brown (10YR4/2) clay with a high frequency of small limestone inclusions (< 1 – 20 mm). No cultural material was recovered from this matrix, and a large rock was exposed, covering the majority of the unit floor. The overall paucity of artifacts did not encourage me to expand the unit horizontally, so excavation was terminated at this point at 88 cm below surface. In sum, no evidence of any architectural construction could be discerned from this unit.

Unit 9 consists of the material collected from the surface of the possibly stepped hill described above (**Figure 6.49**). From the summit of the hill, at least four steps can be discerned,

though with some difficulty. In the area about 1.5 m wide along the eastern *grieta* wall on this hill, vegetation was cut and raked, and very loose rocks were removed. None of the supposedly collapsed stones were removed, and without excavations, it is difficult to conclude that these were indeed steps. However, we tentatively suggest that they do represent steps based on the observation that the construction fill appears to be comprised of well-sorted fist-sized limestone rocks, while the retaining walls were of larger rocks. Furthermore, although the steps are likely only one course high, the tread of the steps is horizontally flat, as one would expect with steps. It should be noted, however, that it is possible that the hill is a natural part of the *grieta* but was slightly modified so as to create a stepped mountain. A figurine fragment, 3 chert flakes, and 4 obsidian blade fragments were collected. The sherds collected are all Late Classic sherds except for one Flor Cream sherd.

Summary. A high frequency of polychromes and other elaborately decorated vessels, figurine fragments, marine shell, an abundance of carbon, and a general lack of faunal material indicate a deposition other than a typical household midden. Moreover, the presence of several reconstructible polychrome vessels, in addition to a “killed” vessel, suggest that these vessels were not remnants of daily discard. The presence of so-called utilitarian ware, such as unslipped and monochrome jars and bowls, is not surprising since these are commonly found artifacts in caves. Thus the activities in this chamber were most likely religious events, and not middens being thrown in from the residential structures above.

Excavations also confirmed that the cave on top of this hill was a place where ritual activity took place. The quantity of ceramics recovered from the excavation units inside the cave was significantly higher compared to the unit placed in the open area, even though the units in the cave were 2.5 times smaller in volume.

A comparison of artifact assemblages between the different areas of the *grieta* allows us

to consider some of the varied types of activities that may have been carried out. The Chill Hill Area contained about 50% of all figurines, many of which are fragments of musical instruments. The open nature of this area may have been conducive to the gathering of larger groups of people, and therefore, a likely place for more public ritual performances that included music took place here. Compared with the other areas of the *grieta*, not many human remains were found here. In particular, very few postcranial skeletal elements were recovered.

One possible reason why this area was an important religious experience for ancient visitors may lie in the fact that they would have had to travel up a hill that was both steep and long (close to 40 degrees and 63 meters slope distance) in order to reach the top of Chill Hill. Moreover, the small hill atop Chill Hill may have been modified to have steps. Either way, a cave is found at the peak of Chill Hill, a sort of navel of the *witz*. In addition, one can feel strong gusts of cold wind, visible in the form of clouds, channel through from either sides of the hill, a physical observation that not only mirrors the experience on mountaintops but also leaves the impression that the *grieta* is breathing and is alive. This is an important experiential observation because wind and clouds are thought to originate from caves, as the wind was perceived to be the breath of caves (Garza 2003a; 2003b; Taube 2001:105). Further consideration of the significance of this area is discussed in Chapter 8.

Suboperation 31E: Windy Valley

The open-ended spatial configuration of the defensive wall around Structures M7-38 and M7-39 on the surface site along the Windy Valley shows use of the Grieta Principal as part of their defensive system (**Figures 1.2, 6.50a, C.1, C.2**). Moreover, the lack of structures in this group by the side of the *grieta* may be an indication that a bridge was placed here. If this was the case, then it is possible that objects were thrown into the *grieta*. Such objects may include daily trash and/or offerings not unlike that deposited into cenotes. In addition, if the bridge existed

when Aguateca was attacked, evidence of fighting may have fallen below. One test unit (Unit 1) was opened to compare use of this narrow passage with other wider spaces.

Unit 1 (1.0 x 3.05 m) was placed in the middle of the passage (**Figures 6.49, 6.50**). Some wood and leaf debris were found on the surface, but the small quantity of such organic material fallen from the surface site suggests that the *grieta* walls overhang and shelter this area more than it appears. Only a few sherds and faunal material were collected from the humic level (lot 1-1-1, 9 – 15 cm thick) (**Figure 6.51**). The second level (lot 1-2-1) consisted of a 35 – 46 cm thick, moist, very dark gray (7.5YR3/1), compact clay with few inclusions (<1 - 5 mm) and numerous small- to medium-sized rocks (10 – 20 cm). The unit, in particular the southern two-thirds, was covered in small carbon pieces throughout the level. Late Classic sherds, faunal remains, human bone, mano fragments, an obsidian blade fragment, 4 chert flakes, and a figurine fragment were collected from this level.

Level 3 (lot 1-3-1), 26 – 28 cm thick, consisted of a very wet, very dark gray (10YR3/1), compact slightly silty clay with a high density of small gravel inclusions (< 1 - 5 mm). Small pieces of clay of a dark yellowish brown color (10YR3/6) were interspersed in this matrix. This matrix is more saturated with water than lot 1-2-1 above it. Sherds, fauna, lithics including a chert biface fragment and a chert flake, a quartzite mano, and figurine fragments were recovered. The lot was changed to lot 1-3-2, at 77 – 102 cm below surface, when a dense concentration of artifacts was exposed within the northern two-thirds of level 3. This cluster of artifacts includes sherds, a figurine fragment, rock quartz, and a chert hammerstone. Carbon was found in the northern one-third of the unit. This artifact concentration came as a surprise since not much cultural material was found in the matrix above it in this level; not much material was found below this lot for the rest of this level.

Level 4 (lot 1-4-1, 94 – 100 cm thick) consisted of a very dark gray (2.5Y3/1), compact

clay with very few inclusions, which had a very distinct, metallic odor. For the upper 60 cm of this level, no cultural material was encountered at all. However, halfway down this level, at which point the frequency of rocks 5 - 30 cm in size increased, a 7 cm thick carbon lens (lot 1-4-2) was exposed, extending throughout the unit. No artifacts were found associated with this feature. Lot 1-4-3 was assigned to the matrix below the carbon lens in order to attain better stratigraphic control, particularly because sherds and a chert biface were encountered primarily in the southern half of the unit. Aguila Orange basal flange sherds and Flor Cream sherds were recovered together from this lot, suggesting a Protoclassic date or a transition period between the Late Preclassic and Early Classic.

The level was changed (lot 1-5-1, 96 cm thick) when the matrix, similar in texture and color to that of level 4, started containing a higher density of limestone inclusions up to 30 cm in size. An exhausted chert core was collected as well as shell, but no sherds were recovered. In the southeastern corner of the unit, water started to seep out as if we had hit the water table, but by the following day, it had retreated or dried up. A fairly large piece of carbonized wood was found in this water (lot 1-5-2) (**Figure 6.52**).

On the final day of excavations, at a depth of 85 – 95 cm below the start of level 5, partially articulated human remains were encountered and designated as Interment #53. At least three individuals are represented, of which two are young adults (one male) and the third a slightly older individual (sex unknown). A few sherds and a fragment of a chert groundstone tool were found in association with the bones, while a Flor Cream rim sherd was observed directly under the radius. Carbon pieces were found interspersed among the bones. Though we had not reached bedrock or large rocks as in other units, lack of time forced us to terminate the unit as soon as the bones were recovered. The unit was terminated at 291 cm below surface.

Summary. This unit uncovered relatively well-defined strata, a rare occurrence in the grieta. This unit yielded temporally intriguing results as one of the few well-contextualized Late Preclassic material was recovered. It appears that this passage and the Outer Chamber of the Hidden Jar Area were used during this earlier period. It should be noted that early material may be present in other areas as well, but site formation processes such as the collapse and movement of limestone rocks that comprise the floor of the grieta may have buried such earlier evidence. With our current excavation techniques, we were unable to safely remove the rocks and excavate further down to possible early deposits.

Grieta Rincón

Excavations were conducted in the Grieta Rincón (**Figure 6.53**) to assess any use contemporaneous with that of the adjacent cave Barranca Escondida, where Early Classic material was found in and around the cave including Early Classic vessels and stelae associated with the earlier dynasty of Tamarindito.

Suboperation 30A: The Cave Interior

Suboperation 30A consists of the investigations carried out within the deeper cave accessed from the central part of Grieta Rincón. Only one unit (Unit 5) was excavated (note Unit 4 of this suboperation does not exist).

Unit 5 was placed in the first level of the deeper cave, in the slightly elevated, small chamber. No units were opened in the two lower levels due to the lack of soil. To access the chamber, upon arriving to the first level where our ladder stood, one must either climb up about 2 m to enter the north end of the chamber (which was preferred by the excavation crew) or crawl through a narrow opening to enter the south end.

The objective of the excavation unit was to examine the only architectural feature within the cave, namely a platform retaining wall (**Figures 6.54, 6.55**). Specifically, data on the

construction technique, temporality of the feature, use, and the function of the platform were to be collected. The unit was placed to encompass a portion of the retaining wall and the platform surface; however, later it was extended northwestward to follow the remainder of the retaining wall.

A 4 – 43 cm thick, very loosely compacted, very dark grayish brown (10YR 3/2) silty clay with some limestone inclusions (< 1 - 15 mm) (lot 5-1-1) covered the entirety of the original unit (**Figure 6.55**). This same matrix was encountered in the unit extension (lot 5-1-2, 32 – 43 cm thick) but was assigned a separate lot because of the presence of artifacts. No cultural material was collected from the original unit. The sherds and obsidian blade collected as lot 5-1-1 were found on the surface northwest and west of the unit, at the base of a large rock. The only artifacts from within the platform were found in the unit extension, and consist of sherds, 2 halves of an obsidian blade, and a bone needle. The few ceramics that were recovered from the construction fill inside the platform are of Late Preclassic or Early Classic unslipped types: Achiotés Unslipped, Sapote Striated, and Quintal Unslipped.

Level 2 (lot 5-2-1, 10 – 26 cm thick), a very loosely compacted, light yellowish brown (10YR 6/4) silt with few inclusions (< 1 - 1 mm), was found throughout the unit but contained no artifacts except for some shell. The original unit was continued down to a depth of 130 cm below surface at its deepest point without encountering any cultural material, at which point excavation was terminated. This level was not reached under lot 5-1-2, but this is probably due to the fact that the small area of lot 5-1-2 inhibited the removal of the rocks to excavate down any further.

The sterility of the original unit suggests that the platform area itself is a natural part of the cave, with little modification. The construction fill, a loose silty clay mixed with small (about 10 cm large) limestone rocks and artifacts, is observed only in the small area of the unit extension, indicating that only this part can be securely identified as being artificially constructed. Three

courses of larger rocks (20 cm large) were dry-laid along the west side of the fill to retain and support the dry and loose soil that constituted the platform area. This is a good example of architectural modification of the cave with minimal effort and efficient use of accessible material. The function of this feature appears to have been to enhance a particular space for ritual activities, and its construction suggests that this space may have sponsored repeated use.

The presence of an architectural feature, the only one known in the cave, in addition the high frequency of artifacts suggest that this area was of particular significance within the *grieta* and had been visited often. However, the function of the platform is not clear. It is noteworthy that this area did not have any human bone, whereas in the other two areas human bone was the predominant cultural material found. The ceramics found in the sealed context of the construction fill suggests that the platform inside the cave was constructed either during the later part of the Late Preclassic or early part of the Early Classic. Reuse of this area, albeit in a limited manner, appears to have occurred during the Late Classic.

Suboperation 30B: The Grieta Portion (Cave Exterior)

No surface collections were conducted in this part of the *grieta*, and no architectural modifications were noted. A total of three units were placed in the *grieta* (note: Unit 3 does not exist in this suboperation) (**Figure 6.53**). The objective was to compare use inside and outside of the cave. Contrary to the numbering of the units in this suboperation, Unit 4 was opened first. Unit 4, originally a 1.0 x 2.0 m unit, was located 1.5 m southwest of the cave entrance along the western *grieta* wall (**Figure 6.56**). The unit was placed in this location because of the presence of an overhang that creates a sheltered space similar to rockshelters, and interments have been reported from such spaces (Bonor Villarejo 2002). Moreover, this overhang shows evidence of speleothem breakage scars not of recent activity as Shade and Johnson observed, suggesting that the speleothems were removed in order to create a particular space and/or to cache in other

contexts. During excavation, the unit was extended southeastward another meter, making it a 2.0 x 2.0 m unit, in order to help understand the depositional process.

A 10 – 15 cm thick, humic layer covered the surface consisting of leaf and wood detritus. Under this, a 35 – 44 cm thick, very dark brown (7.5YR 2.5/2) compact clay with few inclusions (lot 4-2-1) was encountered throughout the unit. No matrix change after the second matrix was observed during excavations; however, upon examination of the unit baulk after excavation had completed, it became apparent that there were actually six distinct levels (**Figure 6.57**). The following description of the other four levels is based on observation of the matrix in the unit baulk after excavation was completed.

The third matrix is comprised of a 6 – 30 cm thick, dark brown (7.5YR 3/2) clay with a high frequency of small (< 1 - 20 mm) limestone inclusions. The fourth matrix (23 – 61 cm thick) is similar to the second, in terms of color and texture, but small (1 - 2 mm) pieces of red (burnt?) clay were observed within this level. The fifth matrix is comprised of a 38 – 54 cm thick, dark gray (7.5YR 4/1) clay with a high frequency of limestone inclusions of variable size (< 1 - 250 mm). Small pieces of carbon were observed in this level as well as in the second and third levels. The final level, 42 – 47 cm thick, consists of the same soil as above it but contains larger rocks (up to 1 m). These large rocks are actually covering the cave, as cool air was felt blowing from the spaces in between the rocks. Thus excavation was terminated at 200 cm below surface to avoid collapsing of the rocks.

A total of 16 lots were assigned to concentrations of artifacts that were exposed in layers (**Figure 6.58**). Separate lot numbers were given to the material that was recovered from the eastern extension of the unit since excavation of it commenced after much of the original unit had been dug. The majority of the cultural material in these lots consists of sherds, but also include a

reworked sherd disk, some figurine fragments, chipped stone lithics such as chert flakes and knife or point, obsidian blades, hammerstones, mano and metate fragments, shell and animal remains, and disarticulated human bone.

Approximately half of the ceramics were recovered from level 2 (lots 4-2-2, 4-2-3, 4-2-4, 4-2-5, 4-2-7, 4-2-8, 4-2-9). On the contrary, very few sherds were found in level 4 (lots 4-2-11, 4-2-12). Though 95 % (n=1822 of 1915) of the ceramics were of Late Classic types, 3 Late Preclassic and 21 Early Classic sherds were present as well. This suggests that there was some use though limited during the Late Preclassic and Early Classic periods. This would be contemporaneous with the use at the Barranca Escondida area and cave, which is only a few meters distance from Grieta Rincón.

Excavation of Unit 4 exposed several concentrated layers of artifacts, predominantly sherds. This is the reason why the unit was expanded eastward toward the center of the passage, to examine the extent of the artifact concentrations. The high concentration of artifacts was initially hypothesized to be the result of sweeping behaviors associated with cleaning a ritual activity area. However, the high frequency of artifacts was not confined to the edges of the passage but was found in the center of the passage as well, negating this hypothesis. Along with the finding of a carved bone object in this area described below, the concentration of sherds and artifacts in front of the cave entrance suggests they represent remnants of a series of ritual episodes and not random washing down of material from the surface.

A noteworthy artifact recovered at a point between levels 5 and 6 is a well preserved, very finely carved bone collected from the upper part of level 6, depicting a serpent emerging from a flower with a hummingbird (**Figure 7.42**, see Chapter 7 for further description). Although charcoal collected at a depth above the bone artifact revealed a radiocarbon date of calAD 420 – 545 (2-sigma, AA68567) (**Table 6.3**), the iconographic style carved on the bone suggests a Late

Classic date and probably later during this period (Karl Taube, personal communication, 2005). This temporal discrepancy may have been caused by a combination of the fact that the charcoal was collected from the baulk after excavation was completed, and there may have been an error of a few centimeters in the depth measurement of the carved bone artifact. Alternatively, the carbonized wood was older than its date of deposition. In any case, it can be speculated that there was some use of the area during the Early Classic based on the ceramics and radiocarbon date, but a surge of use occurred well into the Late Classic, probably after the arrival of the Dos Pilas – Aguateca dynasty.

Unit 1 (1.0 x 2.0 m) was placed in the flat area 11.9 m southwest of the cave entrance, along the western *grieta* wall and at the base of the slope that leads up to the surface site. The primary objective of the unit was to collect comparative data to help understand the depositional processes in this *grieta*, namely the sherd layers in Unit 4, which is located at an elevation of 1 m below Unit 1. Two possible scenarios were suggested, which could have led to the concentrated deposition of the artifacts in Unit 4: (1) the artifacts washed in from the surface site via the slope that runs southwest – northeast; or (2) the artifacts represent activities that were conducted in this area associated with ritual activities.

Two levels were found in this unit: a black humic layer (lot 1-1-1, 7 – 14 cm thick) and a dark gray (7.5YR 4/1) compact clay (lots 1-2-1, 1-2-2, 1-2-3) (**Figure 6.59**). Only one chert flake was collected from level 1. The second level was divided into three lots. The first lot (lot 1-2-1, 82 – 92 cm thick) contained unmodified animal bone and shell, 13 chert flakes, 1 chert uniface, 1 pebble manuport, 1 quartzite fragment, 1 almost complete mano, and sherds. Additionally, along the *grieta* wall were the disarticulated remains of at least 7 individuals, predominantly consisting of cranial fragments although other skeletal parts were also present (recovered collectively as Interment #43). According to Juan Manuel Palomo (2005) who

analyzed the human remains, this unit produced the highest frequency of cranial fragments (43 bone fragments) and teeth (n=55), a minimum number of individuals of seven. Interestingly, one cranium shows evidence of post-mortem drilling. An artifact concentration was encountered below lot 1-2-1 and was assigned lot 1-2-2. Materials collected include human bone, faunal material, sherds, a figurine fragment, 1 quartzite hammerstone, and 1 complete mano and 2 mano fragments. Lot 1-2-2 continued for 50 – 60 cm. The lot was changed to 1-2-3 when a layer of sherds was exposed. In addition to sherds, faunal material, 1 chert flake, 1 quartzite fragment, and 1 mano fragment were collected. This lot continued for 56 – 59 cm, until large rocks were exposed and covered the entirety of the unit floor. Carbon was encountered at 192 – 194 cm below surface and samples were collected. The unit was terminated at 200 – 210 cm below surface, when the large rocks were exposed and could not be easily removed by hand.

Unit 2, an irregularly shaped unit measuring 1.8 x 2.0 m, was located in the northern corner of the L-shaped *grieta*, 1.4 m northeast of the cave entrance (**Figure 6.56**). The floor of the *grieta* here is comprised primarily of flowstone. It was speculated that this space may have been ritually significant because of the following observations: (1) the prevalence of speleothem breakage scars with an absence of the broken speleothems; and (2) the presence of rimstone dams (see Appendix A for definition) suggesting that this corner would have been wet at some point and pools of water would have formed in the dams. Such a watery area above or close to the cave entrance would have combined two critical cosmological concepts, water and cave, thus providing an important space to perform ritual activities.

The first level consisted of a thin (0.1 – 1.2 cm) black humic layer with no cultural material. At the base of the humus, a hard but brittle calcified layer was exposed (**Figure 6.60**). It was penetrated by a hand pick with some effort and revealed level 2, which was comprised of a brown (10YR 3/5), more compact clay (up to 28 cm thick) with a high proportion of limestone

inclusions (3 - 8 mm). This matrix was only found in the southern portion of the unit, whereas it was not encountered in the rimstone dams in the northern portion of the unit. This observation suggests that the rimstone dams have been active in the past or are occasionally active now so that little debris accumulates. The calcified layer also indicates the presence of water activity at some point before the more recent humus was deposited. Materials recovered include human vertebrae including an axis, human rib fragments, a human talus, animal bone, an incense burner fragment, a ceramic flute fragment, and sherds.

Based on the ceramics, use in this *grieta* can be placed exclusively in the Late Classic. Contrary to most of the areas within the Grieta Principal, the two units in the Grieta Rincón revealed a higher proportion of jar forms (Unit 1: 86.7 % of overall sherd frequency, 49.3 % of rim sherd frequency; Unit 4: 81.7 %, 49.5 %). Moreover, the relative frequency of polychromes is surprisingly low (under 7 % of overall sherd frequency, 15 – 21 % of rim sherd frequency). Very few vase sherds were recovered, and no drum fragments were found.

These differences in ceramic assemblages likely reflect different types of ritual activities, albeit the nature of it we cannot say at this point. The high frequency of human crania in the cave and the *grieta* is noteworthy as well. Palomo (personal communication, 2005) has suggested that human body parts may have been deposited with the skin still intact based on the finding of an articulated radius and humerus in Unit 4 (lot 4-2-14) and crania with associated mandibles in Unit 1. The users of this portion of the *grieta* may have been of a higher status, as suggested by the discovery of a very finely carved bone. The space where Unit 4 was located may have been particularly important not only because it is in front of the cave entrance but also because it coincides with the approximate center of the *grieta*, in addition to the watery environment in the vicinity.

Synthesis of Excavation Results

A total of 29 units in Grieta Principal and 4 units in Grieta Rincón were excavated over the course of two field seasons. All areas yielded much archaeological material, albeit in varying frequencies and diversity. The greater majority of usage including architectonic modifications dates to the Late Classic period. A closer inspection of ceramic types suggest that spatial use shifted from the Two Owls Area to Chill Hill around the time Ruler 5 of Dos Pilas was captured in AD 761 and Aguateca became the primary capital. This suggests a close political connection with the religious rituals conducted in the Grieta Principal. The Inner Chamber of the Hidden Jar Area and the Southern Entrance Area were also used during the Late Classic but less intensively. The Alcove of the Hidden Jar Area was of particular religious significance in the Late Preclassic. Windy Valley's revelation of a Preclassic interment raises the possibility that other parts of the Grieta Principal contain earlier material underlying what we excavated. Early use was also revealed in Grieta Rincón. The platform feature inside the cave at Grieta Rincón was constructed either during the later part of the Late Preclassic or early part of the Early Classic. In addition, early ceramics were collected from the earlier strata of the units outside of the cave in the *grieta*. Early Classic use of Grieta Rincón would be contemporaneous with use of the Barranca Escondida cave and the surrounding area where stelae associated with the earlier Tamarindito dynasty were found. This finding is expected as the two subterranean features are practically adjacent to each other.

Table 6.1. Index of excavation units.

p	Subop		Unit	Description of Unit Location
Grieta Rincón (AG30)	A	The Cave	5	Platform on 1st level inside cave
	B	The Grieta	1	Southwest of cave entrance
			2	Northern corner of <i>grieta</i> , northeast of cave entrance
			4	1.5 m southwest of cave entrance
Grieta Principal (AG31)	A	Hidden Jar Area: Chambers 2 & 4, Passages 5 & 6	9	In Outer Chamber (Chamber 4), in southern, flat area
			10	In Outer Chamber (Chamber 4), northwestern area
			11	In Inner Chamber (Chamber 2), west of stalagmite where partial jar was found
			12	In Inner Chamber (Chamber 2), west of Wall 4
			13	Southern part of Alcove
			14	In Outer Chamber (Chamber 4), southeastern area
	B	Two Owls Area: Chamber 1, Passages 1, 2 & 3	6	South of Wall 1, in Passage 1
			7	Center of Passage 1
			8	Step 1 in Two Owls Chamber (Chamber 1)
			9	In Two Owls Chamber, southwest of Wall 2
			10	In Passage 1, in front of smoke-blackened <i>grieta</i> wall
			11	Center of Passage 1, south of Unit 7 (Unit 11-extension runs northeastward)
			12	Southern end of Passage 1
			13	Southern end of Two Owls Chamber, along southeastern <i>grieta</i> wall
	C	Southern Entrance Area: Chamber 3, Passages 4, 7 & 8	7	Northern end of Passage 8
			8	Northern part of Upper Chamber (Chamber 3)
			9	Southern part of Upper Chamber, along northwestern <i>grieta</i> wall
			10	Southern part of Upper Chamber, along southeastern <i>grieta</i> wall
			11	At the base (northeastern end) of Southern Entrance Passage (Passage 7)
	D	Chill Hill Area: Chamber 5, the Cave	1	In southeastern, flat area of Chamber 5
			2	Inside the cave, adjacent to Unit 5
			3	In the northwestern end of Chamber 5, along northwestern <i>grieta</i> wall
			4	In the northwestern part of Chamber 5, southwest of Unit 3
			5	Inside the cave, adjacent to Unit 2
			6	Southwest of cave entrance, in access way to cave
			7	Northern end of Chamber 5, in front of niche with speleothems
			8	Northeastern end of Chamber 5, along <i>grieta</i> wall
	E	Windy Valley: Passage 9	1	Center of Passage 9

Aguateca Grieta Archaeological Project 2005
AG- _____ Page _____ of _____ Lot Form

Excavation? Y / N **Screened? Y / N** **Screen Size:** _____

Site _____	Op. _____	Subop. _____	Unit _____	Level _____	Lot _____
					Unit Size: _____ m
Date Started (dd/month/yy): _____					
Date Ended (dd/month/yy): _____					
Supervisor(s): _____					
This Level is: Arbitrary (____ cm) / Cultural / Natural					

Content (What comprises the lot?): Guano/ Mud/ Rock Cluster/ Rock Art/ Speleothem Breakage/ Wall/ Artifact Cluster/ Burning/ Interment/ Other: _____

Lot Description: Architecture / Feature / Other (Identify and describe. Reason started, narration, reason ended.): _____

Provenience (Location and associated lots. Be specific.): _____

Disturbance: None / Bioturbation / Looting / Modern / Other: _____

Methods Employed (Identify and describe how investigations were conducted): _____

Matrix (description, texture, inclusions): _____

(Munsell Color): _____ (Description): _____

Sketch Map / Illustration
(include elevation info where applicable):

Artifacts (Collected? Y / N): _____
Artifact Content and Density: _____

# of Bags	VS	BA	LT	OB	HB	BU			
Artifact #									

Elevation Data:
Top Elevations: NE _____ SE _____ SW _____ NW _____ C _____ Datum: _____
Bottom Elevations: NE _____ SE _____ SW _____ NW _____ C _____ Datum: _____
Other elevation info: _____

Datum Info: _____

Photographed Before? Y / N Photo log# _____ **Matrix Smudge:** _____
Photographed After? Y / N Photo log# _____
Plan? Y / N # _____
Profile? Y / N # _____
Matrix Sample? Y / N # _____
Harris Matrix: _____

Figure 6.1. Lot form (front, back) used for the *grieta* excavations.

Table 6.2. Artifact type codes used to categorize artifacts.

Code	Description
BA	Animal bone and shell, includes unmodified and modified faunal material
DS	Donut stones
FG	Clay figurines
HB	Human bone (disarticulated bone that is not enough to call Interment)
JD	Stone ornaments (greenstones, pyrite, stone beads, white stone, mirror backs)
LT	Minor lithics (chert, polished celts)
ML	Malacates (stone and ceramic spindle whorls)
MN	Manos
MT	Metates
OA	Other ceramic artifacts (reworked sherds,
OB	Obsidian artifacts
OM	Other materials
OS	Other stone artifacts (hammerstones, rubbing stones, pestles, pumice, pigments)
SP	Speleothems
VS	Ceramic sherds or vessels

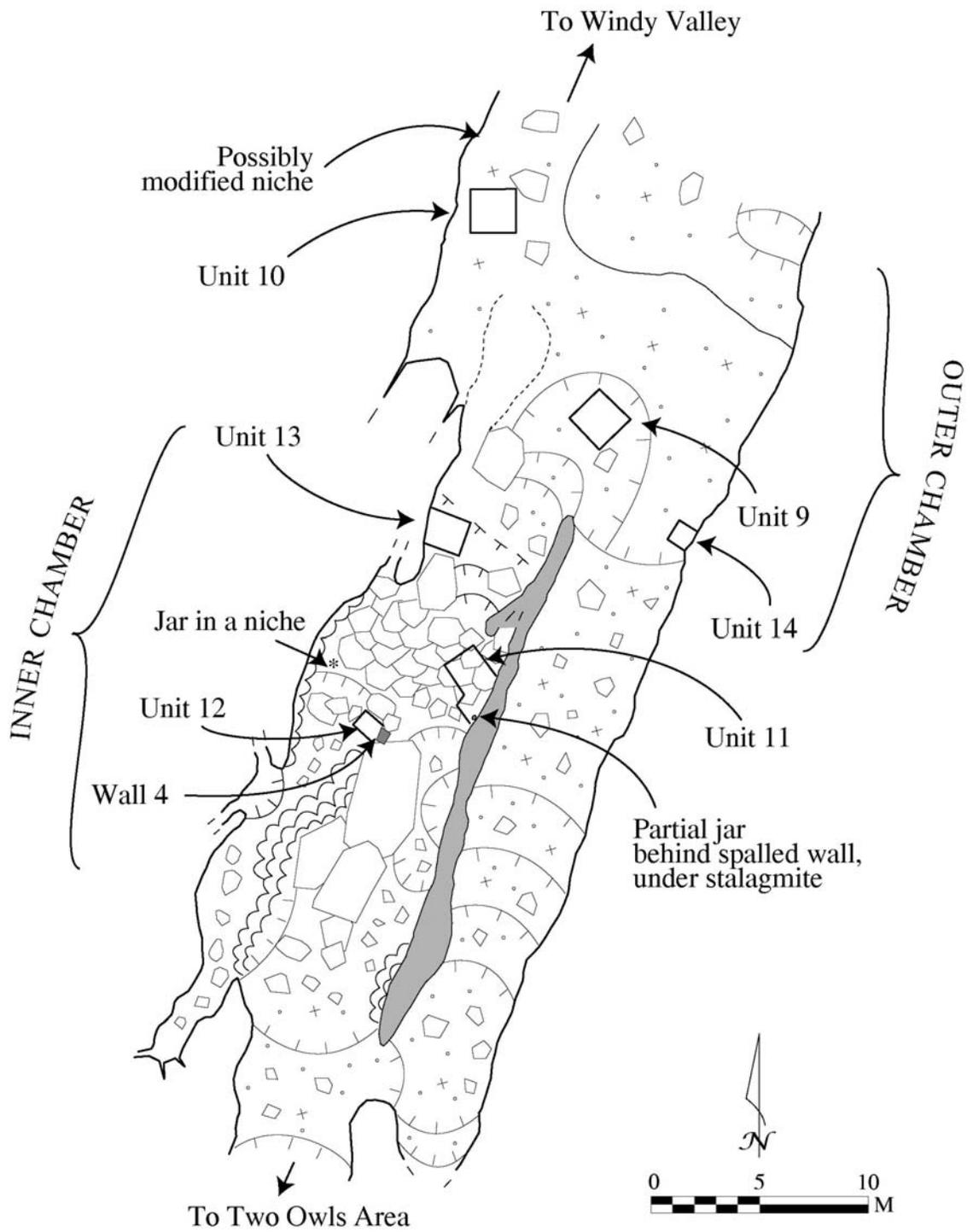


Figure 6.2. Map of the Hidden Jar Area showing the locations of the excavation units, Units 9, 10, 11, 12, 13, and 14.

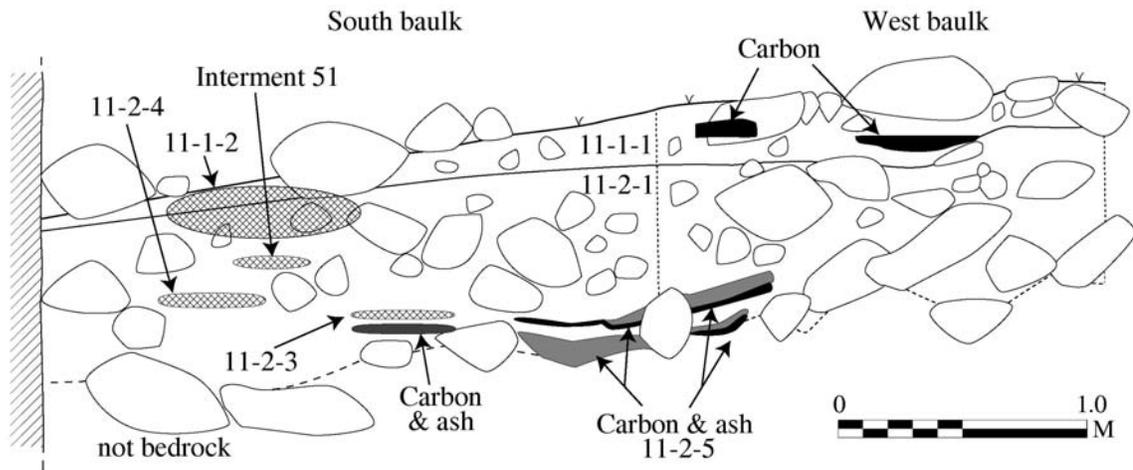


Figure 6.3. Profiles of the south and west baulks of Unit 11, Inner Chamber, Hidden Jar Area.

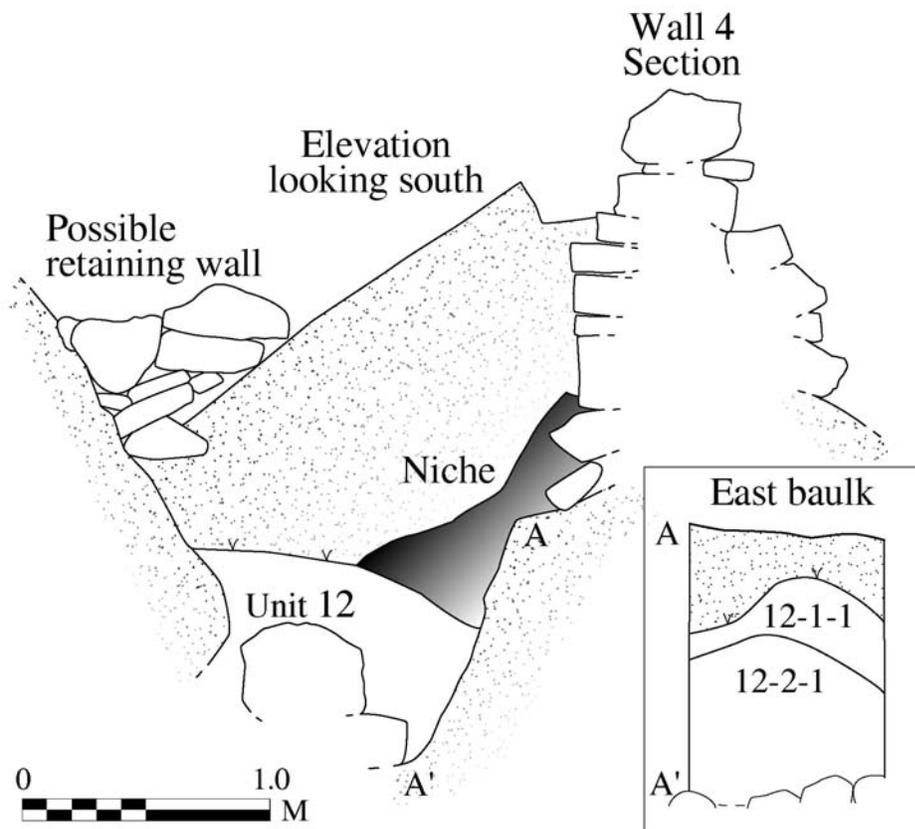


Figure 6.4. Section drawing of Wall 4 and the south view of the area around Unit 12, including the niche, Inner Chamber, Hidden Jar Area.

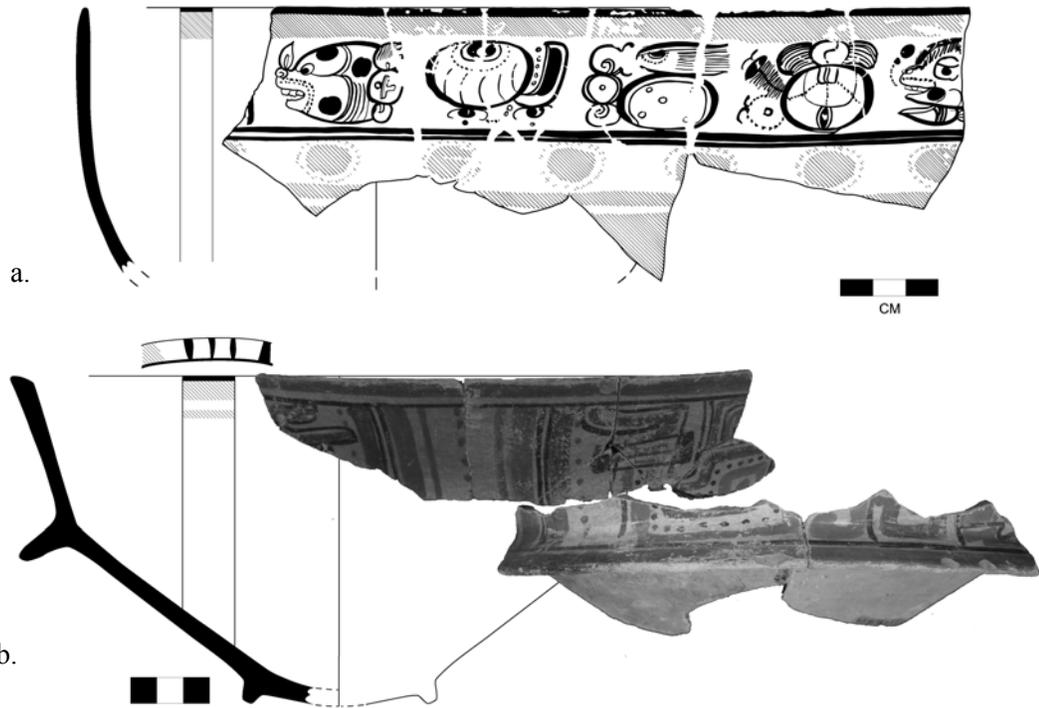


Figure 6.5. Artifacts from Unit 12, Inner Chamber, Hidden Jar Area: a. Bowl, Saxche Orange Polychrom with a PSS, Unit 12; b. Plate, Dos Arroyos Orange Polychrome, sherds from this vessel were found in Units 11 and 12).

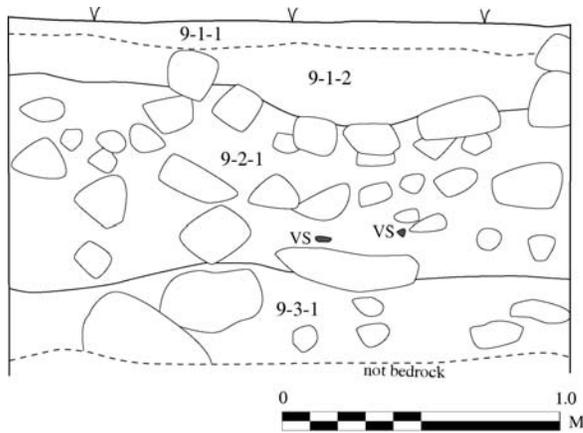


Figure 6.6. Profile of west baulk of Unit 9, Outer Chamber, Hidden Jar Area. (VS=sherd).



Figure 6.7. Hollow figurine head, Unit 9, Outer Chamber, Hidden Jar Area. See Figure 7.10c for line drawing.

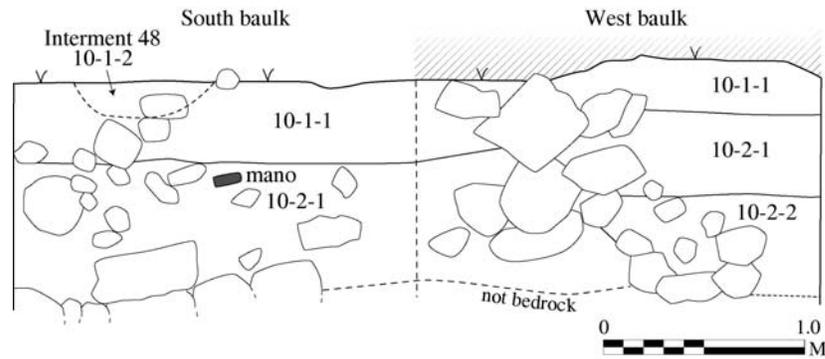


Figure 6.8. Profiles of the south and west baulk of Unit 10, Outer Chamber, Hidden Jar Area.

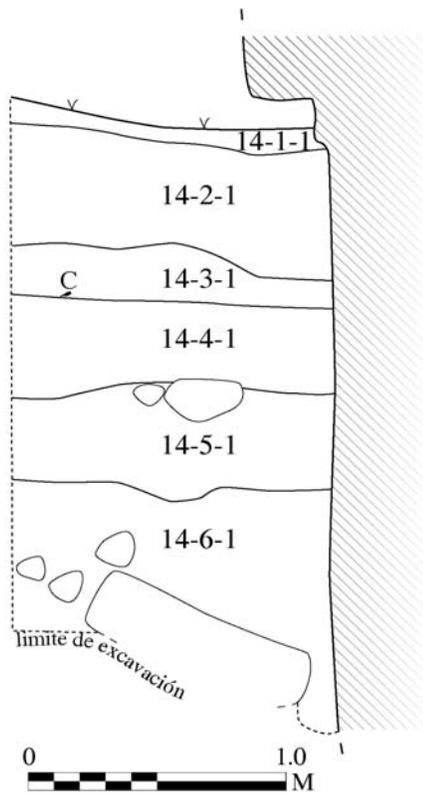


Figure 6.9. Profile of north baulk of Unit 14, Outer Chamber, Hidden Jar Area.



Figure 6.10. Photo of Unit 13 in Passage 5 showing the altar-platform before excavation.

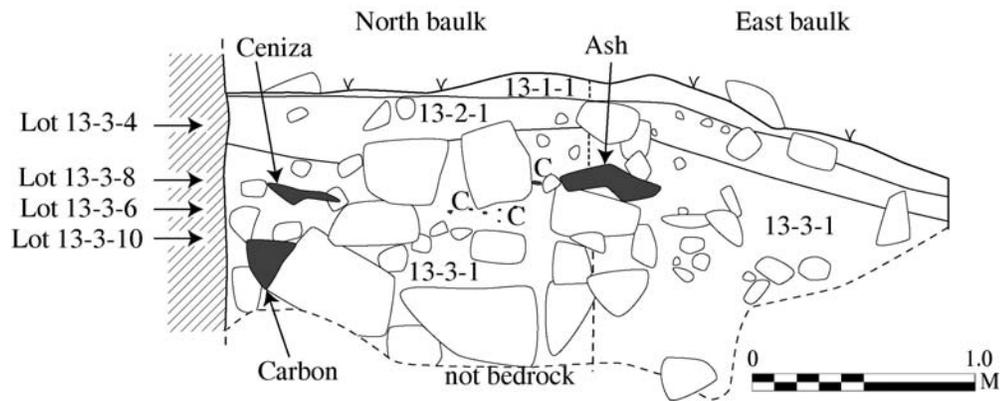


Figure 6.11. Profiles of north and east baulks of Unit 13, Alcove, Hidden Jar Area. (C= carbon).

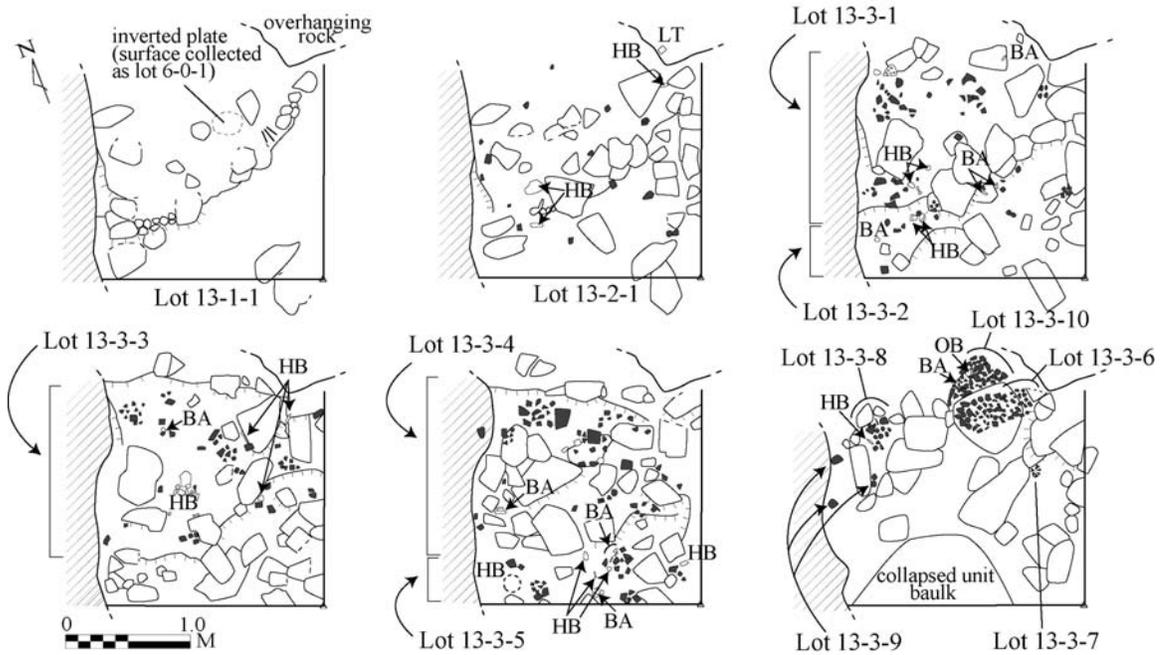


Figure 6.12. Plans of the lots collected in Unit 13, Hidden Jar Area.

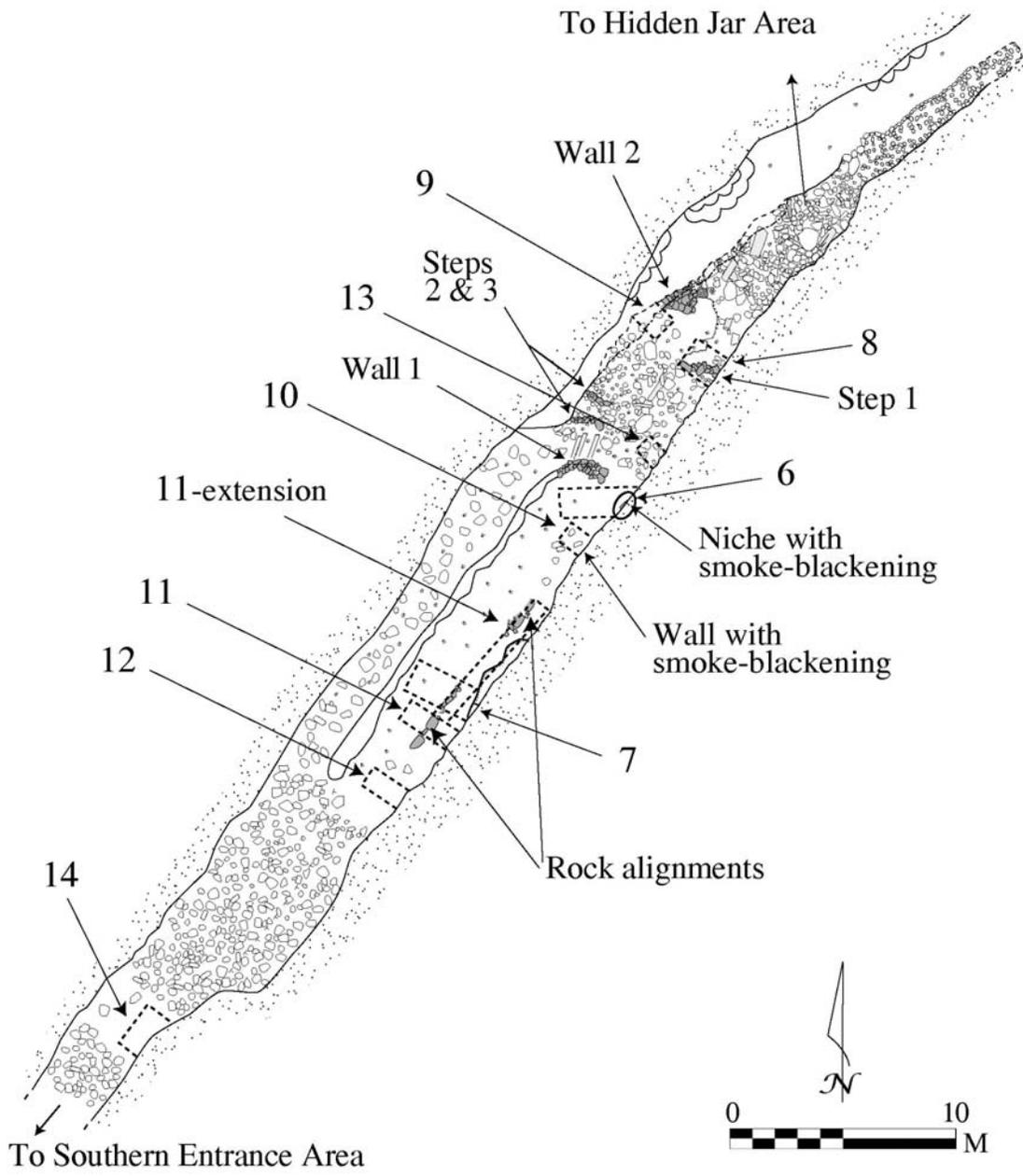


Figure 6.13. Map of the Two Owls Area (Suboperation 31B) showing the locations of the excavation units, Units 6, 7, 8, 9, 10, 11, 12, 13 and 14.

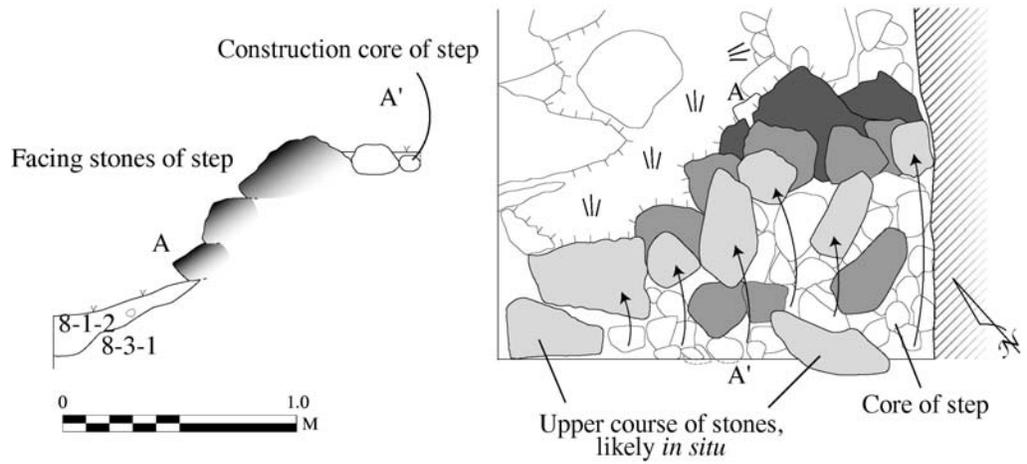


Figure 6.14. Section and plan of Step 1 after excavation of Unit 8, Two Owls Chamber. The arrows indicate movement from its original placement.

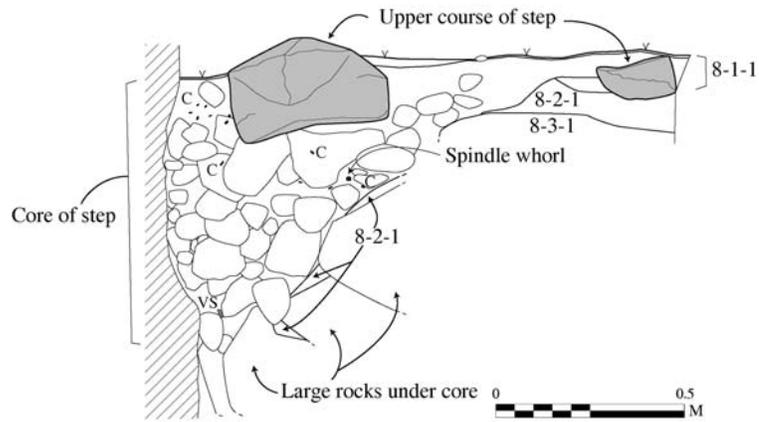


Figure 6.15. Profile of the south baulk of Unit 8, Two Owls Chamber.

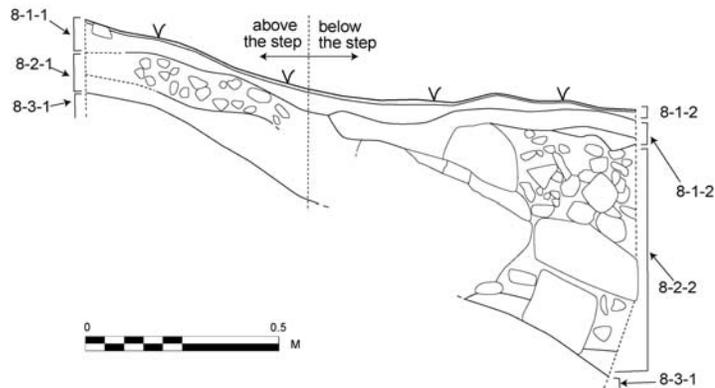


Figure 6.16. Profile of the west baulk of Unit 8, Two Owls Chamber.

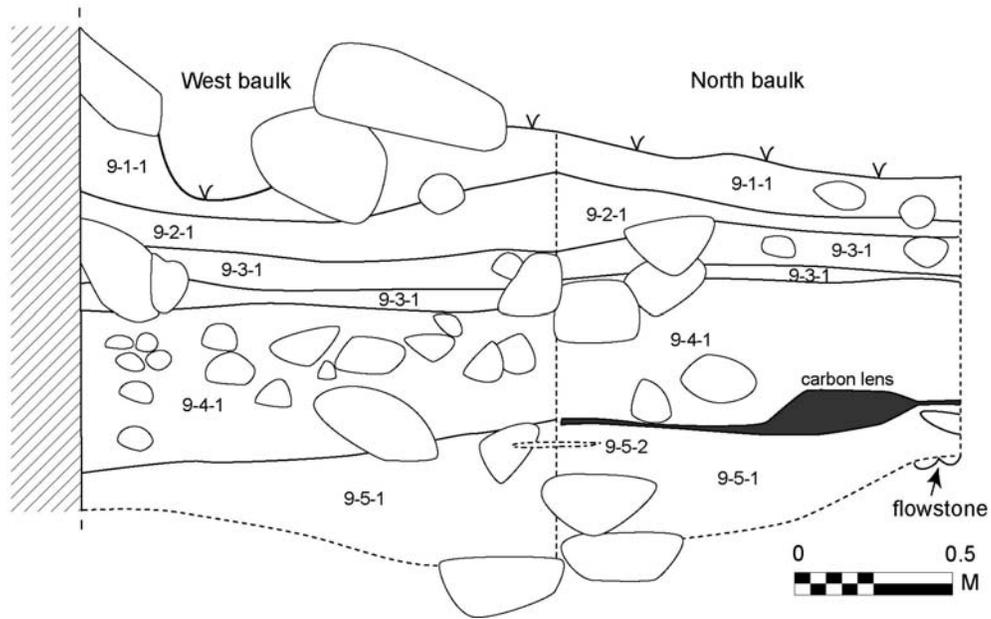


Figure 6.17. Profiles of west and north baulks of Unit 9, Two Owls Chamber.

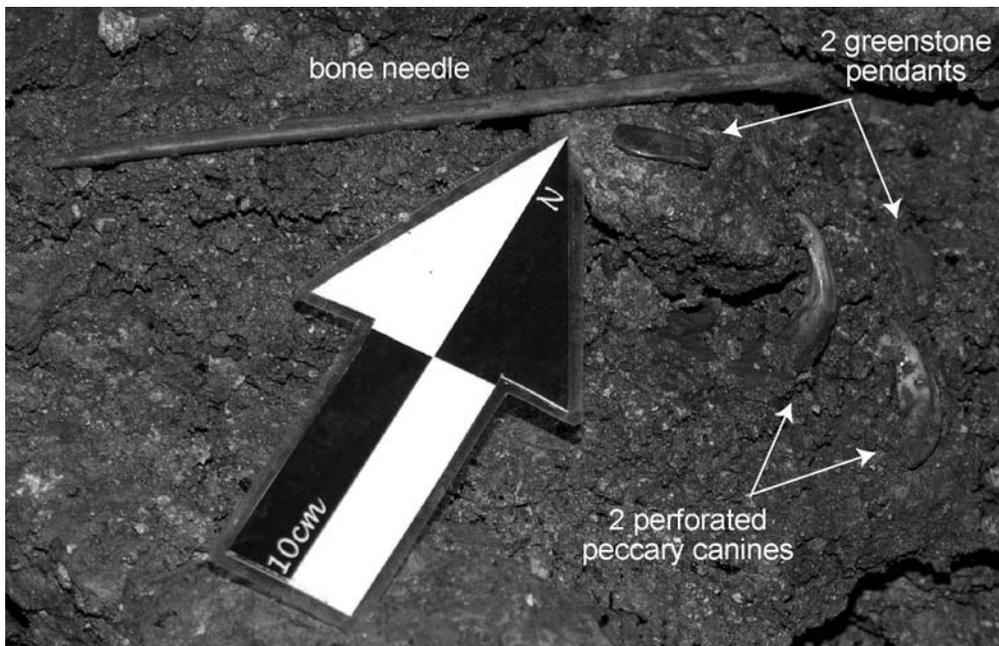


Figure 6.18. Photo of a cache consisting of a complete bone needle, two jade pendants, and two perforated animal teeth (lot AG31B-9-5-2).

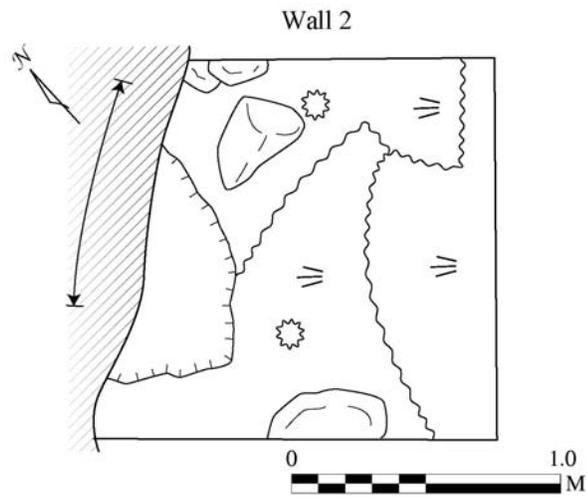


Figure 6.19. Plan of the bottom of the unit in which flowstone was exposed. Unit 9, Two Owls Chamber. The line in the *grieta* wall is where it was wet with drip water.

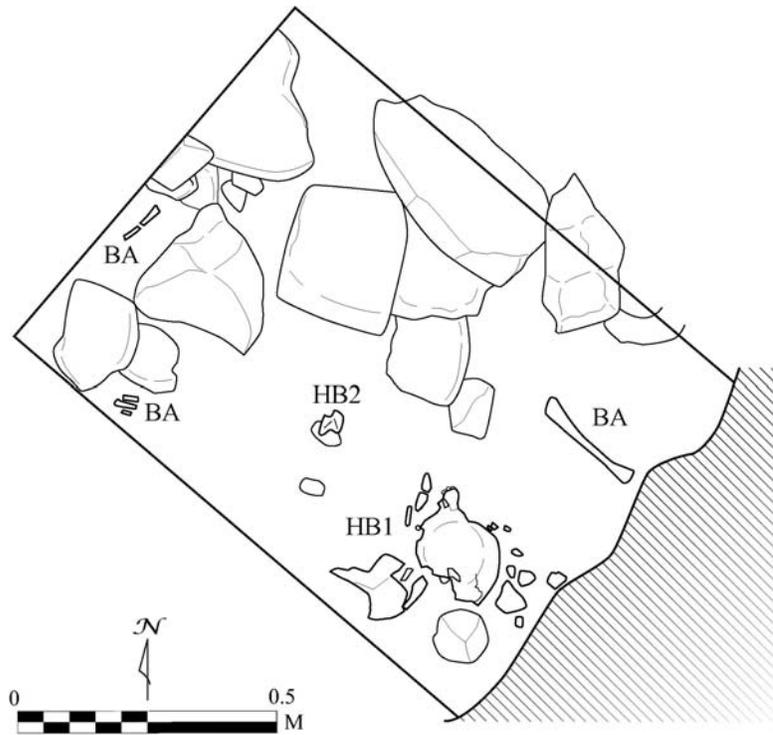


Figure 6.20. Plan showing disarticulated human bone in Unit 13 (Interment #27). (HB1=cranial bones of a subadult, HB2= scapula of an adult; BA=animal bones).

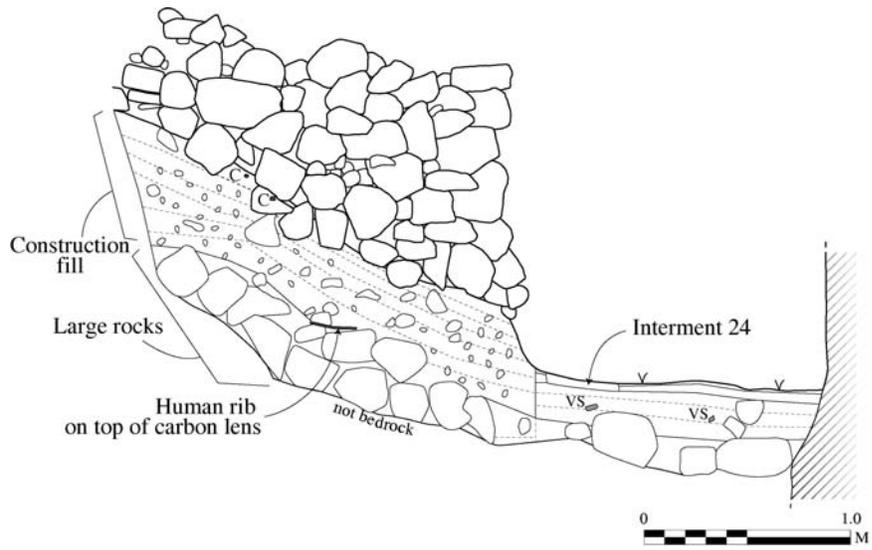


Figure 6.21. North profile of Unit 6 with the south elevation of Wall 1, Two Owls Area.

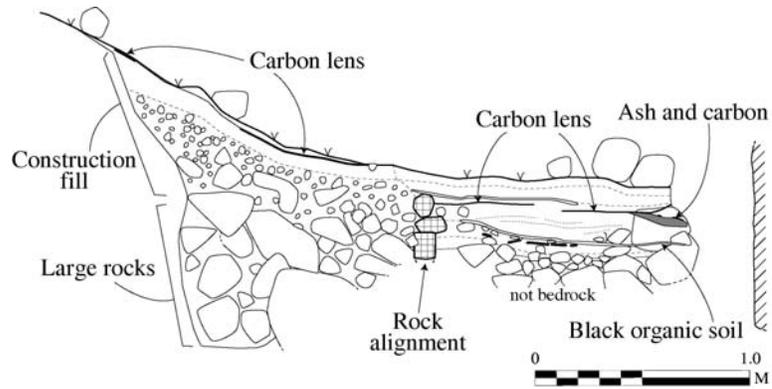


Figure 6.22. North profile of Unit 7, Passage 1, Two Owls Area.

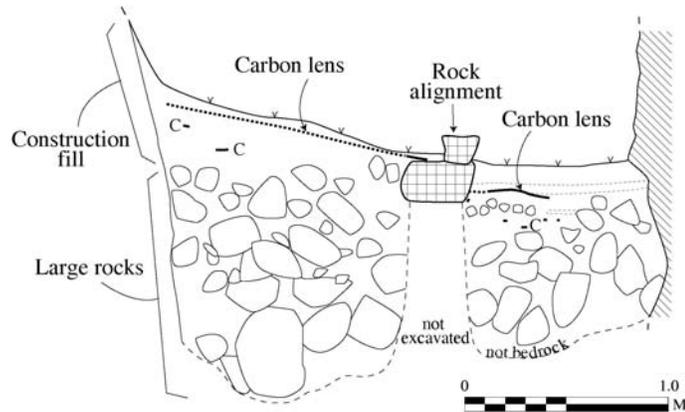


Figure 6.23. North profile of Unit 11, Passage 1, Two Owls Area.

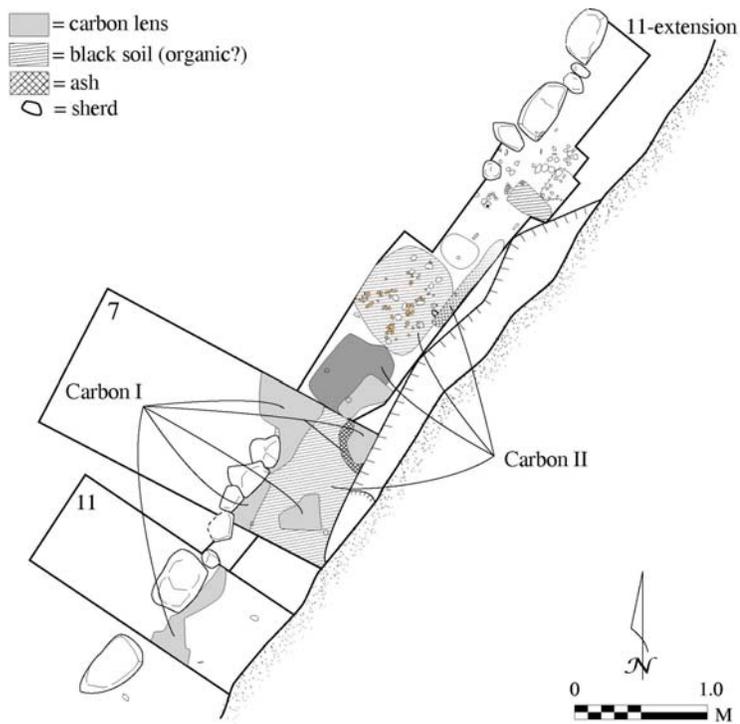


Figure 6.24. Plan of Units 7, 11 and 11-extension. Numbers indicate unit numbers.

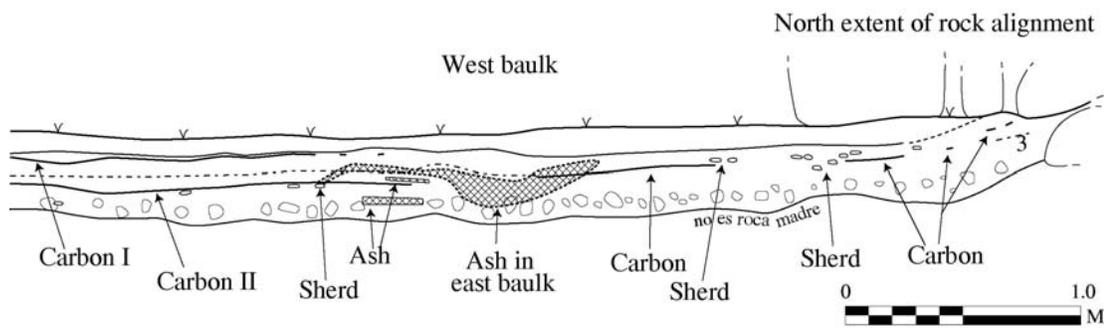


Figure 6.25. West profile of Unit 11-extension.



Figure 6.26. Saxche-Palmar Orange Polychrome bowl that had been smashed in small sherds recovered from within a layer of carbon, from the eastern flat parts of Units 7 and 11, and Unit 11-extension. Note one of these sherds was found in Unit 14.



Figure 6.27. Delirio-plano Relief vessel recovered from the eastern flat area of Unit 7.

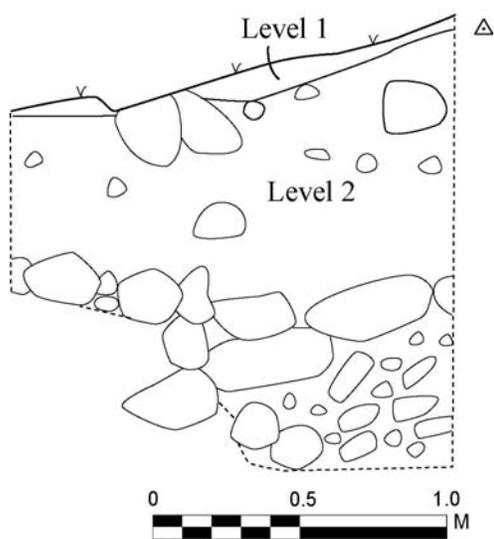


Figure 6.28. Profile of south baulk of Unit 12, Passage 1, Two Owls Area.

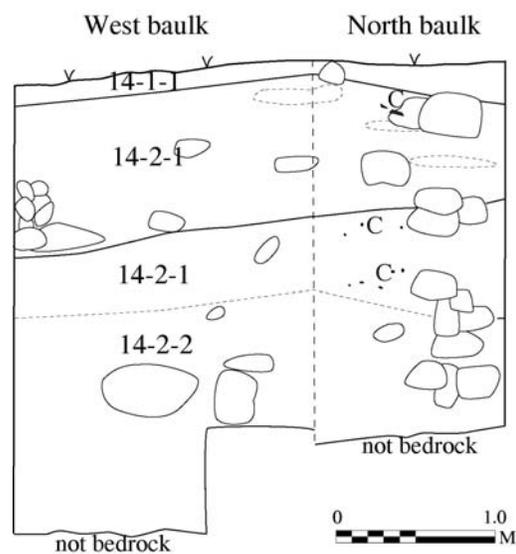


Figure 6.29. West and north profiles of Unit 14, Passage 3, Two Owls Area.

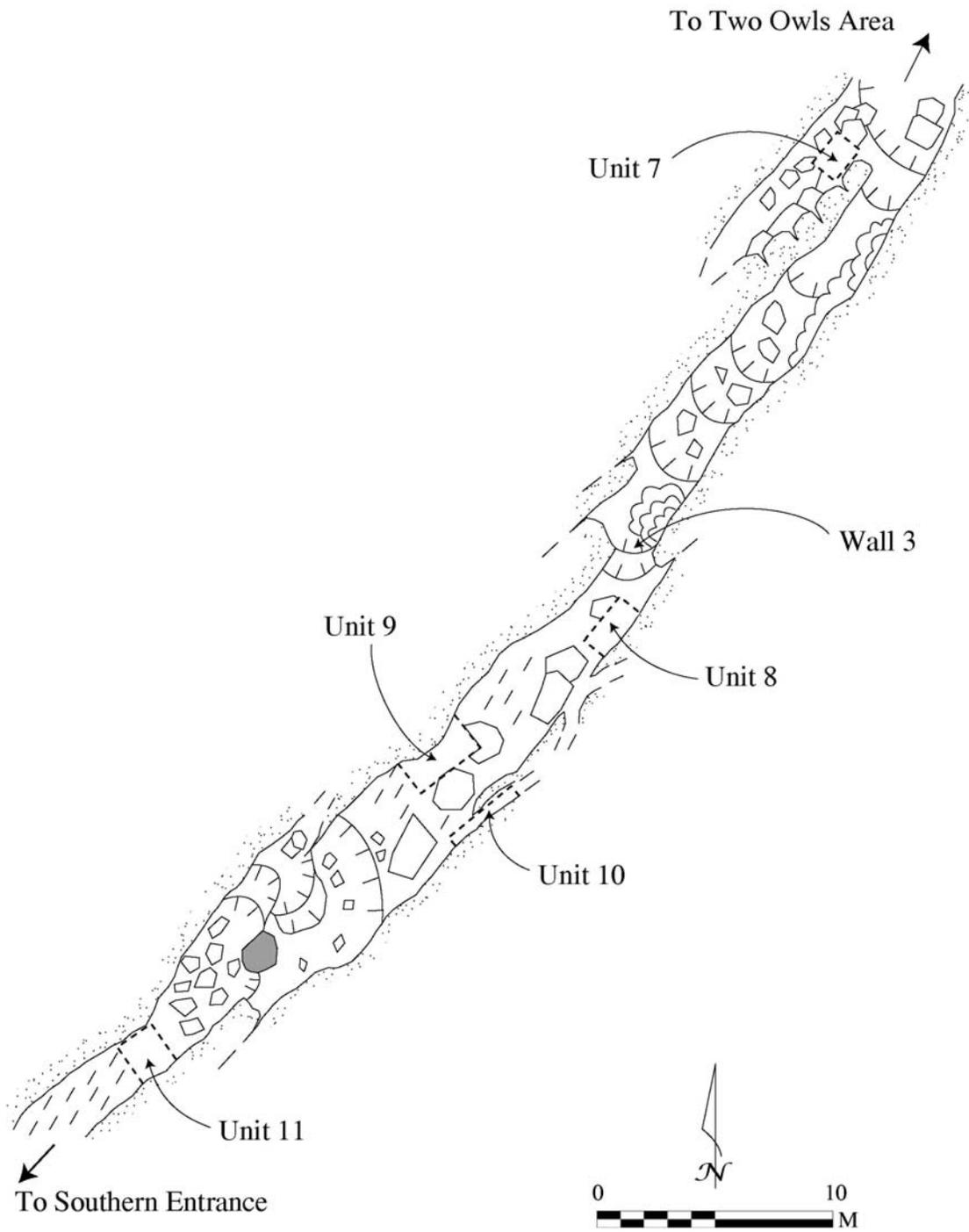


Figure 6.30. Map of the Southern Entrance Area (Suboperation 31C) showing the locations of the excavation units, Units 7, 8, 9, 10, and 11.

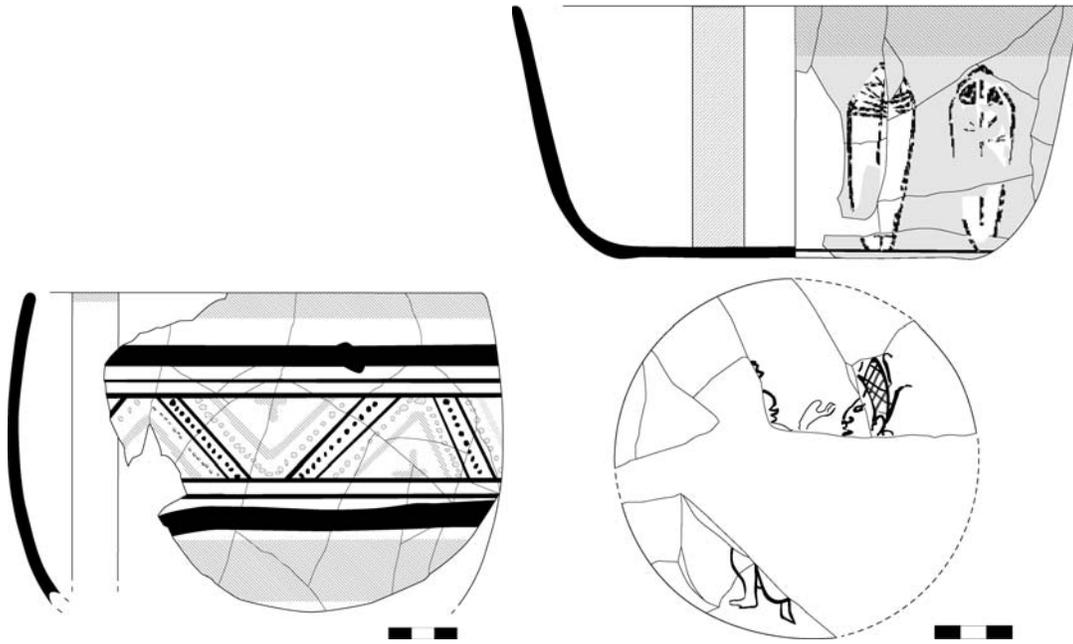


Figure 6.31. Reconstructible vessels recovered from Unit 7.

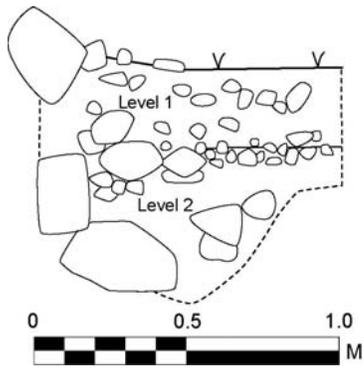


Figure 6.32. Profile of Unit 8, Upper Chamber, Southern Entrance Area.

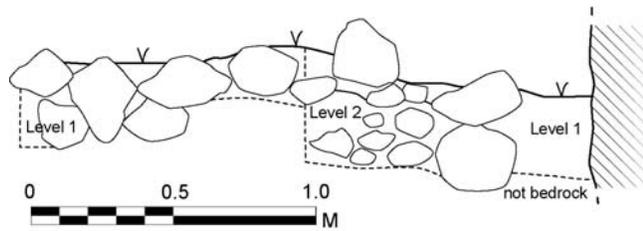


Figure 6.33. Profile of Unit 11, Southern Entrance Area.

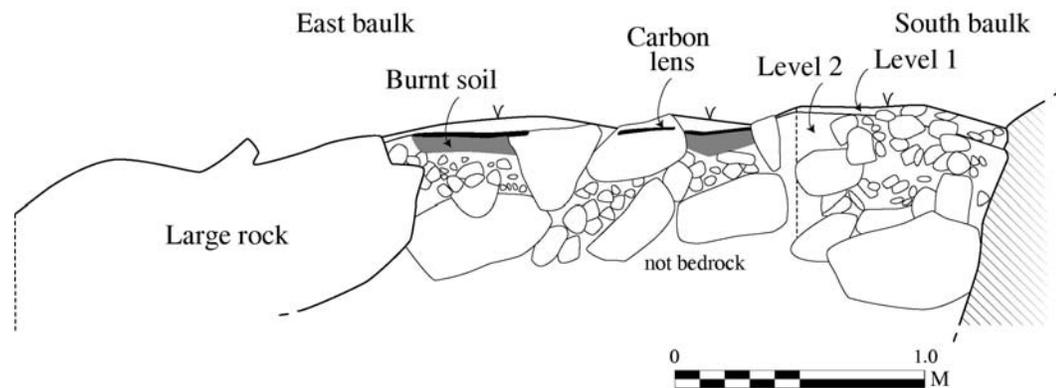


Figure 6.34. Profile of Unit 9, Upper Chamber, Southern Entrance Area.

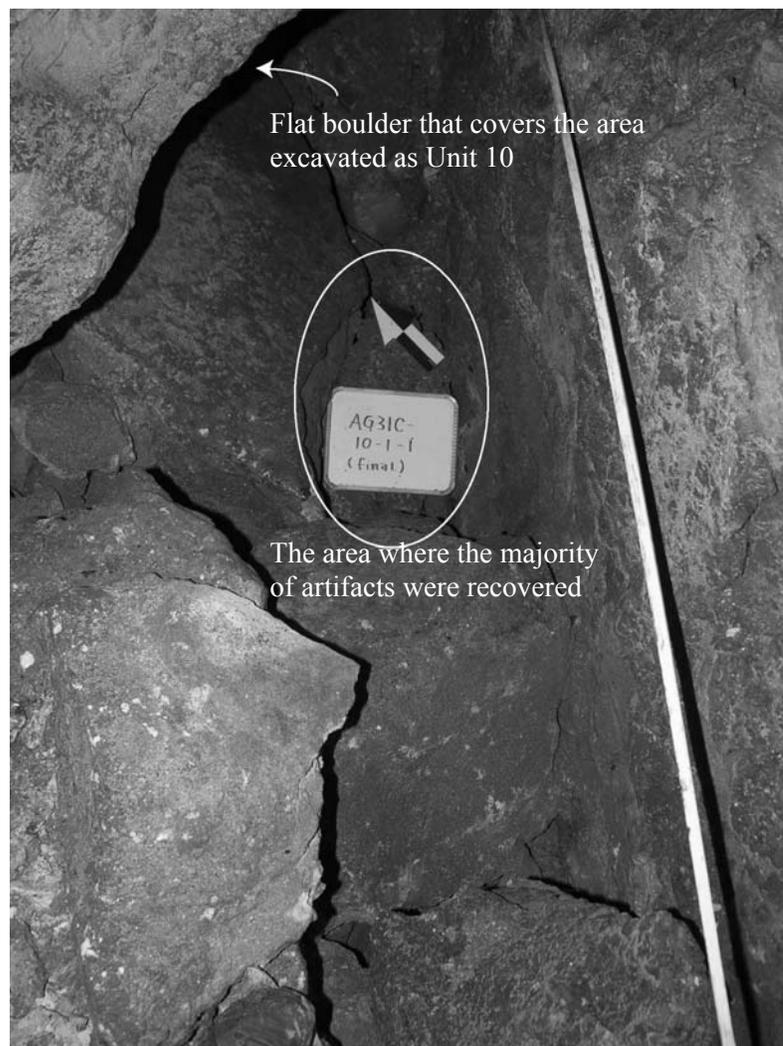


Figure 6.35. Photo of Unit 10, Upper Chamber, Southern Entrance Area.

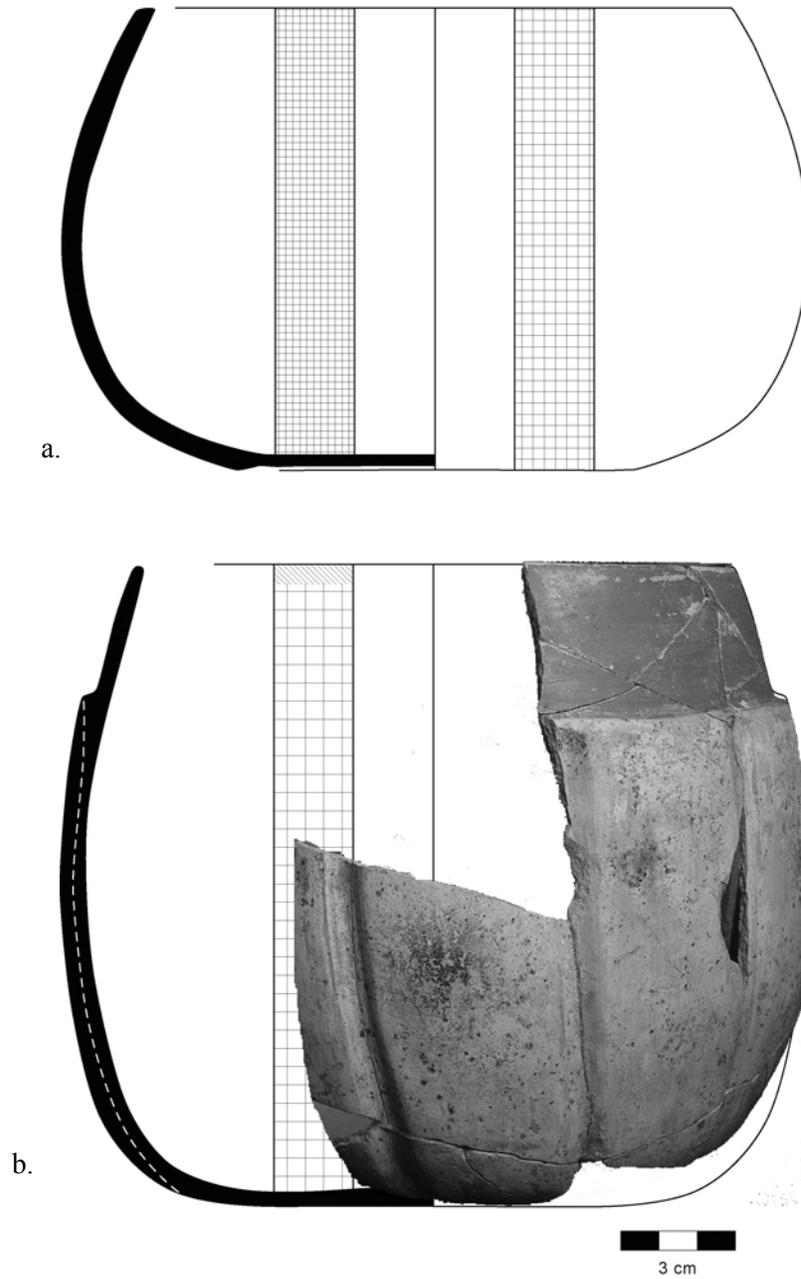


Figure 6.36. Vessels recovered from Unit 10, Southern Entrance Area: a. Infierno Black bowl; b. Unnamed Fluted bowl.

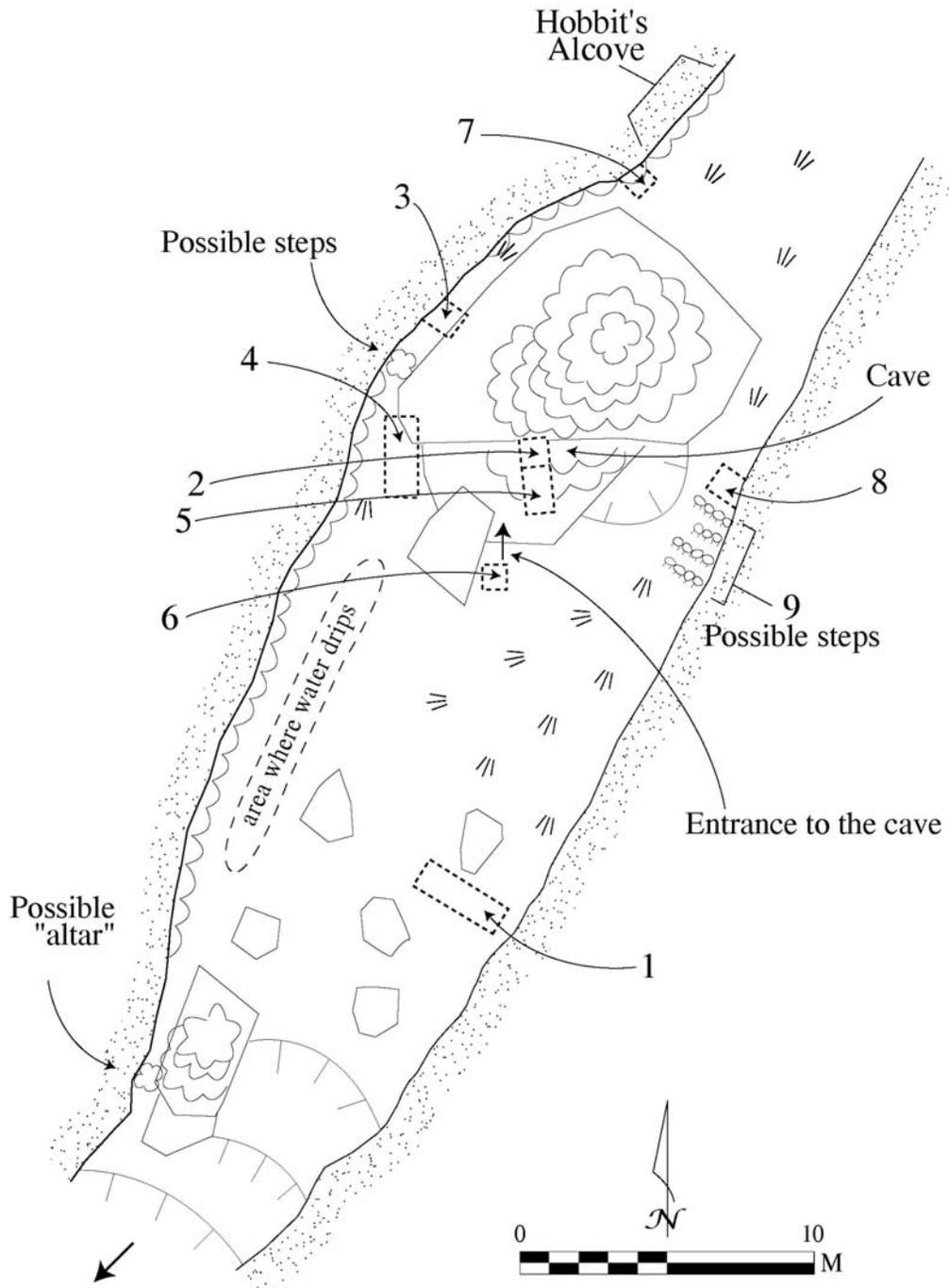


Figure 6.37. Map of the Chill Hill Area (Suboperation 31D), showing the locations of the excavation units. Numbers show unit numbers.

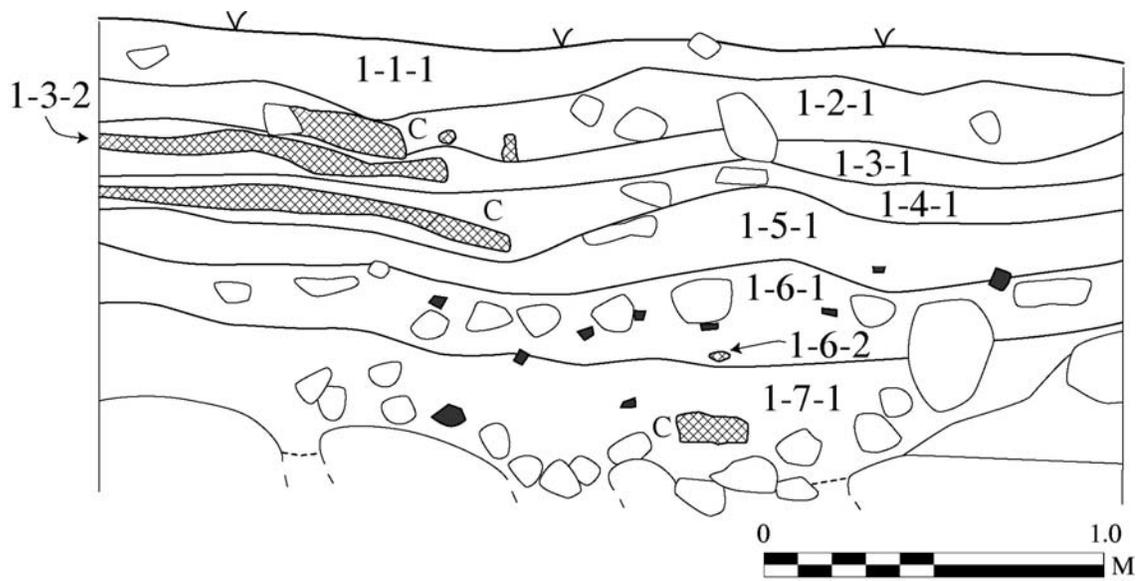


Figure 6.38. South profile of Unit 1, Chamber 5, Chill Hill. (C=carbon; 1-6-2 is an ash lens associated with Interment #52. The black shapes represent sherds.)

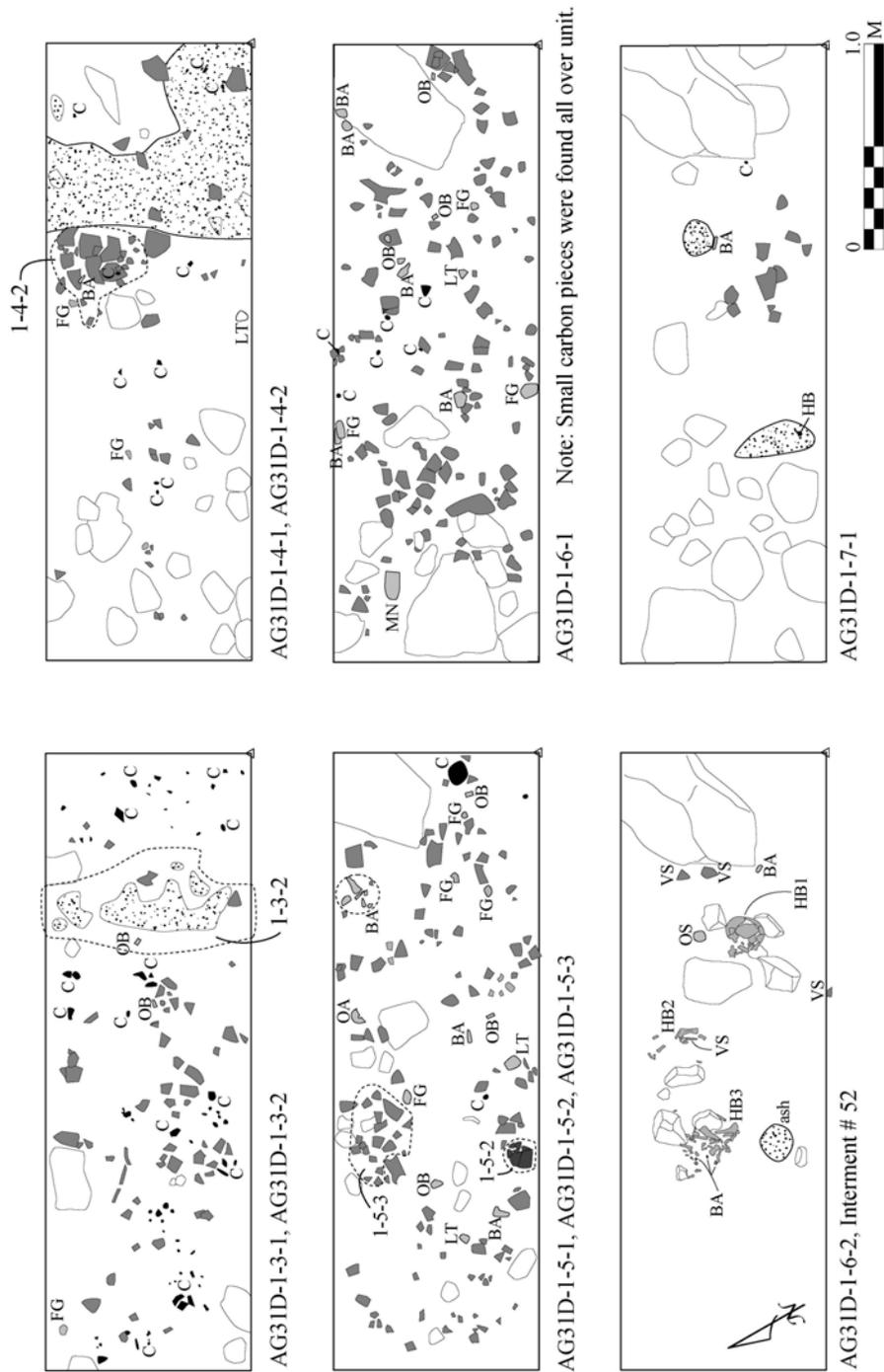


Figure 6.39. Plans of lots 1-3-1, 1-3-2, 1-4-1, 1-4-2, 1-5-1, 1-5-2, 1-5-3, 1-6-1, 1-6-2, and 1-7-1 in Unit 1. (BA=animal bone, C=carbon, FG=figurine fragment, LT=lithic, MN=mano fragment, OB=obsidian, OS=hammerstone, VS=sherd, Unlabeled dark shapes are sherds. Interment #52: HB1=human cranial bones, maxilla; HB2=mandible, maxilla fragments, phalanges, rib fragment; HB3=ribs, axis, teeth, humerus, radius, scapula).

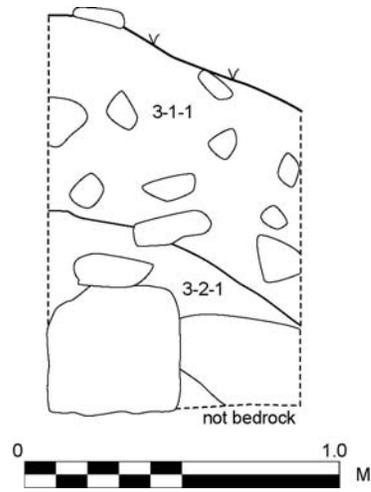


Figure 6.40. Profile of Unit 3, Chill Hill Area.

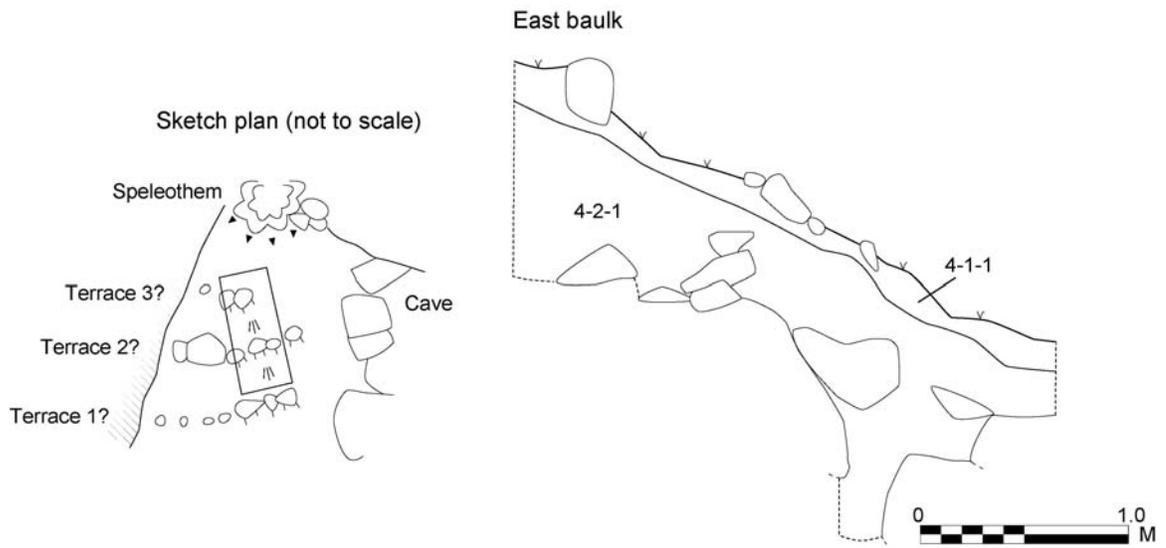


Figure 6.41. Sketch plan of unit location and profile of Unit 4, Chill Hill Area.

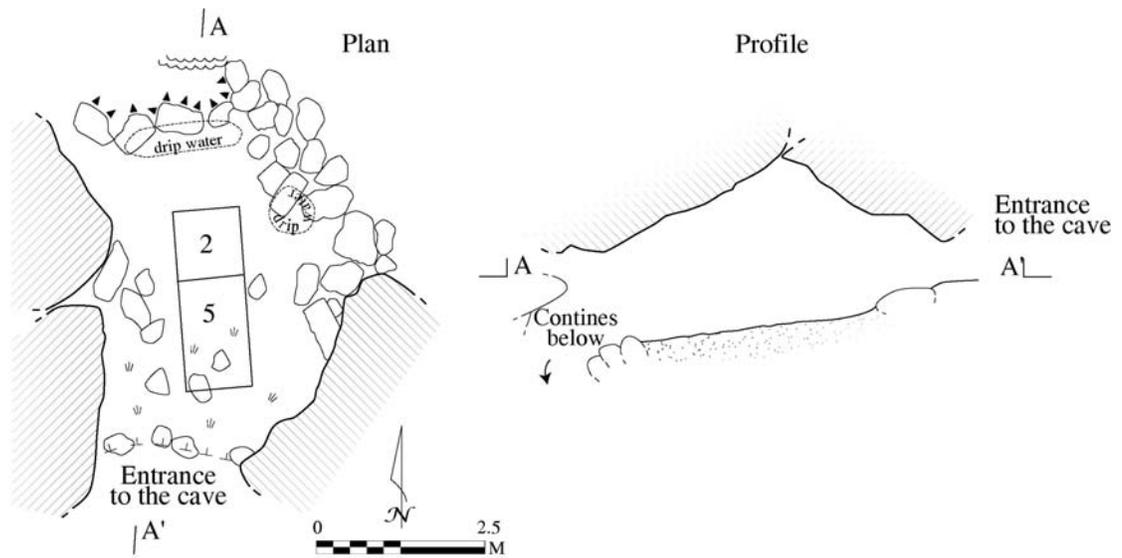


Figure 6.42. Map of the cave on Chill Hill, showing the location of Units 2 and 5.

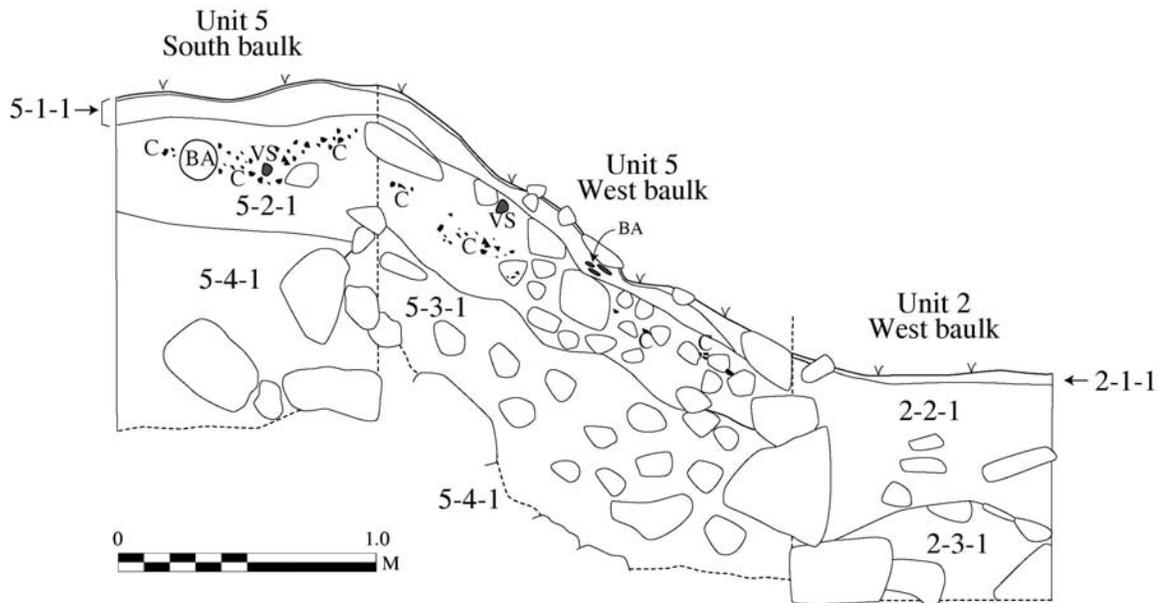


Figure 6.43. Profiles of the south and west baulk of Units 2 and 5, Cave, Chill Hill Area.



Figure 6.44. Photo of lot 5-2-3, inside the cave on Chill Hill Area. Note the high concentration of sherds and other artifacts.

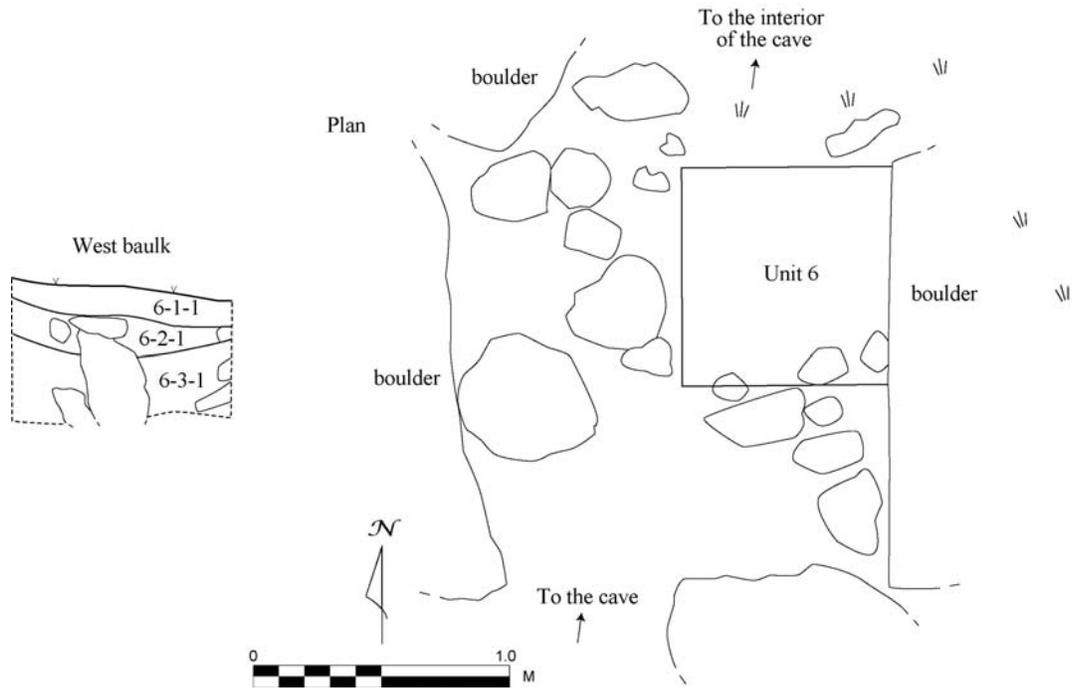


Figure 6.45. Plan and profile of Unit 6, Entrance to Cave, Chill Hill Area.



Figure 6.46. Photo of alcove nicknamed Hobbit Alcove, with Unit 7 below.

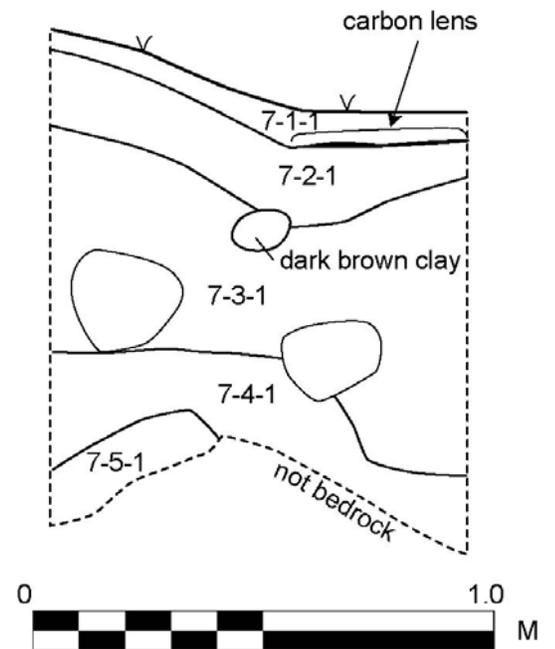


Figure 6.47. Profile of Unit 7, Chill Hill Area.

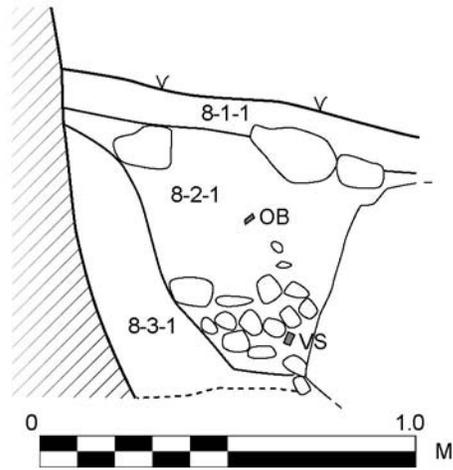


Figure 6.48. Profile of Unit 8, Chill Hill Area.

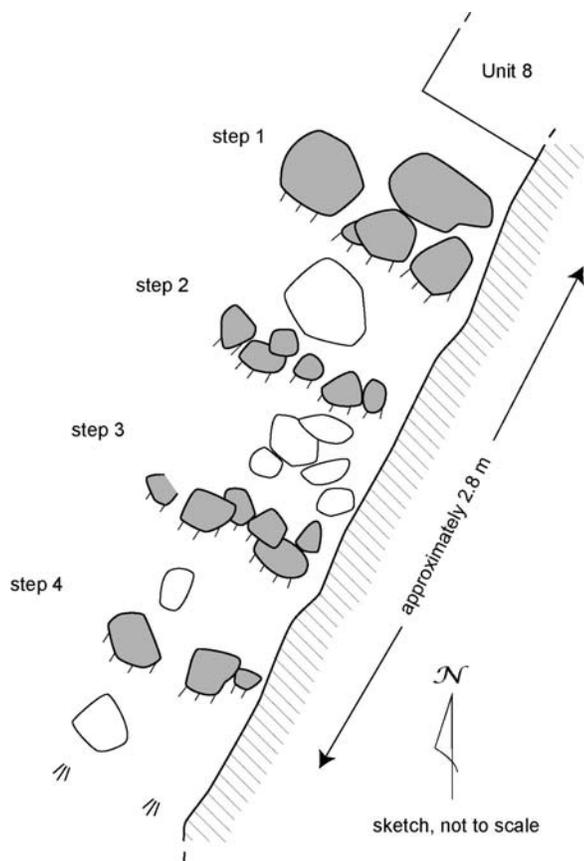
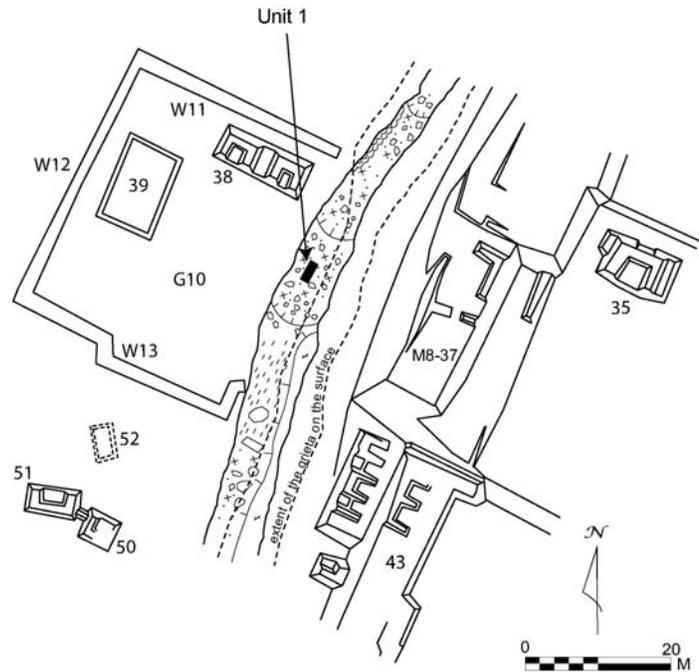
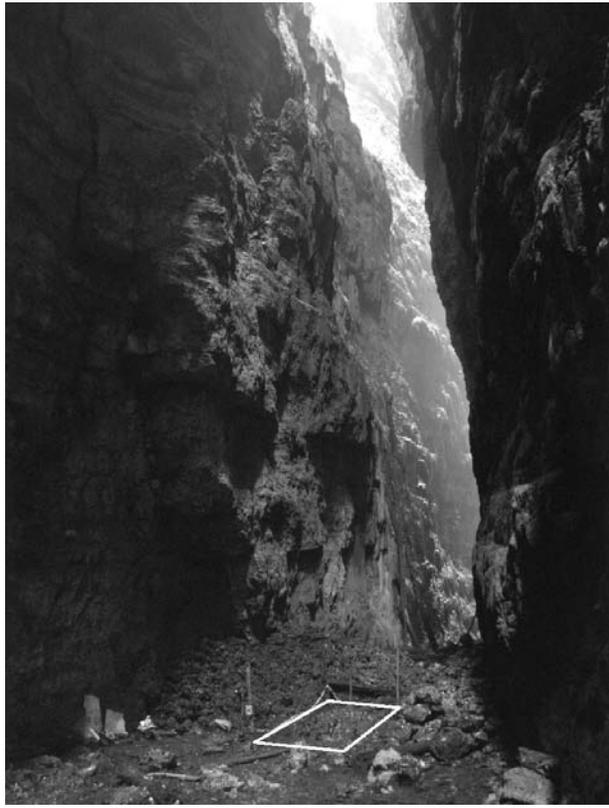


Figure 6.49. Sketch plan of possible steps (Unit 9), Chill Hill Area.



a.



b.

Figure 6.50. Location of Unit 1 in the Windy Valley: a. Map showing surface structures and Unit 1; b. Photo showing Windy Valley with Unit 1 outlined in white.

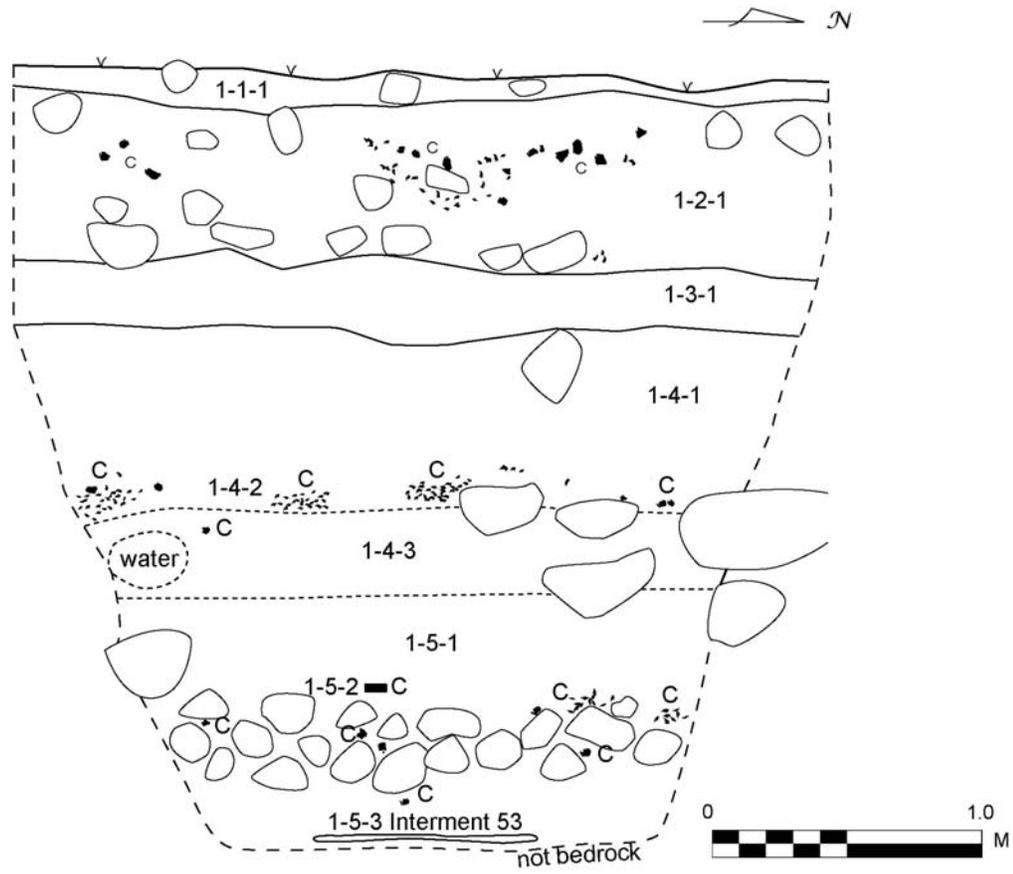


Figure 6.51. West profile of Unit 1, Windy Valley.



Figure 6.52. Photo of carbonized wood from lot AG31E-1-5-2.

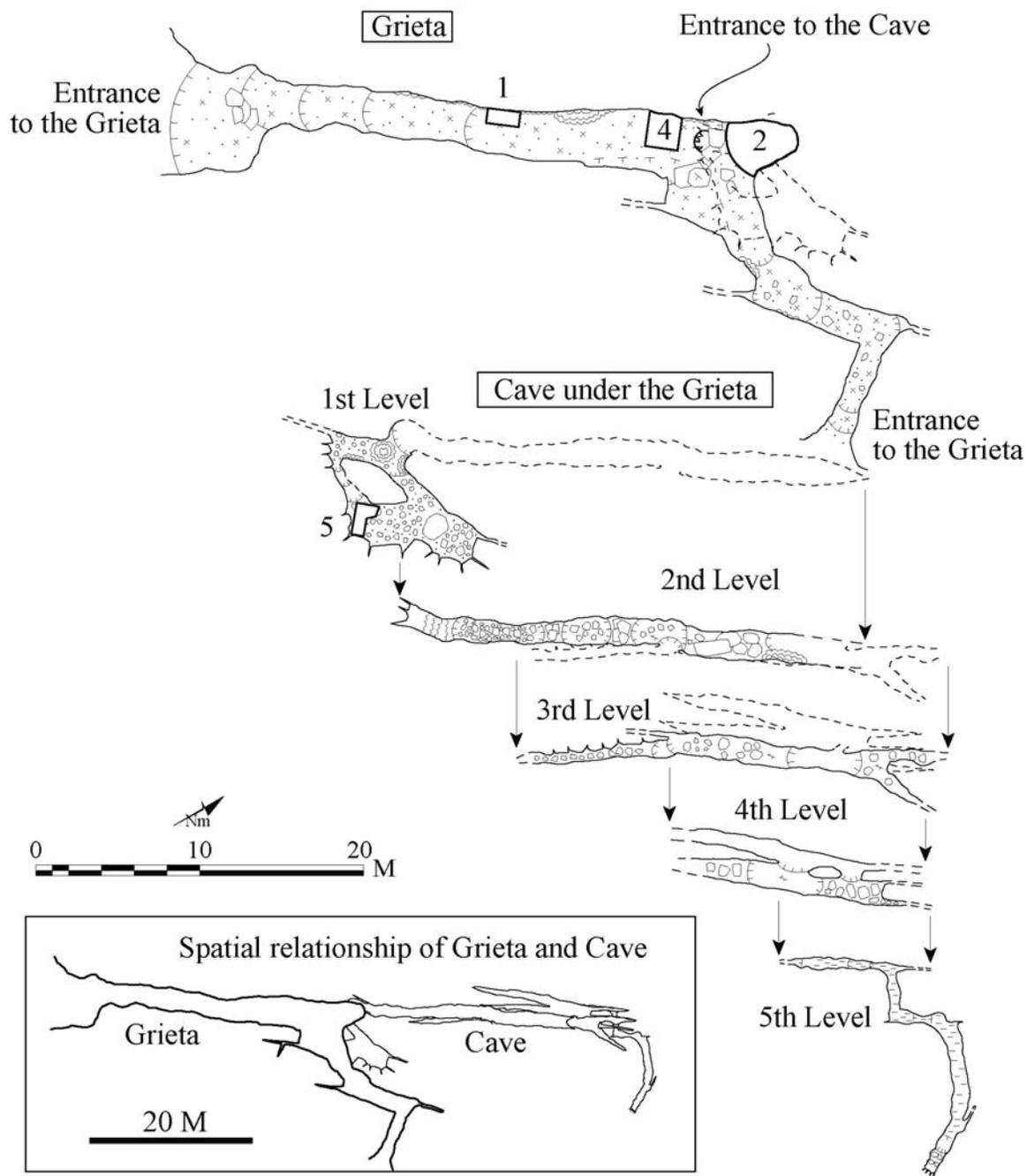


Figure 6.53. Map of Grieta Rincón, showing the location of excavation units.

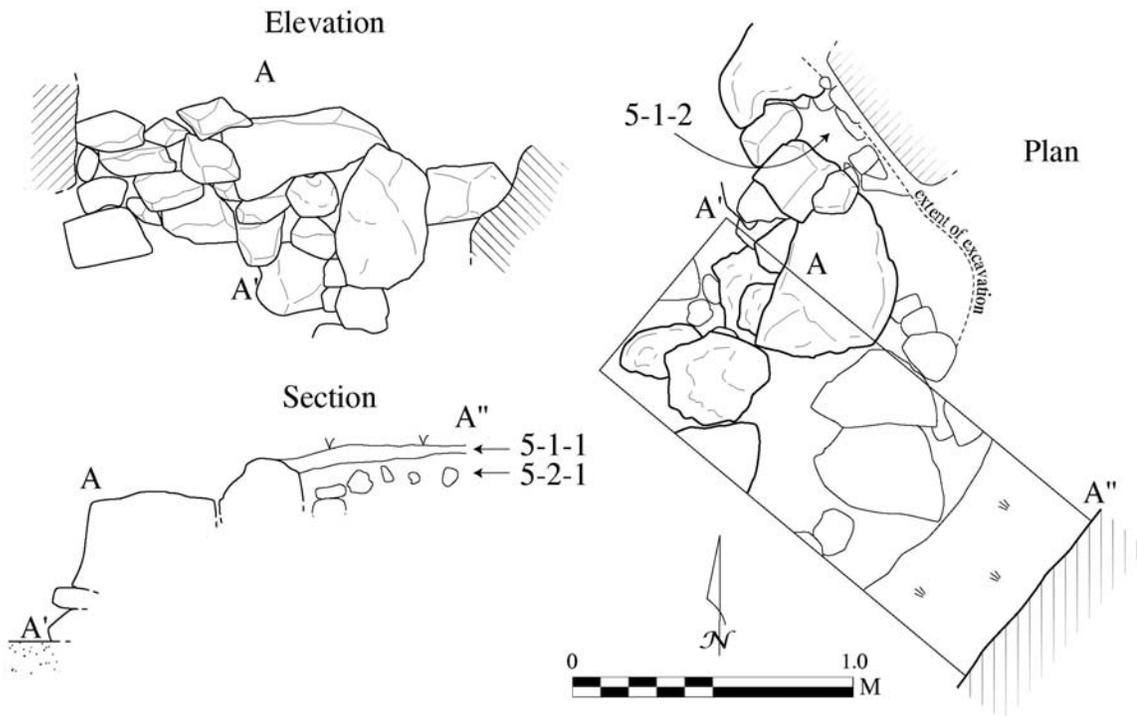


Figure 6.54. Section, elevation and plan of the platform, after excavation of Unit 5, inside the Cave, Grieta Rincón.

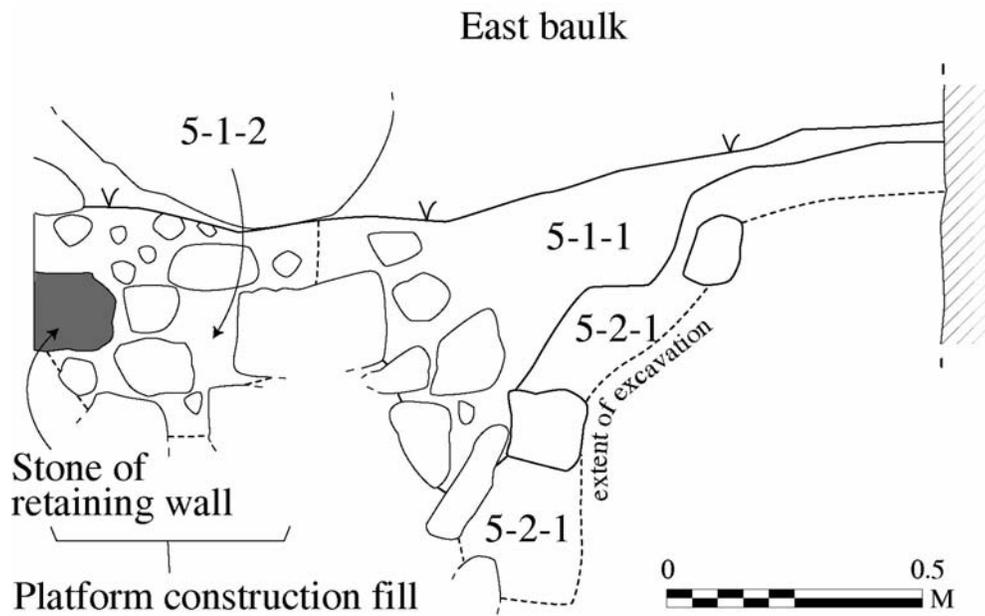


Figure 6.55. East profile of Unit 5, inside the Cave, Grieta Rincón.

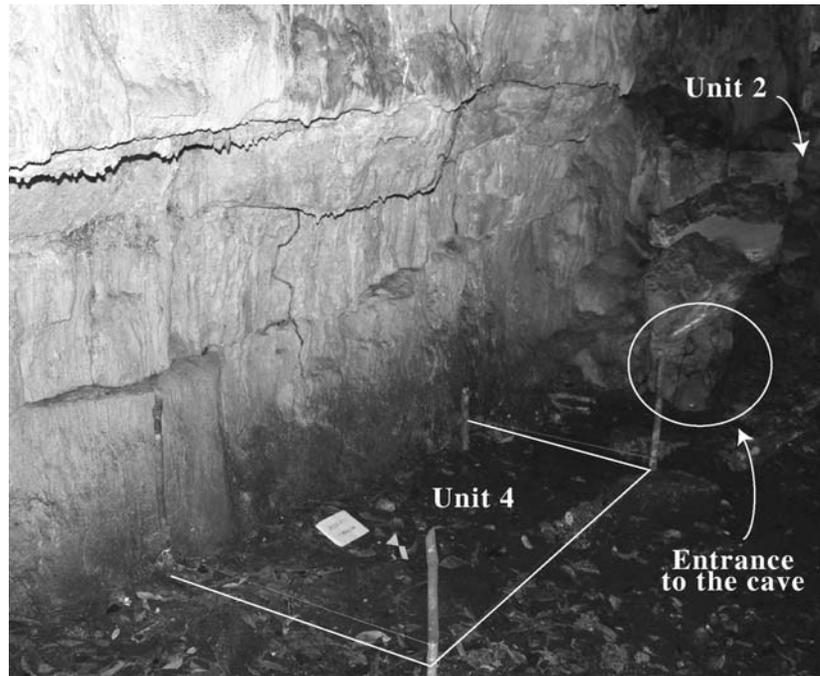


Figure 6.56. Photo of Units 2 and 4 in relation to the cave entrance, Grieta Rincón.

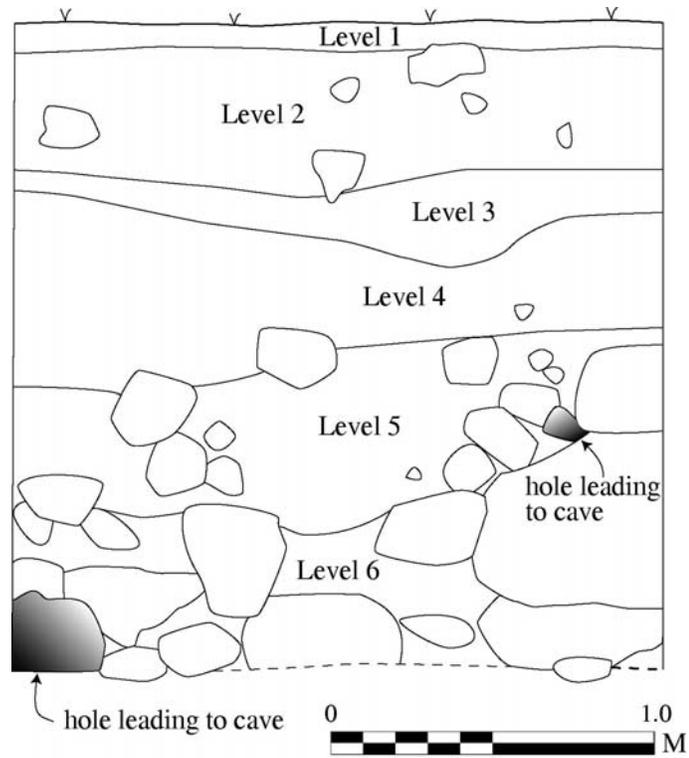
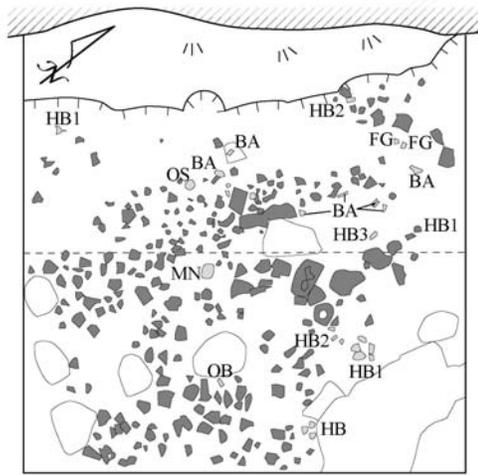
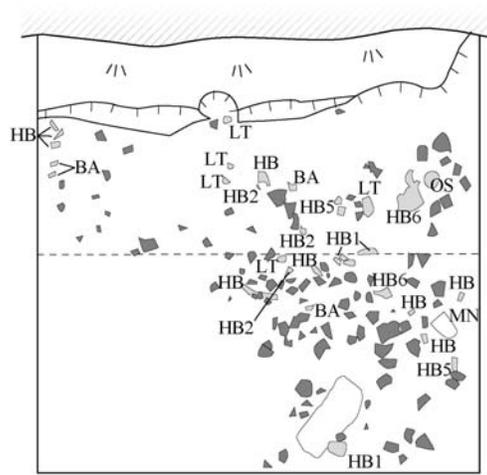


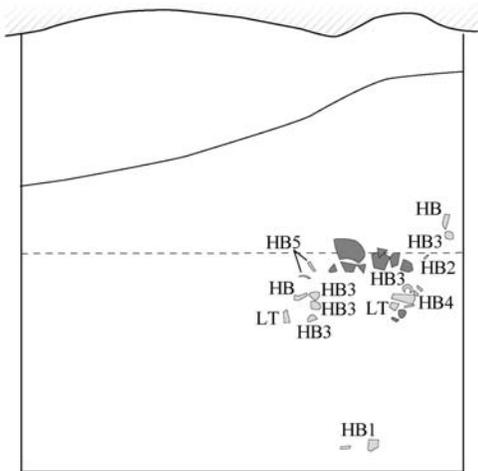
Figure 6.57. Profile of the north baulk, Unit 4, *grieta* portion of Grieta Rincón.



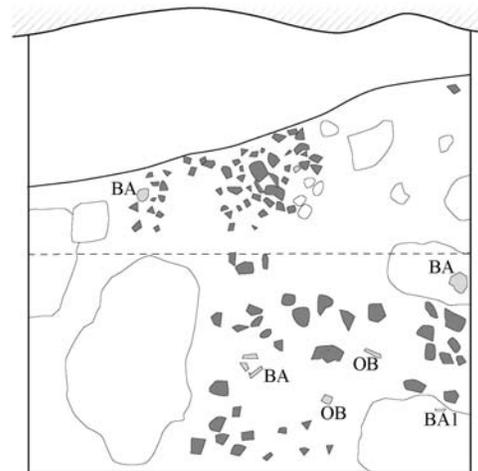
Lot AG30B-4-2-5 (upper) & 4-2-9 (bottom)



Lot AG30B-4-2-6 (upper) & 4-2-10 (upper)



Lot AG30B-4-2-11



Lot AG30B-4-2-13 & 4-2-16



Figure 6.58. Plans of select lots in Unit 4, Outside the cave in Grieta Rincón., showing the high concentration of sherds and other artifacts. (Sherds are shown in darkest shapes, other artifacts and bone material are in lighter color. OB=obsidian, OS=stone artifact, FG=figurine, MN=mano, BA=animal bone, BA1=needle, HB=unidentified human bone, HB1=cranial, HB2=tooth, HB3=vertebra, HB4=long bone, HB5=rib, HB6=scapula).

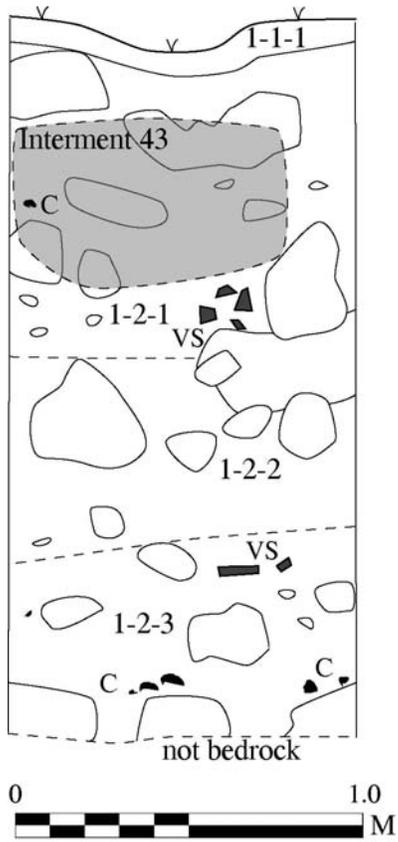


Figure 6.59. Profile of north baulk of Unit 1, Outside the cave in Grieta Rincón.

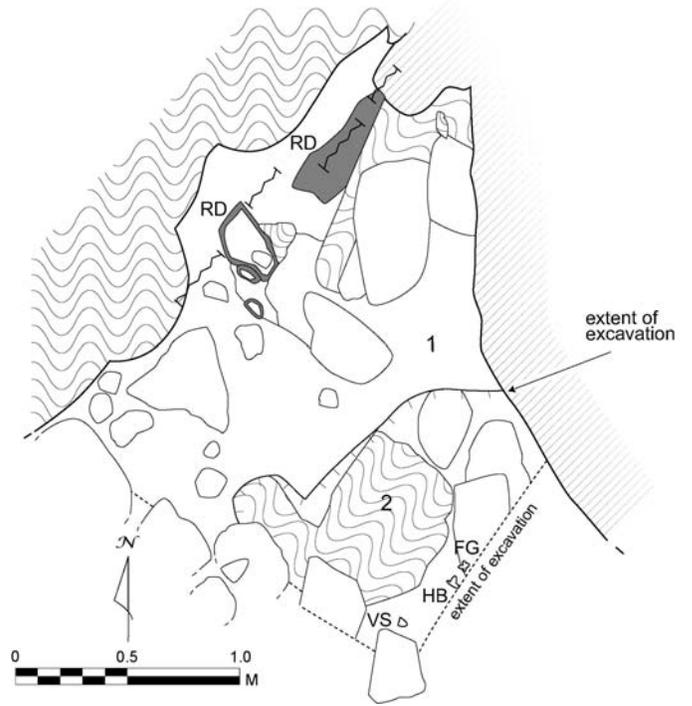


Figure 6.60. Plan of Unit 2, Outside the cave in Grieta Rincón. (1= calcified soil, 2=flowstone reached after removing 1. RD=rimestone dam. VS=sherd, HB= human vertebrae, FG=figurine fragment).

Table 6.3. AMS dates from the Grieta Principal and Grieta Rincón. AMS dating was conducted by the NSF - Arizona Accelerator Mass Spectrometry (AMS) Laboratory. OxCal version 4.0 was used for calibration (Bronk Ramsey 2001; Bronk Ramsey 1995) and IntCal04 was used for the calibration curve (Reimer, et al. 2004). Note the results for sample AA71119 shows that the sample was contaminated and should be disregarded.

Reference No.	Sample No.	Lot No.	Context	Conventional Radiocarbon Age	2-sigma Calibrated Date (95.4%)
AA68566	B10	AG31A-13-3-11	Charcoal and ash lens between lots 13-3-8 and 13-3-6	1618+/-30 BP	AD 383 - 539
AA68567	B15	AG30B-4-2-1	Charcoal in soil sample "E" in north unit baulk, 135 - 150 cm below surface	1576+/-27 BP	AD 420 - 545
AA68568	B17	AG31B-11-1-2	Carbon lens 3.5 cm below datum #1006, in the west part of the unit	1372+/-43 BP	AD 592 - 769
AA68569	B27	AG31B-11-1-3	Carbon sample II, 53 cm below datum #1006 in unit extension	1301+/-41 BP	AD 648 - 809
AA68570	B34	AG31B-14-2-2	Charcoal, southeast part of unit, 422 cm below datum #185	1894+/-42 BP	AD 25 - 230
AA68571	B17	AG31D-1-6-2	Charcoal associated with Interment #52, around ribs and long bones	1350+/-27 BP	AD 640 - 766
AA71118	B14	AG31B-6-1-2	Charcoal associated with Interment #24	1157+/-36 BP	AD 777 - 973
AA71119	B7	AG31B-6-6-3	Carbon lens with single human rib atop, associated with Wall 1	6289+/-41 BP	5368 - 5081 BC
AA71120	B7	AG31A-11-2-5	Carbon lens, southwest corner of unit	1441+/-38 BP	AD 555 - 658

CHAPTER 7

ANALYSIS

This chapter presents the archaeological material remains recovered from the *grietas*, and are discussed by material type, namely ceramics, lithics, and bone. In general, artifact classification and laboratory analysis followed procedures established by the Aguateca Archaeological Project, and are described below for each artifact class. Gordon Willey's (1972) artifact categories from his report on Altar de Sacrificios also guided the classification I employed. Intersite comparisons with cave sites are emphasized, although surface sites are also referenced.

Ceramics

As is the case in caves and at surface sites, ceramic sherds comprised the most numerous artifact type in the Aguateca *grieta* assemblage. Ceramic analysis consisted of classifying the sherds based on a type-variety classificatory system, whose foundations lay in the Lowland Maya type-variety system (Gifford 1960; Gifford 1976; Smith 1955; Smith and Gifford 1966; Smith, et al. 1960). Specifically, Antonia Foias' (1996) ceramic analysis of the Petexbatun ceramics was predominately used as the primary reference source. Following ceramic analysis methods developed by the Aguateca Archaeological Project (Foias, et al. 1991), ceramics were classified by group, ware, and type, but no variety designations were included (**Table 7.1**). I analyzed the *grieta* ceramic assemblage following the same methods because classification at the type level was sufficient for the purposes of my study. In addition to Foias' study, other sources were referenced, such as the ceramic analyses from Seibal (Sabloff 1975), Uaxactun (Smith 1955), Altar de Sacrificios (Adams 1971), and Barton Ramie (Gifford 1976) (see **Table 7.2** for ceramic chronology). Because the primary classificatory criteria in type-variety analysis consist of surface treatment of the vessel, the excellent state of preservation of the *grieta* specimens, that is the slips and paint on sherds, clearly facilitate analysis and allowed for more secure type-variety

designations than less eroded ones. However, this also presented a problem at times with some sherds that did not seem to fit into any known ceramic types from Aguateca or the greater Petexbatun area. These sherds are discussed further in **Appendix B**.

Related to the issue of classifying ceramics down to the type level, some sherds cannot be securely identified as one type or another due to a lack of particular vessel part that may or may not have decorative elements. For example, Encanto Striated jars have striations predominantly on their shoulders and body, so a rim sherd without the shoulder and body could either be an Encanto Striated or a Cambio Unslipped. Likewise, a Pantano Impressed vessel simply has stamped decorations on the jar shoulder that otherwise would be a Tinaja Red. The same relationship occurs for Subin Red and Chaquiste Impressed. For other groups, such as the Infierno Group, Chablekal Group, and the Andres Group, if no decorations are present on the sherd, then it was placed under the non-decorative type, that is, Infierno Black, Chablekal Gray, and Andres Red, respectively.

In addition to typological classification, vessel forms were identified. These data were collected to attempt to correlate vessel function with spatial distribution, and is discussed further in Chapter 8. Additional factors were examined including whether the interior side of the sherd is burned, presence of a “kill” hole, and flowstone coverage. Analysis was carried out by Jenny Guerra, Marielos Corado, and myself. Several archaeologists were consulted on some of the sherds whose typological identifications were uncertain, including Dr. Takeshi Inomata and Estela Pinto.

Vessels

A total of 30,858 sherds, which amounted to 348.5 kg, were collected during surface collections and excavations. This calculation includes whole and partial vessels. The identified ceramic types span a range of time periods from the Late Preclassic through the Late Classic

(**Table 7.1**). It should be noted that the frequencies in the tables are total counts of sherds, including rims, bases, and body fragments. Overall they reflect the types reported from the surface site of Aguateca but a closer examination of the frequencies reveals several noticeable differences (Foias 1996; Inomata 1995:542-548, Table 7.1). First of all, only a small fraction of the sherds from the *grietas* was eroded (2.18 % by weight, 4.0 % by frequency), compared to the surface site assemblage (19.7 % by weight and 38.5 % by frequency) (Inomata 1995:Table 7.1), indicating that the state of preservation of the *grieta* assemblage is superior. Secondly, although the frequencies of Late Preclassic ceramics are comparable (0.5 – 1.7 %), those of the Early Classic are much more numerous in the *grieta* assemblage (n = 539), as only 6 Early Classic sherds were collected from the surface site during Inomata's first phase of study at Aguateca (Inomata 1995:Table 7.1). The Late Preclassic sherds were recovered from stratigraphically secure, discrete deposits suggesting that they represent remains of activities during the Late Preclassic conducted by the local people, as evidence of occupation from this time period has been documented at Aguateca (Inomata 1997:338; Moscoso Moller 1991a; 1991b; Wolley 1992). The higher frequency of Early Classic material is significant because it suggests that the *grieta* was a ritually active space prior to the establishment of the Aguateca capital in the Late Classic. This pattern of finding ceramics in cave contexts that are rare or missing at the surface site has also been noted at Dos Pilas (Brady, et al. 1997a), in Quintana Roo (Rissolo 2001:344-345), and in the Sibun River Valley of Belize (Peterson 2006:111-112). Not surprisingly, ceramics dating to the Late Classic comprise an overwhelmingly large percentage in the *grieta* assemblage (over 90 % vs 60 – 80 % in the surface site assemblage, depending on the weight or frequency), which reflects the primary period of occupation at Aguateca.

Although cultural material was ubiquitous throughout the Grieta Principal and Grieta Rincón, its spatial distribution is not uniform (**Tables 7.3 - 7.5**). The highest frequency of

ceramics was recovered from the Two Owls Area, followed by Chill Hill, the Hidden Jar Area, and the Grieta area of Grieta Rincón. Very little was found in the Cave of Grieta Rincón. Certainly, these counts reflect the differences in the total area excavated of each investigated operation. When density of ceramics in relation to excavated area is considered, the combined unit (Units 2 and 5) in the Cave of Chill Hill is notably the highest with 39684 g, 1713 sherds in 1.4 m³ of excavated volume (28346g/m³, 1223.6 sherds/m³). Late Classic sherds were collected from almost all areas investigated, while that Early Classic material is not as commonly encountered, but in fact were found clustered in the Hidden Jar Area. Late Preclassic ceramics are even fewer, likewise concentrating in the Hidden Jar Area, primarily in the Outer Chamber and the altar-platform area at the entrance of the Inner Chamber.

The spatial distributions of vessel forms are shown in **Tables 7.6, 7.7, and 7.8**, each table representing Late Classic, Early Classic, and Late Preclassic sherds, respectively. The vessel forms represented are platter, bowl, vase, jar, drum, spouted vessel (pitcher), and incensario (incense burner). The forms are based on definitions outlined by Sabloff (1975:23). Platters include plates and dishes as defined by Sabloff but are combined into one category because the Classic period Maya apparently did not linguistically differentiate them (Houston, et al. 1989). Drums are often difficult to distinguish from jars but a close examination of the curvature of shoulder sherds and the angle of the rims can help in the identification (cf. Foias 1996:566, Figure 6.58). The typological identification of the drum specimen from Unit 8 in the Southern Entrance Area is not secure but it was classified as a Sierra Red type based on its waxy red slip though it is thin and slightly eroded. Moreover, its formal identification is not certain but closely resembles a specimen reported from Altar de Sacrificios (Adams 1971:Figure 46g). No drums are represented in the Early Classic assemblage only because all drums were classified as Saxche-Palmar Orange Polychromes of the Late Classic. Spouted vessels or pitchers are usually wide-mouthed jars with

a spout and often a whistling handle (cf. Foias 1996:Figure 6.38). Incensarios consist of incense burners that fall under the types Pedregal Modeled (Sabloff 1975:114-116), and smaller ones that are commonly referred to as candeleros (Foias 1996:Figure 6.15e; Smith 1955:Figures 67a3, 4).

Jars comprise an overwhelming majority of both Late and Early Classic ceramic assemblages, while vases are very few throughout the time periods. A small amount of incensarios were recovered (Brady and Peterson n.d.), but several burnt sherd interiors (n=36) leads me to conclude that many sherds were reused as incense burners as noted for Naj Tunich ceramics (Brady 1989). Moreover, there is ethnographic documentation that a jar was smashed intentionally to use the sherds to burn incense (Tedlock 1982). Half of the burnt sherds are jar forms (both unslipped and red-slipped jars), consistent with Tedlock's description. Other burnt vessel forms include Subin Red/Chaquiste Impressed bowls, Flor Cream and Cambio Unslipped platters, miniature Cambio Unslipped open forms, and a Pedregal Modeled incensario. In addition, broken pottery were brought into caves and left as offerings (Rissolo 2001:68).

Partial and Whole Vessels. The surface collections and excavations recovered a sizable number of partial and whole vessels (**Table 7.9, Figure 7.1**). I define partial vessels as having at least 20 % of the vessel represented because this roughly corresponds to the proportion of a complete basal portion of a jar or a complete upper portion of a jar rim, neck, and shoulder. Only one vessel, a miniature jar, was found entirely intact, while the other specimens consist of varying degrees of completeness. Of the 38 partial and whole vessels, 16 are bowls, 14 jars, 5 plates, and 3 vases. Six are miniature vessels, consisting of 4 Tinaja Red or Pantano Impressed jars and 2 Cambio Unslipped bowls. The majority are of Late Classic types with the exception of 1 Quintal Unslipped jar, 1 Triunfo Striated jar, and 1 Dos Arroyos Orange Polychrome plate. The Late Classic types include Encanto Unslipped, Tinaja Red, Pantano Impressed for the jars, Cambio Unslipped, Infierno Black, Saxche-Palmar Orange Polychrome, and an unidentified type with

white slip (code number 100038, see below) for the bowls, Saxche-Palmar Orange Polychrome for the plates, and Carmelita Incised, Saxche-Palmar Orange Polychrome, and an unidentified fluted, red and white slipped polychrome for the vases.

All 13 specimens from the Chill Hill Area were retrieved from Unit 1 in the open chamber, two of which have “kill” holes. The next highest concentration of partial vessels is the Hidden Jar Area. One was found in Unit 9 in the Outer Chamber, three from the altar-platform area at the entrance to the Inner Chamber, and seven from the Inner Chamber. As described in Chapter 6, a partial Pantano Impressed jar with a small, circular kill hole was discovered wedged behind a spalled part of the *grieta* wall, on top of which was a small st~~yl~~alagmite. In this vicinity, three other partial vessels were found. Sherds from a Dos Arroyos Orange Polychrome plate were found both in this area and in the niche by Wall 4. As well, two additional partial vessels were collected by Wall 4.

From the Southern Entrance Area, the only whole vessel, a miniature Pantano Impressed jar, was discovered in an enclosed alcove below the level of the chamber floor. A rim sherd and base sherd of a Saxche-Palmar Orange Polychrome bowl with a painted band of a WINIK-like glyph and pseudoglyphic elements were found in association with it, and quite likely additional sherds of this bowl remain in the alcove. Although few artifacts were collected from the narrow niche northeast of the entrance pit Pozo de Brad, three partial vessels were collected. An unusual red and white slipped globular vase with vertical flutings was found as well as a Carmelita Incised vase with an incised pseudoglyphic band (described in Chapter 5) and an Infierno Black bowl. To my surprise, two partial Saxche-Palmar Orange Polychrome bowls were collected from Unit 7 in the wet passage at the base of Nasal Passage (Passage 4). These may have been associated with the partially articulated individual interred there (Interment #34).

Despite the high frequency of artifacts recovered from the Two Owls Area, only four partial vessels were found. One Saxche-Palmar Orange Polychrome bowl with a pseudoglyphic band originated in the construction fill of Step 1 in the Two Owls Chamber. Another bowl of the same type, also with a pseudoglyphic band, had been smashed into small pieces in the middle of Passage 1. The remaining two vessels are miniatures found in Unit 14, in the area south of the passage. The unit in the Windy Valley revealed a partial vase of a Saxche-Palmar Orange Polychrome. Finally, three partial vessels were found in Unit 4 in the Grieta Rincón.

Miniature Vessels. A total of 28 miniature vessels are represented (**Table 7.10, Figure 7.2**). Almost a third ($n = 10$) are from the Two Owls Area and almost a fourth are from Unit 1 of the open chamber on Chill Hill. Over half of the specimens are of jar forms ($n = 15$), almost all of them being of the type Tinaja Red or Pantano Impressed. Bowls ($n = 8$) are also a dominant form for the miniature vessels, but there is more variation in the types including Cambio Unslipped, Subin Red/Chaquiste Impressed, Tinaja Red, and Infierno Black. Two candeleros are also represented in this sample, one of which resembles those reported by Foias (1996:439, Figure 6.15).

Miniature vessels are reported from many cave sites, including Actun Balam (Pendergast 1969b:35, 38-39, Fig.10j), Eduardo Quiroz Cave (Pendergast 1971:55), Actun Polbilche (Pendergast 1974:28), Balankanche (Andrews 1970:28, 30-31, Fig.54i-n), Naj Tunich (Brady 1989:218-227), and Actun Xooch (Rissolo 2001:325-326). They are also found in burials and caches (cf. Barrera Rivera, et al. 2001:70; Culbert 1993; Dillon, et al. 1985). Ethnographic accounts throughout Mesoamerica document miniature objects as offerings (Beals 1945:85; Christensen 1953:267; Parsons 1936:233; Sandstrom and Sandstrom 1986:67-68; Seler 1990-98:vol.4, 195). Specifically, miniature vessels are often associated with rain-making rituals (Brady 1989:226-227; Schaafsma and Taube 2006:256-259), and their presence in all parts of the

areas investigated suggest they represent remains of offerings, plausibly to rain deities, in these areas (see Chapter 8 for further discussion).

Overview of Ceramic Types. Late Preclassic ceramics were represented by Achiotes Unslipped and Sapote Striated jars and various forms of Sierra Red, Flor Cream, and Polvero Black typ. Early Classic types include Quintal Unslipped and Triunfo Striated jars in addition to Peten Gloss types such as Aguila Orange, Caribal Red, Balanza Black, Lucha Incised, Delirio Plano-relief, and Dos Arroyos Orange Polychrome.

The Delirio Plano-relief specimen is worth elaborating not only because it was recovered from a Late Classic context but also because of its rarity in Peten. Foias (1996:403-406) reports that only 8 sherds of this type were identified in her sample from Tamarindito, Arroyo de Piedra, and Dos Pilas, and other sites at which this type is found include Uaxactun (Smith 1955:Figure 22 l, j; Smith and Gifford 1966:157), Seibal (Sabloff 1975:112), Altar de Sacrificios (Adams 1971:51, Figures 32i, 33), and other sites in the Yucatan such as Mayapan (Smith 1971:141) and Becan (Ball 1977:101). At Tikal, numerous specimens of a similar and related type, Urita Gouged-incised, are found in burials, caches, and “problematic deposits” (Culbert 1993). Many of them appear very similar in decorative design (and possibly surface finish technique) to the *grieta* specimen. The sherds are of a single vessel, most of which were found in the central activity area of Passage 1 in the Two Owls Area. Five basal sherds that fit together were located at the northern end of lot AG31B-11-1-3 adjacent to the northern section of the rock alignment, while a small sherd was found separate from this area in Unit 14 and which refits a sherd from the passage. The very fine, hard paste is light brown to white, with a thin black core. Though no inclusions can be seen, it appears that the paste is tempered with ash. The vessel surface including the base exterior is covered with an unevenly applied, thin dark brown to black slip. The exterior surface treatment varies throughout the vessel. At about 3.5 cm below the rim,

there are two sets of two paralleling incised lines that encircle the vessel. In one section of the vessel, a carved panel appears in place of the lower set of lines. The largest iconographic image occurs on the middle part of the body, depicting a skeletal animal (Karl Taube, personal communication, 2006) with water symbols. A much smaller carved panel occurs along the basal edge of the vessel. These panels do not extend around the entire perimeter of the vessel as they taper in outline. Aside from these carved panels, throughout the body are 6 rows of circular dots (5 – 8 mm in diameter) that either protrude out or dimple inward.

Volcanic ash paste is uncommon during the Early Classic particularly in the Peten and Petexbatun, and as Foias suggests, this vessel may have been imported into the Petexbatun region (Foias 1996:404). This imported specimen deposited in a Late Classic context may suggest elite participation in the ritual activities involving the deposition of an important (possibly heirloom) object.

The Late Classic ceramics consist of a larger number of wares and types. Uaxactun Unslipped Ware consists of Cambio Unslipped and Encanto Striated jars, in addition to several varieties such as with slips or impressions. Very few plates and bowls of these types were recovered. Peten Gloss Ware includes the ceramic groups of Nanzal, Infierno, Tinaja, Azote, and Saxche-Palmar. The Tinaja Group certainly contains the most numerous sherds of these, as Tinaja Red and Pantano Impressed jars and Subin Red and Chaquiste Impressed bowls are abundant. Late Classic polychromes occur in higher frequency in the *grietas*, as 11 % of sherd count and 15 % of weight are polychromes in the *grietas* compared 3 % and 6 %, respectively, at the Aguateca surface site (Inomata 1995:Table 7.1).

Several types that were not previously reported from Aguateca were recovered in sizable quantity in the Grieta Principal. Six numeric codes (100037 – 10042) were created and added to the list of ceramic types under the Unnamed types. These “new” types were

characterized by having smudged interiors, often with white slips on the exteriors (see Appendix for detailed descriptions). Two distinct pastes were identified, a soft, fine orange paste with ash temper and a hard, fine light brown paste. The interior sides of the sherds are smudged brown. Some have no slip, some a white slip on the exteriors, and still others have incisions in addition to the white slip. Outflaring walled bowls and round-sided bowls are the most common but also vases and plates are present as well. The incisions occur on the exterior and are usually preslip incisions but occasionally postfire incisions are observed. It is likely that the counts of these types are lower because some of the sherds have probably been classified as Infierno Black if the slip had eroded away. In fact, Foias notes that some of the vessels classified as Infierno Black are similar to the stuccoed vessels found in burials and caves (Foias 1996:537). Moreover, in the type description, Foias (1996:533) mentions that the black surfaces typical of Infierno Black were smudged, or were the result of reducing the atmosphere so the vessels do not fully oxidize. It may be that these stuccoed vessels are the same type as these new types found in the *Aguateca grieta*. At least two partial vessels, one bowl and one cylindrical vase both with nubbin feet, were found in Cueva de Sangre near Dos Pilas, as Dr. Jim Brady graciously showed me the specimens. Brady postulates that they were probably painted and indeed some *grieta* specimens do have possible remnants of paint.

Key Temporal Markers. As one of the concerns of the Aguateca Archaeological Project was to examine social processes within Aguateca's history, ceramics that may represent temporal or socio-cultural changes within the Late Classic were examined. Based on his earlier investigations, Inomata has postulated that particular ceramic modes that span the Late Classic could be used to distinguish the two phases of occupation at Aguateca (Inomata 1997:341). These concern Saxche-Palmar Orange Polychrome plates and bowls, SubinRed/Chaquiste Impressed bowls, and Encanto Striated jars. For the early Nacimiento phase, or Tepeu 1 phase (ca. AD 600 –

700), polychrome plates have more rounded bases with basal flanges, polychrome bowls commonly have more rounded walls, Chaquiste Impressed bowls tend to have non-stamped impressions, Subin/Chaquiste bowls have a more protruding ridge, and Encanto Striated jars have finer striation. The late Nacimiento phase, or Tepeu 2 phase (ca. AD 700 – 800), is characterized by flat-based polychrome plates and bowls, Chaquiste Impressed bowls tend to have stamped decorations on a flatter ridge, and deeper and well defined striations on jars. The *grieta* assemblage and contexts were not able to provide further data to substantiate this claim due to the few instances in which an abundance of Saxche-Palmar Polychrome plate rims occurred in stratigraphically secure contexts. However, vessels and their profiles that are reported from dated, closed contexts at sites in the Petexbatun were examined by Markus Eberl, Jeff Buechler, and the author, and it appears that there is a particularly strong correlation between plates with rounded bases and a Tepeu 1 date.

In the *grietas*, there is only one unit that meets several criteria needed to examine possible temporal changes through polychrome plates, including well-defined stratigraphy and a high frequency of polychrome plate rim sherds. This is Unit 1 of Chill Hill. A radiocarbon date of calAD 640 – 766 (2-sigma, AA68571) from lot 1-6-2 associated with Interment #52 provides a temporal framework with which to work. Only one polychrome plate was associated with this interment; it has a slightly rounded basal break suggesting it is a Tepeu 1-2 transitional specimen. This interpretation accords well with the radiocarbon date. In this same level, level 6, the majority of the polychrome plates are of the Tepeu 1 form with some transitional forms. In addition, two plates with flat bases are included in this assemblage, pointing to a Tepeu 2 date for lot 1-6-1. Sherds of Chablekal Gray are also found in lot 1-6-1, which suggest a later date, as noted below. Therefore, if level 6 represents some of the earlier use of Chill Hill (the only earlier is lot 1-7-1), then this area was used primarily during the second phase of Tepeu 2, ca. AD 760 – 810.

Chablekal Gray is a ceramic group that appears at Aguateca during the late Nacimiento phase, ca. AD 760 – 810, which coincides with the capture of Ruler 4 and a shift to using Aguateca as the primary capital (Foias 1996:428-432). Thus the presence of Chablekal Gray indicates use during this later phase before Aguateca was rapidly abandoned around AD 810. The Andres Group and the Zopilote Smudged type also may point to the same temporal phase (Foias 1996:429, 487, 619). These types decrease in frequency and are replaced by other types (e.g., Tres Naciones Fine Gray) during the Terminal Classic (ca. AD 730 – 950). The spatial distribution of these types are shown in **Tables 7.11, 7.12, and 7.13**.

Reworked Sherds

Some ceramic sherds were reworked and reused with newly acquired functions. Twelve reworked sherds were recovered from the Grieta Principal and Grieta Rincón (**Table 7.14**), consisting of 5 perforated disks, 2 disks without perforations, 1 perforated, irregularly shaped sherd, 3 notched sherds, and 1 mirror back fragment.

Five reworked sherd disks with a central perforation were found. The hole in four of them was biconically drilled and it is likely that the last specimen was also biconically drilled though the weathered nature of the artifact makes it difficult to be sure (**Figure 7.3**). Three of the five perforated disks are complete. One of the perforated sherds has a single notch. Three were Tinaja Red or Pantano Impressed jar sherds, one was a Saxche-Palmar Polychrome sherd, and the other a Flor Cream sherd. The *grieta* specimens range from 2.6 to 6.7 cm in diameter, with holes 0.5 to 0.9 cm in diameter. The three larger ones are comparable in size to those reported from Naj Tunich, whose diameters range from 5.0 to 7.3 cm with a hole diameter of 0.9 to 1.0 cm (Brady 1989:264). One of the perforated disks from the *grieta* fits within the large size (6.5 – 10.3 cm diameter) and four within the small size (2.4 – 5.7 cm diameter), as defined by Willey at Altar de Sacrificios, but the hole diameters are considerably smaller than that reported by Willey (1.5 – 2.0

cm hole size for the small disks, 2.0 – 7.0 for the large disks) (Willey 1972:80-81). A possible function of the perforated disks is use as spindle whorls (Willey 1972:81-82). Other examples of reworked sherd disks with a central perforation are reported from the following sites: 3 from Naj Tunich (Brady 1989:263, Fig.6.4b,c), 13 from Actun Balam (Pendergast 1969b:40), 3 from Loltún (González Licón 1986:96; Thompson 1897:Plate 7), 1 from Cenote X-Coton at Mayapan (Smith 1953:70). A distribution of their occurrences at surface sites is summarized by Willey (1972:81-82) and Willey et al (1965:405).

Two disks with no perforations were recovered: one is complete, the other represents about 1/5 of a disk. They were both basal sherds of Tinaja Red or Pantano Impressed jars. They both fit under the large size (6.5 – 13.5 cm diameter) as defined by Willey at Altar de Sacrificios (Willey 1972:78-79). Possible uses include lids for narrow-mouthed vessels (Blom 1954:126; Willey 1972:79). Similar examples of circular ceramic disks occurs at the following sites: 1 from Naj Tunich (Brady 1989:265-266, Fig.6.5a), 8 from Actun Balam (Pendergast 1969b:40), 2 from Eduardo Quiroz (Pendergast 1971:76), Uchentzub Cave (Schmidt 1977:110), 6 from Lotún (González Licón 1986:96; Thompson 1897:Plate 7), Gruta de Chac (Andrews 1965:18), Cieneguilla Cave (Blom 1954:126), Santa Marta Cave (García-Bárcena and Santamaría 1982:149). Brady mentions four disks found in a large offering that included 16 or 17 human bodies (Brady 1989:266) at Tikal (Laporte and Fialko 1987:133-134). A distribution of their occurrences at surface sites is summarized by Willey (1972:80) and Willey et al (1965:406-407).

The one perforated sherd that is irregularly shaped was a Subin Red bowl sherd, identified by the characteristic ridge on the upper part of the vessel body (**Figure 7.3a**). An eroded brown slip can be seen on the interior side of the sherd, and no slip is observed on the exterior. It has a biconically drilled perforation. Two of the broken edges may have been smoothed, but one of the sides was clearly not grounded and smoothed. Its non-discoid shape

suggests a function different from the abovementioned disks, possibly as a pendant. If the intended finished product was a pendant, production of the object was not completed. Similarly reworked sherds, with an off-centered perforation non-discoidal in form, are reported from Naj Tunich (Brady 1989:261-262; Fig. 6.3c, d), Cenote Ch'en Mul at Mayapan (Proskouriakoff 1962:Fig.49a-c); Uaxactun (Kidder 1947:69, Fig.58a-c), Piedras Negras (Coe 1959:70, Fig.59c), Barton Ramie (Willey, et al. 1965:409), Altar de Sacrificios (Willey 1972:82, Fig.66f).

Three specimens have notches and are all complete (**Figure 7.4**). Two are circular and only have a single notch, while the other is larger and rectangular in form. The notches on the former are slight and were identified based on the fracture pattern. The circular ones were originally a Saxche-Palmar Orange Polychrome and a Tinaja Red or Pantano Impressed jar, the rectangular specimen possibly an Early Classic Peten Gloss ware. The rectangular notched sherd could be a net weight (cf. Willey 1972:82) but the circular forms are distinct from the net weights. Their function is unknown.

Two disks, one complete and one partial, do not have perforations (**Figure 7.5b, c**). They are both made of Tinaja Red or Pantano Impressed jar sherds. The complete specimen consists of the concave base of the jar, and though its edges are not well smoothed, its overall discoid form suggests that it is unlikely that the sherd resulted from natural breakage. Likely uses include lids. They do not show signs of burning on them, indicating that they were not used as improvised incense burners.

One specimen, a sherd of a Saxche-Palmar Orange Polychrome probably a flat-based open vessel, had been reworked with more care than the others mentioned above (**Figure 7.5**). The beveled edge, its flat surface, and its diameter (12 cm) suggest that the sherd had been reworked into a mirror backing. The edge, which probably coincides with the juncture between the base and wall, retains some slip as do both the interior and exterior surfaces. Around the outer

edge of one side of the sherd (probably the side on which the pyrite pieces would have been adhered), the surface had been ground slightly at an angle exposing the paste; presumably the pyrite mosaic pieces would only have been adhered to the central flat surface. Similar specimens of mirror backs are reported from the surface site at Aguateca (Valdés, et al. 2000) as well as others such as Altar de Sacrificios (Willey 1972:141-142), Barton Ramie (Willey, et al. 1965:490-492, Fig.295i), San Jose (Thompson 1939:176-178, Plate 28b), Altun Ha (Pendergast 1969a), Baking Pot (Bullard and Bullard 1965; Ricketson 1929:17), Piedras Negras (Coe 1959:42-43, Fig.42f), and Palenque (Ruz Lhuillier 1958). It is noteworthy that many of the mirrors and mirror backs (many of which are made of slate) that have been reported throughout Mesoamerica have been found in caches and burials (Kidder, et al. 1946:126-132; Smith and Kidder 1951:44-50; Willey 1972:141-142).

Figurines

The clay figurines were examined by the author and subsequently analyzed by Dr. Daniela Triadan in 2006. I used the classification system developed by the Aguateca Archaeological Project, particularly examining functions and depicted motif of each specimen (**Tables 7.15 - 7.19**). Functions include figurines that are not flutes or whistles, flutes, whistles with a simple or complex resonators, ceramic hollow heads, ceramic molds for figures, whistles, and flutes, and bells and clappers. Motifs of forms were largely divided between anthropomorphic and zoomorphic shapes.

Anthropomorphic figurines consisted of males with varying masks, warriors, females elaborately attired, females holding a child, and ball players. Zoomorphic themes consist of birds, owls, monkeys, and bats. Other motifs include supernaturals such as “grotesque” heads and “fat man.” The description presented here is based on my observations, though some of the figurines

were identified by Christina Halperin, a colleague at the University of California, Riverside, who is studying figurines from the site of Motul de San Jose, Peten, Guatemala.

The figurines recovered from the Aguateca *grietas* were generally well preserved. A total of 208 whole or fragments of figurines were recovered, of which six are complete or almost complete. Remnants of paint adhere to 31 specimens. Blue pigment is the most common, but red paint is also present on a couple of specimens. Daniela Triadan (personal communication, 2005) noted the *grieta* sample included mold-made figurines that closely resembled those collected from the surface site.

All figurines were recovered from Late Classic contexts and were recovered from all investigated areas of the Grieta Principal and from the *grieta* portion (outside of the cave) of Grieta Rincón (**Table 7.20**). Chill Hill contained over half of the figurines (54.3 %), and the Two Owls Area follows (30.8 %). These areas are two of the primary areas with intensive use during the Late Classic. However, one of the other areas of use during the Late Classic, namely the Hidden Jar Area, has a low frequency of figurines (4.8 %), which is comparable to the other areas of the Grieta Principal and in the *grieta* portion of Grieta Rincón. No figurines were recovered from the cave at Grieta Rincón.

About a quarter of the figurines are musical instruments (flutes, whistles) (**Figures 7.6 - 7.8, 7.12**) (28.3 %) and 4.4 % are figurines that are not musical instruments (**Table 7.18**). Almost half of the specimens (42.3 %) could not be clearly discerned whether they were musical instruments or not due to the fragmentary nature of the artifacts. A large portion of the figurines is anthropomorphic (26.0 %), while zoomorphic forms comprise a smaller fraction (8.2 %), and supernaturals are even fewer (3.8 %) (**Table 7.19**). Over half of the figurines could not be identified as to their form (62.0 %). No molds were found in the *grieta*.

Compared to the frequency of figurines recovered from the Aguateca site center by Inomata (Inomata 1995: Table 7.12a), the *grietas* contained a higher percentage of musical instruments (18.3 % in the *grietas* versus 15.77 % from the surface site) while the frequency of figurines is much lower (3.4 % in the *grietas* versus 37.85 % from the surface site) (**Table 7.18**). The frequency of hollow head figurines and the number of unidentified figurine fragments paralleled that reported from the surface site.

With regard to the form or motif of the figurines, figurines depicting females are present in a higher percentage, almost twice the number, in the *grietas* (5.3 %) than at the surface site (2.84 %) (Inomata 1995: Table 7.12b). The number of figurines representing males in the *grieta* assemblage is almost half (4.8 %) that reported from the surface site (8.85 %). The frequency of figurines portraying warriors was about the same in the *grieta* (7.2 %) and at the surface site (8.83 %). Zoomorphic figurines are higher in the *grietas* (8.2 %) than at the surface site (5.99 %).

The spatial distribution of musical instruments merits attention. It is likely that whistles are underrepresented because fragments whose identification was unclear were classified as figurines/whistles, and Triadan (personal communication, 2006) notes that most Late Classic figurines were probably whistles. Most whistles recovered depicted anthropomorphic or zoomorphic figures, with two stops in the back and the mouthpiece at the feet of the figure. Only a few fragments of whistles with multiple resonators were found. Flutes were mostly comprised of a narrow tube, but at least one double-chambered flute fragment was also identified. **Table 7.21** shows that an overwhelmingly large portion of the ceramic musical instruments were recovered from Chill Hill, in particular inside the small cave and the open space in Chamber 5. A high frequency of musical instruments (51 whole or fragmentary ceramic whistles, over 300 sherds from polychrome ceramic drums, bone rasp, possibly turtle shell drums) is reported from Cueva de Los Quetzales (Brady and Rodas 1995:21). From the large midden in the central plaza

of Lagartero, which is interpreted as a deposit related to ceremonial activities, a large assemblage of figurines was recovered (Ekholm 1979). The context of the deposit is particularly relevant to our discussion because a large hole was dug to receive the objects (Ekholm 1985:211), which may conceptually parallel a cave as a break in the earth's surface. Musical instruments, namely whistles, were represented, but in small numbers (Ekholm 1979:174). Figurines of females, who are depicted as "elegant, obviously elite or priestly individuals in highly stylized and presumably meaningful formal poses" (Ekholm 1979:174) comprise about 60 % of the Lagartero figurine assemblage.

Six specimens show evidence of burning, and one additional whistle may have been burned on the interior after breakage. Four of the six burned specimens are the faces of anthropomorphic figurines, while the other two are a shield of a warrior figurine and a three-chambered-whistle. With so few samples, it is hard to say if the facial portion of the figurines were deliberately burned as if in an act of termination such that observed on stelae.

Lithics

Chipped Stone: Chert

Basic classifications outlined by Willey (1972:157-181) are used for the analysis of chert artifacts (**Table 7.22**). It should be noted that the results presented here are based on the author's preliminary observations. Separately, Dr. Kazuo Aoyama has conducted analysis of the *grieta* assemblage as part of the lithic analysis for the Aguateca Archaeological Project (Aoyama 2004; 2005). The spatial distribution of the chert artifacts is shown in **Table 7.24**.

Bifacially worked tools were commonly found in the *grietas* (for list of cave site distribution, see Brady 2005:120, Note 6). Projectile points and knives are thin and finely worked bifacial tools. Two complete specimens of chert points were recovered from Passage 1 of the Two Owls Area (**Figure 7.9a-b**). They are of the narrow tapered stem, long blade type. They measure

5.4 and 6.2 cm in length, 1.9 and 2.6 cm in width, 0.9 cm in thickness (for the latter), and width of the stem 0.7 and 1.3 cm, respectively. A medial fragment of a possibly laurel-leaf shaped knife was also found from the open chamber of Chill Hill (**Figure 7.9c**). The widest point of the knife measures 3.9 cm. Several additional fragments of knives or points were collected from a variety of contexts (**Figure 7.9d-g**). Despite the local availability of chert, because their production requires the skill of a specialist and may have been intraregional trade items, Brady (2005:120-121) suggests that these chert artifacts may represent valuable offerings.

The larger and more robust bifacial tools, commonly called choppers, can be divided into general utility bifaces and chopper-pounders. The general utility bifaces, also called choppers-general utility form, are somewhat larger and have a sharper edge than the chopper-pounders. They are generally about 9 – 11 cm long and 5 – 7 cm wide, though the elongated type is much narrower (3.3 cm wide). Six complete specimens and three fragments of general utility bifaces were recovered, and represent several distinct forms including an elongated form, an asymmetrical form, an oval form, and one thin and one bulkier tear-shaped bifaces (**Figure 7.10**). All are from Late Classic contexts except for one from lot AG31E-1-4-3, which may be from an Early Classic stratum in the Windy Valley.

Chopper-pounders, which are generally smaller than the general utility choppers, are characterized by their blunted blade edges. Six complete chopper-pounders were identified (**Figures 7.11**). They are generally thicker than the general utility bifaces, and they are often made to fit comfortably in the hand (**Figure 7.11c**). Their dimensions fall within the range of 6 – 9 cm long and 5 – 6.5 cm wide.

One possible drill was identified. Eight chert cores were collected, of which two are entirely exhausted. Six scrapers were identified, which are defined as usually having edge chipping and a plano-convex cross-section suggestive of scraping (Willey 1972:177). It is likely

that there are additional flakes that can be categorized as scrapers but were not identified by the author's cursory examination. Additionally, there are numerous retouched flakes, mostly of a small size (less than 5 cm), that show varying degrees of retouched edges. Few pieces bear cortex, but the majority are secondary and tertiary flakes. These are counted as unidentified flakes, which numbered 251 specimens. No particular patterning could be discerned with the spatial distribution of the chert material. The relatively large quantity of small flakes suggests that expedient tools were preferably used in the activities conducted in the *grieta*, perhaps to lighten the load of the ritual practitioners. Finally, it is notable that no lithics that could be classified as eccentrics were recovered.

One unidentified limestone object was recovered from inside the cave on Chill Hill (#101 AG31D-2-1-1) (**Figure 7.12**). It is spoon-like in form, measuring 12.2 cm in length, 2.7 cm in width, and 2.1 cm in thickness, and weighing 71 g. The rough surface makes it difficult to ascertain whether it had been worked. The gray to dark gray color of the object suggests that it was probably exposed to fire. Upon closer observation, a portion of one edge does appear chipped, but the function of the artifact remains unclear.

Chipped Stone: Obsidian

A total of 115 obsidian artifacts were recovered. The majority of these artifacts consists of prismatic blade fragments (n=101) (**Figure 7.14**), while a small frequency of flakes (n=8) and prismatic blade cores (n=4) (**Figure 7.15**) are present as well (**Table 7.23**). Two reworked blades were identified. One blade had been reworked into a leaf-shaped point, and the other is a side-notched blade fragment (**Figure 7.13**). **Table 7.25** shows the spatial distribution of obsidian artifacts.

Prismatic blades are common artifacts from cave sites and are reported from: Naj Tunich (78) (Brady 1989:326); caves in the Río Candelaria system (10) (Carot 1989:116; Pope

and Sibberensen 1981:20); Eduardo Quiroz Cave (21) (Pendergast 1971); Actun Balam (16) (Pendergast 1969b); Actun Polbilche (2) (Pendergast 1974); Actun Uayazba Kab (104) (Ferguson and Gibbs 1999; Griffith 1998); Actun Tunichil Muknal (2) (Awe, et al. 2005; Moyes 2001); Actun Yaxteel Ahau (13) (Halperin 2000; Mirro and Halperin 2000; Mirro and Awe 1999); Uayak Na Rockshelter (1) (Awe, et al. 1998); caves in the Sibun Valley including Glenwood Cave (1), Ek' Waynal (1), Pine Torch Rockshelter (1), Actun Chanona (2), K'in Rockshelter (1), and Arch Cave (1) (Peterson 2006:Table 4.1); Actun Spukil (Mercer 1975(1896):30); Cenote X-Coton (Smith 1953:70); Ch'en Mul and Telchaquillo (Smith 1954); Balankanche (Andrews 1970:52, Fig.55e); and San Pablo Cave (14) (Lee and Hayden 1988:60-61). Their ritual significance may be attested to by their frequent occurrences in caches and burials (Willey 1972:217). Blades are generally thought to have been used as bloodletting implements (Brady 1989:327; Brady and Stone 1986; MacLeod and Puleston 1979:72, 75; Thompson 1975:xix), and in fact, based on microwear analysis, Kazuo Aoyama (1999:131; 2001) has identified blades that may have been used in autosacrificial activities.

Inomata notes that points were possibly used as arrow points for the bow and arrow (Inomata 1995:562-563). The notched *grieta* specimen was found on the surface of the centrally located large limestone slab in the Hidden Jar Chamber. Thus it is possible that it may date to the later part of the Late Classic, representative of a weapon from the battle that ensued at the end of Aguateca's history. However, obsidian points are not uncommon in caves so their uses in ritual activities should not be ruled out. One barbed project point made of Pachuca obsidian is reported from Tiger Cave (Peterson 2006:137). It is interesting to note that cores are often recovered from not only caves (Joyce 1929:446; Joyce, et al. 1928:344) but also from other ritual deposits such as caches (Willey 1972:212-213).

All the obsidian artifacts are from Late Classic contexts except for one broken blade that was recovered from the platform construction fill in Grieta Rincón. This specimen was found in association with Late Preclassic and Early Classic unslipped sherds, which may suggest a transition date.

The artifacts were found in all areas of the Grieta Principal and Grieta Rincón. The highest frequency of obsidian occurs in the open chamber of Chill Hill (AG31D-1) and secondly in the cave on Chill Hill (AG31D-2 & 5). Without microwear analysis (cf. Aoyama 1995), the functions of these tools elude us, but we should be cautious in assuming that bloodletting was the primary function based on the ritual context of these obsidian blades. Having said that, contextual information combined with the artifact assemblage can help us formulate hypotheses. For example, despite the overall low frequency of archaeological material in Unit 12 of the Hidden Jar Chamber (AG31A-12), the 4th highest frequency of blade fragments (n=7) were uncovered here. Though speculative, the small niche and Wall 4 may have afforded a private and secluded space to conduct bloodletting with these blades.

Chipped Stone: Other

One peculiar object made of quartzite (?) was found in Unit 14 of the Two Owls Area (AG31B-14-2-1). Initially, it had been collected as part of the human remains, because its shape and size resembles a human adult molar (**Figure 7.16**). One of the surfaces is modified to give the appearance of the occlusal surface of a molar. It is approximately 1 cm wide and 1.7 cm long, and the occlusal surface of the “molar” measures approximately 1.1 x 0.9 cm. Its identification as an artifact had been insecure, but objects carved into the shape of teeth are reported from other sites such as Sacul (2 made of bone) (Laporte and Reyes 2004:290-291) and Baking Pot (Jaime Awe, personal communication, 2007). A human molar with white material embedded in the occlusal surface recovered from a burial at Moho Cay, Belize (Morris and McKillop 2007; McKillop,

personal communication, 2007) leads me to suggest that the stone “molar” may have functioned as an implant, as shown in **Figure 7.16a**.

Ground Stone: Manos and Metates

During the 2005 lab season, I analyzed the ground stone artifacts collected during fieldwork in 2005 and reanalyzed those from 2004. During the 2004 and 2005 lab seasons, the ground stone material recovered during the two field seasons were analyzed independently by Dr. Kazuo Aoyama (2004; 2005). The observations presented here are based on my own analysis. Analysis forms developed by the Aguateca Archaeological Project were used as guidelines for my analysis. Analysis consisted of taking measurements of the dimensions and weights, noting whether it is a complete or fragmented specimen, examining the form (**Figure 7.17**), identifying the material, and observing the hardness of material. All specimens were illustrated to scale, and photographs were taken. A total of 50 ground stone artifacts were collected from the Grieta Principal and Grieta Rincón, of which there were 37 mano specimens, 7 fragmentary metates, 1 pestle, 1 celt, and 4 doughnut” or ring stones.

Of the 38 manos recovered (**Table 7.26**), 7 were complete or almost complete (**Figures 7.18 – 7.21**). Most of the manos are made of limestone (n = 31), while few were made of igneous rock (n = 2), quartzite (n = 3), and sandstone (n = 1).

All the metates were relatively small fragments (**Table 7.27, Figure 7.22**). Unlike the manos, the metates are made of harder material such as igneous rock (n = 4), quartzite (n = 1), unidentified material (n = 2). This is in contrast with the surface site assemblage, in which limestone metates are most common (Inomata 1995:Table 7.27). Because of the fragmentary nature of the metates, it is unknown whether any of the manos pair with the metates found. It should be noted that none of the manos were found in association with the metates. The mano forms generally follow a similar pattern as that reported from the Aguateca surface site (Inomata

1995: Table 7.28). No meaningful statistics can be garnered from the very low frequency of metates, but both forms reported from the surface site are present in the *grieta* sample.

The highest concentration of manos and metates were recovered from the Two Owls Area (Op. 31B), namely Units 14, 12, and 6, followed by the Hidden Jar Area (Op. 31A, Units 9, 10, 12, and 14) and the *grieta* portion of the Grieta Rincón (Op. 30B, Units 1 and 4). The Chill Hill Area (Op. 31D), the Windy Valley (Op. 31E), and the Southern Entrance Area (Op. 31C) contained only a low frequency.

All of the manos show use-wear except for the sandstone specimen, which is difficult to ascertain any use-wear due to its rough and soft texture prone to erosion. None of the mano fragments show use-wear on the non-broken end, which would be suggestive of vertical use as pestles as reported from the Aguateca surface site. One possible exception is the sandstone specimen, which based on the overall shape and possible use-wears at the end, may have been a pestle (**Figure 7.19g**). However, six of the manos, all made of limestone, were reused after they were broken, as evidenced by smoothed surfaces of use-wear and/or reworked edges by chipping (**Figure 7.21**). This frequency is relatively high compared to the total ($n = 12$) reported from the surface site (Inomata 1995: 575).

It is also noteworthy that 5 manos were partially covered in calcite deposition, a phenomenon typical of objects exposed to water for an extended period of time in a karstic cave environment. Four of these were recovered from Unit 14 and one from Unit 6 of the Two Owls Area.

In addition, Kazuo Aoyama (personal communication, 2006) notes that manos and metates made of non-local materials were found in the Grieta Principal, namely metates made of basalt and schist and a basalt mano, were found in the Grieta Principal. The *grieta* metates comprise half ($n=5$) of the non-local metates collected and analyzed between 2004 and 2006

(n=10, total metates = 94), according to Aoyama. As well, one of the four non-local manos was found in the Grieta Principal.

Manos and metates are ubiquitous artifacts at cave sites. They are reported from numerous cave sites throughout the Maya area, and Peterson (2006:171-173) summarizes their distribution. Actun Nak Beh can be added to this long list, exposing 2 mano fragments (Halperin 2002:100). Miniature manos are also recovered from caves, including 232 specimens from Balankanche (Andrews 1970:11).

Ground Stone: Other

Other ground stone artifacts consist of 2 perforated jade pendants, 1 celt, 2 limestone spindle whorls, 2 pestles, 4 doughnut or ring stones, and 13 hammer stones and rubbing stones.

Two small greenstone (probably jade) pendants, roughly tear drop or celt-like in planar form, were recovered in association with an intact needle and two perforated animal teeth (AH31B-9-5-2) (**Figure 7.23**). I suggest that this was a dedicatory cache offered prior to the construction of Wall 2 in the Two Owls Area. They are roughly the same size, weighing 0.5 g each. One is 1.6 cm in length and the other 1.7 cm; their width is 0.8 cm, and thickness is 0.3 cm. The perforations are biconically drilled. Although their surfaces are well polished, particularly the front side, there are some indentations on the back that show the unpolished crystalline structure of the stone. It should be noted that these two small objects are some of the very few greenstone artifacts found in the Aguateca *grietas*, aside from the celt and a metate fragment. Jadeite pendants or beads, not necessarily of similar form, are reported from Actun Chanona (1) (Peterson 2006:180), Naj Tunich (Brady 1989:294-295), Eduardo Quiroz Cave (Pendergast 1971:70), a cave near Benque Viejo (Gann 1925:110), Actun Yaxteel Ahau (Owen and Gibbs 1999:191), Actun Toh (Rissolo 2001:54, Figs.6.4.a-b), Loltún (Thompson 1897:20), Balankanche (Andrews 1970, 52), San Pablo Cave (Lee and Hayden 1988:47), the Cenote of Sacrifice at

Chichen Itza (Proskouriakoff 1974:18-22, 26), Cueva de El Duende (1) (Brady, et al. 1994:602-604), Cueva de Kaxon Pek (1) (Brady, et al. 1994:602-604), Cueva Río Duende (2) (Brady, et al. 1994:602-604), Cueva del Río Murcielago (2) (Brady, et al. 1994:602-604), Cueva deSangre (5) (Brady, et al. 1994:602-604), Balam Na Cave 4 (Garza, et al. 2001:18), and a cave near Copán (Núñez Chinchilla 1972:103). Similarly shaped greenstone pendants are reported from Altar de Sacrificios (Willey 1972:143, Figs.126i, 128o, q).

Two, intact, hemispherical limestone spindle whorls were recovered from Unit 11 of the Hiddn Jar Area (#194 AG31A-11-2-1) and from the core of Step 1 in the Two Owls Area (#258 AG31B-8-1-1). They are plain with no incisions, but are well polished. The dimensions are outlined in **Table 7.28** and illustrated in **Figure 7.24**. Stone spindle whorls are reported from: Naj Tunich (2) (Brady 1989:300-303, Fig.6.15b), Actun Balam (2) (Pendergast 1969b:53-54), Eduardo Quiroz Cave (1) (Pendergast 1971:69), Actun Kabal (2) (McNatt 1986:Fig.23); Awe Cave (1) (Digby 1958:274)

A complete celt was excavated from Unit 11-extension (# 336 AG31B-11-1-3) (**Figure 7.25**). Its size, measuring 5.0 x 7.9 cm, fits at the juncture between the small (6 to 8 cm) and medium (8 to 15 cm) categories of the size-range classification (Willey 1978:86). It conforms to the commonly reported trapezoidal shape with a curving blade. It is made of an unidentified hard material, which has a dark green color ranging between Munsell colors 4/5G to 3/5G. Only the portion including the blade extending two-thirds of the way toward the hafting end had been polished, while the remaining portions were left unpolished and rough albeit well shaped. Interestingly, based on microwear analysis, Aoyama suggests that the *grieta* celt specimen was used to sculpt stone stelae, and it is quite possible that an elite sculptor deposited the celt as part of some ritual activity (Aoyama, personal communication, 2006).

Celts are commonly found at cave sites though in low frequencies: Petexbatun caves (15) (Brady, et al. 1994:604); Skull Cave (1 miniature), near Caracol, Belize (Ishihara 2003a); Actun Yax Tun (1) (Peterson 2006:182, Fig.4.10); Actun Chanona (3) (Peterson 2006:182); Naj Tunich (1 complete, 3 fragments) (Brady 1989:298, 300, Figs. 6.14c, d, 6.15a); Actun Balam (2 miniature) (Pendergast 1969b:53, Figs.10v,w); Eduardo Quiroz Cave (1 miniature, 1 celt) (Pendergast 1971:66-68, Figs.16f,g); Rio Frio Cave E (3) (Pendergast 1970:47); Actun Tunichil Muknal (3) (Moyes 2001:21, 27); Caves Branch Cave (1) (Palacio 1973:84); Cenote of Sacrifice at Chichen Itza (1) (Moholy-Nagy and Ladd 1992:99); Actun Kabal, Chiquibul cave system (at least 4, 1 miniature) (McNatt 1986:1; Fig.22); Wood Bench Cave and Xmuqlebal Xheton in southern Belize (Prufer 2002:Table 7.1).

The single pestle (#144 AG31A-12-2-1) is a complete specimen, made of chert, measuring 7.0 x 2.0 x 1.0 cm and weighing 21.5 g . It was recovered from Level 2 along the northwestern end of Unit 12 of the Hidden Jar Area in front (northwest) of Wall 4. Unfortunately, no photograph or drawing was made as it had been misplaced in the lab.

The second pestle specimen is likewise made of chert (#187 AG31D-5-2-3) (**Figure 7.26**). It is of a hemispherical form with the end tapering to a sharp edge. Parts of the sides have been chipped, but overall the artifact has been ground smoothly. Inomata reports one that is both chipped and grounded from Structure M8-10, but the form differs and the chipping is more extensive than the *grieta* specimen (Inomata 1995:Fig.8.32).

Four doughnut stones were recovered (**Table 7.29**). Two are larger fragments, representing about half of the original objects, while the other two fragments are small pieces. Three of the four doughnut stones were recovered from Unit 14 of the Two Owls Area and the other from Unit 4 of the Chill Hill Area (**Figure 7.27**). On one fragment (#348-03, AG31B-14-2-1), the edges along the interior side of the ring have a smoother surface, possibly

use-wear from repeated rubbing or grinding. The three specimens from the Two Owls Area are of a hard material, while the Chill Hill specimen is made of a soft material. Similar ring-shaped artifacts have been reported from cave sites such as Naj Tunich of Guatemala (Brady 1989), Kulal Ka and Toq' bil Roq' ikal in southern Belize (Prufer 2002:494, Fig.9.34h), Cueva de Los Quetzales (Brady, et al. 1994:613), and Cueva de Sangre (Brady, et al. 1994:613). The function of these objects has been controversial. Possible functions listed by Willey (1972:136) include weights for digging sticks, tools to shell maize through the hole, counterweights for doors or curtains, holders for banners or awning posts, and weights for lance or spear shafts. Moholy-Nagy (2003:48) suggests their use as weapons (i.e., club heads) based on the conditions of the artifacts indicative of strong impact. In fact, based on the well-preserved contextual excavations at Cerén, El Salvador, Sheets suggests that some were used as digging stick weights (Sheets 1992:46), some as a mortar as one specimen had organic material caked to the interior of the perforation with a hardwood stick projecting out of it as the pestle (Sheets 1992:52,69-70).

Hammer stones, or pounders, are spherical stones that have been shaped by grinding and show striking marks from use (**Figure 7.28d-f**). Rubbing stones are similarly spherical and have particularly smooth surfaces that are probably due to use-wear (**Figure 7.28a-c**). They usually have no chipped surfaces. In at least one case, both striking surface and smoothed surface occur, suggesting that it may have had multiple functions. Some may have been potential candidates for cores for lithic production. They are made of quartzite, chert, and hard limestone. All the specimens are spherical or subspherical, whose diameters range from 3.5 cm to 9.0 cm, but the most common size is 6.0 to 7.0 cm (**Table 7.30**).

One irregularly shaped limestone object with a perforation (3.0 x 2.4 cm, perforation diameter 0.7 cm) was recovered from the Upper Chamber of the Southern Entrance Area (#153

AG31C-8-1-1). It is unclear whether this perforation was bore artificially or naturally (**Figure 7.29**).

Manuports

Manuports, or unmodified rock that does not naturally occur in its deposited location, were collected including speleothems, river cobbles, quartz crystals, and pumice (**Table 7.31**). Speleothems, or broken fragments of any type of cave formation, were collected if similar speleothems do not occur naturally in the vicinity (**Figure 7.30**). One exception is an almost complete stalactite recovered from Unit 7 of the Southern Entrance Area, where the low ceiling is full of small stalactites; this was collected because it was larger than that on the ceiling and it was found in association with Interment 34. One particularly large speleothem was only photographed in the field (AG31C-10-1-1, **Figure 7.30a**). See Chapter 4 for a discussion of broken speleothems.

Several small pebbles, possibly river cobbles, were recovered (**Figure 7.31, Table 7.32**). The material of only one specimen could be securely identified: #103-01 AG31D-2-2-1 is quartzite. They have smooth surfaces, but it is difficult to discern whether they are smoothed from use or naturally. They were found in the Outer Chamber of the Hidden Jar Area, Passage 1 of the Two Owls Area, and inside and at the entrance to the cave on Chill Hill. Their depositional contexts may be suggestive of their function as ritual items, as three similar stones were found together in Unit 10 of the Hidden Jar Area, one was collected from the central ritual activity area in Passage 1, and one from the interior of the cave on Chill Hill. Small, unmodified stones have been reported from Cueva de los Andasolos (Navarrete and Martinez 1977:35, 55, Lamina 39b-j), caches at Chalchuapa, El Salvador (Sharer 1978:181, 183) and tombs at Kaminaljuyu, Guatemala (Shook 1949:219-220; Shook and Kidder 1952:113), but Brady (2006) notes that the

under-representation may be due to the lack of identification of such stones as culturally significant.

The three stones found together from the Hidden Jar Area are intriguing because they may relate to the three hearthstones that cosmologically relate to world creation, centrality, and rulership (Taube 1998). As examples presented by Taube show, the three hearthstones often appear in association with or inside the maw of zoomorphic *witzob* (“hill/mountain”), which is the equivalent of the cave entrance.

Other ethnographic uses of stones are noted by Brady (2006). Small stones may have been used as divinatory stones as stones are associated with the soul or breath spirit of individuals. In Chiapas, at the birth of a baby stones are placed in the family waterhole, and at marriage, a stone from the wife’s waterhole is removed and placed in the waterhole of the husband (Valladares 1957:203-206). Documented in a 16th century account on the Pokom Maya (Las Casas 1967), a stone (often of jade) is placed in the mouth of a dying person to capture the soul or spirit (see also Thompson 1939:283), and this practice is often seen in prehispanic burials. Another function of small stones may be polishers for ceramic vessel production (Christina Halperin, personal communication, 2007).

Three quartz crystals were collected from different areas of Grieta Principal (lots AG31B-12-1-1, AG31D-9-0-1, AG31E-1-3-2) (**Figure 7.32**). Brady and Prufer (1999) discuss the association of crystal use with Maya curing and divination based on ethnographic accounts (e.g., Hanks 1990; Tedlock 1982). Moreover, they note that aside from caves, crystals have also been reported from caches and burials, suggesting their ritual functions (Brady and Prufer 1999:136-137). Crystals have been reported from a number of cave sites: Actun Nak Beh (5) (Halperin 2002:101), Actun Tunichil Muknal (2) (Moyes 1998), Actun Yaxteel Ahau (1 quartz

cube, 1 crystal fragment) (Owen and Gibbs 1999), and Actun Uayazba Kab (82) (Ferguson 1999:59-61; Griffith 1998).

A piece of pumice was found in Unit 5 in the small cave atop Chill Hill (**Figure 7.33**). Most of the sides are flat, but some are smoother suggesting that these sides had been worked. It is lightweight (11.5 g) and soft. Eleven pieces of pumice were recovered from structures at Aguateca, ranging in weight from 4.2 to 364.0 grams (Inomata 1995:601, Table 7.44). Pumice pieces have been reported from Cueva de Río Murciélago (1) and Cueva de Sangre (1) (Brady, et al. 1994:640).

Faunal Material

Faunal analysis is ongoing and is being conducted by Dr. Kitty Emery and her student Michelle LeFebvre, using the Florida Museum of Natural History collections for comparison. The zooarchaeological material was recovered in great quantity and in good condition from all areas of the Grieta Principal and Grieta Rincón. To date, faunal analysis has been completed for a total of ten lots in four excavation units: Unit 9 (lots AG31A-9-1-1 and 9-1-2) of the Hidden Jar Area, Units 11 and 14 of the Two Owls Area (lots AG31B-11-1-1, 11-1-3, 14-2-1, 14-2-2), and Unit 1 of Chill Hill (lots AG31D-1-4-1, 1-5-1, 1-6-1, 1-7-1) (**Table 7.33**). Some of the results are discussed in Chapter 8.

Unmodified Bone and Shell

The excellent state of preservation has already been mentioned in relation to ceramics. The relatively sheltered morphology of the *grietas* and clayey soils have helped preserve animal remains in the *grieta*. Unmodified faunal material amounted to 4757 pieces of animal bone and 95 specimens of shell, from 125 lots throughout Grieta Principal and Grieta Rincón (**Table 7.34**). All excavation units in Grieta Rincón contained unmodified faunal material. In Grieta Principal, all but Unit 10 of the Two Owls Area and Unit 9 of the Southern Entrance Area contained fauna.

Considering the faunal remains analyzed so far, there appears to be no clearly patterned distribution such that argued by Pohl (1983), and in fact, Brady (1989:370-377) has also presented evidence from Naj Tunich that does not follow her patterns. Pohl (1983) has suggested that young or immature animals were preferred for use or sacrifice in rituals. The data from the Aguateca *grieta* also reveals a range of age, spanning from juveniles to adults. The material from Unit 11 all consist of juveniles and subadults (5 juveniles, 3 juveniles or subadults), while in the other units, both juvenile and adults are found. Of the animals whose age was identified, the opossums were all juveniles or subadults while dogs and deer were represented by the entire range of ages.

Another pattern Pohl (1990:163-164) pointed out is the prevalence of bones from the left side, in particular, of deer and possibly turkey from Late Classic elite contexts at Seibal and of bird from Eduardo Quiroz Cave (Pendergast 1971:82). All the identified bone from Unit 1 of Chill Hill (lot AG31D-1-5-1) are right elements; the other units contain a mix of both right and left elements. Though this may signify a preference for a particular side, it defies Pohl's justification provided for the dominance of left elements based on symbolic associations (Pohl 1990:164). Additionally, Pohl notes the overrepresentation of particular body parts in cenotes, such as hind limb bones of deer, cranial bones of dog, and post-cranial elements of peccary (Pohl 1983:91-94), attributing this pattern to select parts of animals being offered. In the current Aguateca sample, overall, leg and feet bones dominate, but cranial as well as other post-cranial bones are also present. When examined more closely by lot, no particular pattern emerges, except in Unit 14, in which mostly intact long bones of dog were found in high numbers. These observations remain tentative as analysis of the complete assemblage has yet to be completed.

Modified Bone and Shell

A total of 66 modified bone (n=51) and shell (n=15) artifacts were recovered (**Table 7.35**). The species identification of the material collected in 2005 was conducted by Dr. Kitty Emery in the lab in Guatemala City, as the artifacts were not exported to the US. The few specimens recovered during 2004 have yet to be analyzed. From the excavations at the surface site of Aguateca (47 structures, 9 walls, 12 plazas and patios, 3 platforms), 148 modified bone and 115 modified shell (503 individual shells) tools or ornaments were recovered (Inomata 1995:Tables 7.2, 7.3, 7.4, 7.5, 7.37). When compared with other cave site assemblages, the frequency of modified bone is relatively high, although the number of modified shell is low (**Table 7.36**).

Only 3 specimens of worked bone were found in the Grieta Rincón, and the rest were recovered from the Grieta Principal. A large percentage of the bone tools can be considered textile production tools (n=28, 42%). Ornamental pieces also comprise a large portion of the assemblage (n=26, 40%) of the worked bone and 2 musical instruments (rasps) were also found. There was a high percentage of smaller fragments whose original form could not be determined (n=21, 32%).

Spatulas. One complete specimen (#192 AG31D-5-2-3) and three fragments (#349 31B-14-2-1, #145 31D-1-6-2, #122 31D-2-2-1) of modified bone that can be categorized as spatulas were found (**Figure 7.34**). These artifacts are slender (but wider than the bone pins) with a relatively flat cross-section in the shape of a parenthesis. They are well smoothed and polished. They usually have a rounded and blunt end. The complete specimen measures 16.4 cm in length, 1.2 cm at its widest, and 0.2 cm at its thickest, weighing 6.0 g. The craftsmanship and preservation of this artifact is incredibly good, retaining its original shine on all sides. The complete specimen tapers to a blunt point, not sharp enough to be used for piercing objects. The fragments represent either medial portions or the rounded end. Willey and colleagues report

similar artifacts from Barton Ramie, Belize, and suggest that they were hair ornaments based on their contextual locations at the back of the head in burials (Willey, et al. 1965:494). Similar objects are reported from the following: Naj Tunich (2) (Brady 1989:271-274, Fig.6.6d,e) and Eduardo Quiroz Cave (2) (Pendergast 1971:71). Willey (1972:237) summarizes distribution at non-cave sites. Similar artifact also reported from Ixkun (1), Ixcoxol 2 (2), and Sacul (1) (Laporte and Reyes 2004:286-287, 289).

Needles. Six complete needles and two fragments were recovered (**Figure 7.35**).

Needles are formally similar to pins but with an eyehole at one end, or in rare instances, at both ends. The eyehole may be a drilled perforation or a vertically cut trench worked from both sides. Like pins, they are slender and have a round cross section, well smoothed and highly polished. The Aguateca *grieta* specimens can be divided into short (5.5 – 7.7 cm in length) and long (11.4-15.4 cm in length) needles, which follow the general size range reported from other sites such as the Sepulturas zone of Copán, Honduras (Hendon 1992:10). One of the long needles from the *grieta* is noticeably more slender and fragile than the others, suggesting its use with thin material. Making nets required the use of needles, as shown in the Dresden Codex (page 2). Needles are reported from the following cave sites: Naj Tunich (5) (Brady 1989:269-271, Fig.6.6a, 6.7a); Loltún (3) (Thompson 1897:20), X'kukican (1) (Cottier 1967); Actun Balam (1) (Pendergast 1969b:55, Fig.10ee); Actun Polbilche (1) (Pendergast 1974:51, Fig.11g), Awe Cave (2) (Digby 1958:274); Petroglyph Cave (8, of which 2 are proximal ends so they could be pins) (Reents-Budet and MacLeod 1997:72-73); and Aktun Ak'Ab (1) (Laporte and Reyes 2004:283). Surface sites that have recovered needles include: Mayapan (14) (Proskouriakoff 1962:374, Fig.37k,n); Tikal (27, Varieties A1, A2 and B2 under "Perforators") (Moholy-Nagy 2003:59, Figs.121n-r, 122m-p).

Picks. Five picks and four possible picks were collected (**Figure 7.36**). I define picks as slender, highly polished pointed bone objects with a round cross section and a longitudinal profile usually forming a gentle arch. They may be made of mammalian long bones or bird bones. The point may measure as little as 2–3 mm in diameter. The proximal end comes to a point but it not sharp. The non-pointed end may be the articular portion with varying degrees of modification or may be carved with geometric or stylized zoomorphic designs. It should be noted that fragments that represent the proximal ends or shafts may either be needles or pins.

Two complete specimens from Grieta Principal depict serpent heads (Karl Taube, 2006, personal communication) (#357 AG31B-14-2-1, #360 AG31B-14-2-2) (**Figure 7.36b-c**). They measure 15.0 and 16.8 cm in length. The former specimen shows no shine overall, and the surface of the proximal end (approximately 1/4 of entire length) is heavily pitted. The latter specimen retains its polish throughout, but the polish is stronger on the proximal end, suggestive of use-wear from continual friction (Dacus 2005:19).

One spectacular specimen is almost twice the length of the other two complete ones, measuring 28.7 cm in length (#359 AG31B-14-2-2) (**Figure 7.38**). It is made from the long bone of an unidentified large mammal (Emery, personal communication, 2006). The shaft of the pin was found in four conjoining fragments in addition to a small broken piece on the distal end. The carving on the distal end consists of an open right hand, and is missing its thumb, index finger and middle finger. The hand contains detailed incisions on both sides to show the lines on the palm and fingernails. Short vertical lines enclosed by two sets of two horizontal lines encircle the wrist, as if imitating the cuff of a sleeve. The pointed end (approximately 1/4 of the entire length) shows less polish and its surface is pitted, as in one of the other complete picks described above.

A cache from an unprovenienced Naranjo tomb contains 24 complete specimens and 15 fragments, all covered in cinnabar, ranging from 16.6 to 25.2 cm in length (Dacus 2005:17-18;

see K8019, Kerr 2007). Ten of them are decorated on the distal end with a hand motif, usually grasping some object. Other carved motifs include heads, bundled objects, or in one instance, a quetzal bird. One has a circular perforation near the carved end, and others have holes in the “fists” as if they had held an object at one time. Thirteen of the bones are name-tagged u puts’ b’aak (“her/his weaving bone”) (Dacus 2005:64, Note 5; Houston and Stuart 2001). A fragmented specimen (15.3 cm long, wrist diameter 12.5 mm) is reported from Dzibilchaltun (Taschek 1994:110, Fig.31b) as well as a complete specimen made of wood (the “arm” shaft portion is hollowed out) (12.5 cm long, 7.5 mm diameter at wrist) (Taschek 1994:128, Fig.42e). The shaft fragment of a slender pick from Dzibilchaltun contain the u puts’ b’aak phrase, as noted by Taube (Houston and Stuart 2001: Note 5). They were both recovered from Cenote Xlakah. A similar artifact was recovered from Cueva de Los Quetzales near Dos Pilas (Brady and Rodas 1995:22). In the back of the hand of the Cueva de los Quetzales specimen, the glyph u baak, “her/his bone,” is carved. One example was recovered from Jasaw Chan K’awiil’s burial (Burial 116), Tikal, and is covered in red pigment. A fragmentary example (3.5 cm long, 1.15 cm wide, 1 cm thick) from San Pablo Cave, Chiapas, shows “the lower arm and doubled-up fist of a human being” with a double band encircling the wrist with a “lazy Z” or knot (Lee and Hayden 1988:49, Fig.32b). A specimen from Mirador, Chiapas (11.9 cm long), has a slightly different appearance with scroll motifs on both the palm and back side of the hand (Agrinier 1975:55, Figs.50, 56e). This object and another weaving pick was found in Burial 31 along with 5 centrally perforated bone disks, which are probably spindle whorls. Others are reported from Piedras Negras (Coe 1959:62, Fig.57i), X’kukican (Cottier 1967:153-154, Fig.53G), and the Pavon site (Ekholm 1944:485, Fig.53w). The form of the hand ranges from open palm, as in the Aguateca *grieta* specimen, to extended thumb and index fingers, to closed fist. All specimens show a wristband or bracelet.

Possible uses include hair ornaments or pins for clothing or textiles, paint brushes (Inomata 1995:589), warp-lifters called picks used in weaving, or brocade picks (Hendon 1992:11). It should be noted that they may have had multiple functions. I suggest, however, that they were weaving picks, as they closely resemble ethnographic specimens used in weaving (Bunch and Bunch 1977; Cordry and Cordry 1968 Figs. 20, 21; de Jongh Osborne 1965; O'Neale 1945:34, Illustration 75h; Carol Hendrickson, personal communication, 2007; Karl Taube, personal communication, 2006). Evidence for prehispanic use is supplied in the Madrid Codex (page 79), which shows Goddess O using a similar tool with a curved element at the distal end, possibly the bone condyle (Karl Taube, personal communication, 2007). Archaeological examples that are name-tagged "her/his weaving bone" from Naranjo and Dzibilchaltun reinforce this identification (Dacus 2005; Houston and Stuart 2001:64, Note 5).

Bone picks are reported from the following cave sites: Naj Tunich (9, one of which has a partial perforation for the eye of a needle) (Brady 1989: 269, Fig. 6.5c-e), Actun Balam (2) (Pendergast 1969b:55, Fig. 10dd), Eduardo Quiroz Cave (1) (Pendergast 1971:70-71, Fig. 17a), and Actun Polbilche (1) (Pendergast 1974:51, Fig. 11g). Reports from surface sites include: Naranjo (Dacus 2005); Uaxactun (at least 20 because of the differences in definition) (Kidder 1947: Fig. 41a-j, 82c1, 82c6-13, 84a); Tikal (45, Variety A under "Perforators") (Moholy-Nagy 2003:59, Fig. 122a, b); Mirador, Chiapas (1) (Agrinier 1975:55); Cerros (at least 3) (Garber 1989: Fig. 18a, g, h); Mayapan (1) (Proskouriakoff 1962:374, Fig. 37m); Ixtonton (1) (Laporte and Reyes 2004:282); Calzada Mopan (1) (Laporte and Reyes 2004:287). Six elaborately carved pins, measuring approximately 14 cm in length, are photographed by Justin Kerr (K7128) (Kerr 2004).

Awls. Two complete awls and 3 possible awl fragments were recovered (**Figure 7.37**). Commonly referred to as "perforators" as well as "awls" (*leznas* in Spanish) in the archaeological literature, awls are made of the long bone of a mammal, which is often deer, usually with part of

the distal end of the articulation remaining. They are thick and u-shaped in cross-section from the natural cavity, and are often triangular in plan, tapering to a relatively blunt point. They are more robust than picks or spatulas. The complete specimen that retains much of the articulation measures 12.0 cm in length, 2.6 cm in width, and 1.1 cm in thickness. The other, more slender specimen measures 10.3 cm in length, 1.3 cm in width (at its widest), and 0.5 cm in thickness. The tip and parts of the flat portions on the former shows some red discoloration or residue which may have been caused by use. Two fragmentary pieces (#194 AG31B-7-4-4, #192 AG31D-5-2-3) have lost their proximal tips but their overall form suggest they fall under this artifact type. There is a questionable specimen (#105 AG31E-1-2-1), whose surface is battered with cut marks.

As with any artifact, awls may have had multiple functions, such as punching through tough materials (Taschek 1994:113) that may include leatherworking, use in weaving (Inomata 1995:588), and use in basketry. Contemporary Maya people use similar objects for husking maize, though it has been noted that bone huskers are sometimes used to make nets and “ceremonial woven gourd supports” (Hayden 1987:181). Hendon (1992:11) argues their use in the weaving process. In fact, Jeffrey Jay Foxx (personal communication, 2007), an ethnographic photographer, has documented a contemporary Maya weaver using a tool that would be defined archaeologically as an “awl.” On page 79 of the Madrid Codex, the bone tool used for weaving by Goddess O may be a weaving pick, as described above, or it may be an “awl” with the curved element representing the bone condyle, as noted by Taube (personal communication, 2007). As Moholy-Nagy (2003:59) noted, whether they were used to make mats, baskets, nets, or used as weaving picks, clothing fasteners, or leatherworking, this bone tool was associated in one way or another with textiles. Similar artifacts are reported from the following cave sites: Cebada Cave in the Chiquibul system (McNatt 1986:Fig.28); X’kukican (1) (Cottier 1967:157); Cozumel Island (6) (Phillips 1979, Fig.30j). From surface sites, they are reported from: Tikal (5, Variety C under

“Perforators”) (Moholy-Nagy 2003:59, Fig.121a-c, e); Uaxactun (at least 3) (Kidder 1947:Fig.82c2-4); Cerros (at least 5) (Garber 1989:Fig.18b-f); Mayapan (37) (Proskouriakoff 1962:373-374, Fig.37a-j); Ixtonton (2) (Laporte and Reyes 2004:282, 289); and Curucuitz (Laporte and Reyes 2004:289).

Bone Tubes. Bone tubes are cut sections of long bones, some with perforations. Seven bone tubes were identified and are all well polished (**Figure 7.39**). The size of one complete specimen suggests its use as a bead (#143 AG31C-7-1-1) (**Figure 7.39c**). Two of the bone tubes have perforations (#357 AG31B-14-2-1, #148 AG31D-4-1-1): one has 2 holes toward the end of the tube on opposing sides as if to put string through and hang it (**Figure 7.39a**), and the other had a single hole in the central portion of the tube (**Figure 7.39b**). With regard the latter, the lack of other holes in a linear fashion excludes its use as a flute. Of the smaller fragments, one has simple tassel-like carving on one end, and its length appears to be the original length of the object (#143 AG31C-7-1-1) (**Figure 7.39e**). There are several more fragments that may be bone tubes but their small size does not allow for secure identification. Bone tubes or beads are recovered from Actun Balam (Pendergast 1969b:54-55, Fig.10f), Petroglyph Cave (2) (Reents-Budet and MacLeod 1997:73), Balam Na (1) (Laporte and Reyes 2004:286). A bone tube with perforations are found at Structure M7-35, Agateca (Inomata 1995:8.60b), and one bone tube with 3 perforations is reported from Naj Tunich but contains incised decorations, which most of the Aguateca grieta specimens do not (Brady 1989:277-278, Fig.6.7d). Surface sites that report bone tubes include Dzibilchaltun (10) (Taschek 1994:107-108, Fig.29b-j), Altar de Sacrificios (26) and others (Willey 1972:234-235, Fig.201h-j).

Rasps. Two complete bone rasps were collected (**Figure 7.40**). Rasps are made of the long bone of a mammal, and are scored on one side of the shaft with several short lines. The Hidden Jar Area specimen (#175 AG31A-11-1-2) is made of the proximal portion of a human

femur, with five scored lines. The long bone had been cut carefully. The Chill Hill cave specimen (#192 AG31D-5-2-3) is made of a white-tailed deer tibia, its ends broken off, and is scored with at least 29 lines. They were likely used as musical instruments by rubbing another object across the incisions (Beyer 1934 ; Durán 1967:154; Mathiowetz 2007). Mathiowetz (2007) examines similarly notched rasps made of bone and wood from Central Mexico, west Mexico, and the Greater Southwest, and suggests a connection with the celestial solar ladder and the paradisaical flowery road. Mathiowetz also notes that rasps are often recovered from burials of high status individuals. Bone rasps are reported from the following sites: Altar de Sacrificios (6) (Willey 1972:234-235, Fig.201k); Barton Ramie (2) (Willey, et al. 1965:496, Figs.305j,k); Tikal (8) (Moholy-Nagy 2003:61, Fig.124); Cerros (1) (Garber 1989:57, Fig.17j); Lubaantun (“several”) (Joyce 1933xviii); Machaquila (1) (Laporte and Reyes 2004:288); El Chilonche (1) (Laporte and Reyes 2004:288); El Muxanal (1) (Laporte and Reyes 2004:290); Pueblito (1, not the typical long bone) (Laporte and Reyes 2004:294); and Quen Santo (2) (though they are described as “bone rattles” without a drawing or further information) (Seler 1992). Hammond (1972) reviews rasps reported from the Maya area and Linné (2003 [1934]) presents rasps from museums and sites in Mexico. Recently McVicker (2005) has reviewed rasps reported from sites throughout Mesoamerica, focusing on Late Postclassic Central Mexico, and though he suggests their use to produce particular sounds, he identifies two varieties with different uses in mortuary practices.

Bone Disks. Five centrally perforated disks (2 complete, 3 partial) were recovered (**Figure 7.41**). The perforations are cylindrical, and only one shows clear indication that it was bifacially drilled. These disks are plano-convex in section. The flat side of all disks is well polished, and on the convex side, the area around the perforation is well smoothed with no polish. The peripheral area on the convex side is usually smoothed but the spongy, porous appearance of the bone is apparent. The disks measure 4.0 – 4.8 cm in diameter and 0.4 – 0.6 cm in thickness,

and the perforations are 0.55 – 0.6 cm in diameter. Though the sample size from the *grieta* is small, their sizes and overall form suggest they are fairly standardized. Four of the five disks were recovered from the slope at the entrance to the Inner Chamber of the Hidden Jar Area. The other disk was found in the central part of Passage 1 in the Two Owls Area, in association with a finger ring, a crudely cut thin bone, 1 chert flake, and much faunal material. The latter disk differs from the others in that it is of a reddish brown color, possibly from heat exposure during the production process. I suggest these were used as spindle whorls (Kidder 1947:56-57; Willey 1972:231), though admittedly they could have other functions such as beads or “to fasten clothing” (Moholy-Nagy 2003:60). Surprisingly, no similar artifacts are reported from excavations of the structures at Aguateca (Inomata 1995:588-590). Similar perforated bone disks are reported from the following cave sites: Candelaria Caves (2) (Carot 1989:60); Cueva de El Duende (1) (Brady, et al. 1994:588); Cueva de Los Quetzales (3) (Brady, et al. 1994:588); Cueva de Río Murcielago (Brady, et al. 1994:588). From surface sites, they are reported from: Altar de Sacrificios (2) (Willey 1972:231, 234); Uaxactun (1) (Kidder 1947:56-57, Fig.84c); Tikal (11) (Moholy-Nagy 2003:60, Figs.122q-v), Cerros (1) (Garber 1989:59, Fig.161), and El Mirador (7, 2 of which are more triangular in section) (Agrinier 1975:55, Figs.50a, 56a, b, d, h).

Bone Plaque. A beautifully carved bone plaque was found in Grieta Rincón in front of the cave entrance (Unit 4, AG30B-4-2-1; see Chapter 6 for contextual information) (**Figure 7.42**). It was originally recovered in three pieces. The artifact measures 8.7 cm long, 5.6 cm wide at its widest point and tapering to 3.25 cm at the base. Its thickness ranges from less than 1 mm to 2.5 mm thick. Some of the bone was covered in a thin and brittle layer of calcite, but careful cleaning and consolidation (adhering Japanese “washi” paper on the back) by Triadan has revealed the iconography in its entirety. The bone retains its polished surface, especially on the right side of the bone where the serpent is depicted. Its fine craftsmanship can be observed in the thinness of

the piece, thus the bone can only be identified as the tibia of a large mammal (Emery, personal communication, 2006). The basal portion of the bone apparently had been broken in antiquity, because part of the breakage had been reworked and partially rounded though it was never completed. The broken end likely tapered to a point as shown on vessels (Coe 1967:104; Ricketson and Ricketson 1937:Fig.116m; Smith and Kidder 1943:Fig.43), perhaps used as a hair pin. Comparable specimens include one from Dxibilchaltun (Taschek 1994:Figs.30h, 31a). The high level of artistic skill involved and similar findings from elite contexts at Aguateca suggest an associated regal status of the owner of this object and probably of those who deposited it here.

The carved iconography shows a profile face of an anthropomorphic entity (facing viewer's left), framed by a circular cartouche-like line, emerging from the open maws of the serpent. Curvilinear lines sprout outwardly from the cartouche-like element, which may signify the serpent's breath. The human face, likely depicting a young person, wears ear flares and the hair is tied in a knot atop the head. A linear element, or the breath, can be seen in front of the nose. With a large flower attached to the end of the serpent's snout, the undulating body is depicted vertically occupying the right half of the image. The serpent rises directly from a stylized flower, whose identification is confirmed by the hummingbird sucking at it. Karl Taube (personal communication, 2006) pointed out that the serpent emerges from Flower Mountain, the Maya place of paradise, identified by the flower at its brow (Taube 2004). Although Lintels 15 and 25 at Yaxchilan depict serpents rising in a similar manner, the serpents emerge from incense in these instances (Miller 1999:125-126, Figs.103-104). Although most often the emerging individual is identified as a supernatural being, such as God K (Kerr 1992:389; Robicsek and Hales 1981:Vessel 142), there is at least one instance (Lintel 13 at Yaxchilan) in which the emerging face represents a historical figure (Houston and Stuart 1989:7). Without any textual evidence, it is not possible to determine whether the *grieta* specimen depicts a supernatural or a historical figure.

Taube (personal communication, 2006) notes that serpents emerging out of Flower Mountain can be seen as early as the Late Preclassic in the murals of the North Wall at San Bartolo and Stela 4 at Takalik Abaj.

Other. Other bone artifacts consist of a bone ring, 3perforated animal teeth, a crudely cut thin bone, shell mosaic inlay, perforated shells, and 2 unidentified worked bone objects. The bone ring (#194 AG31B-7-4-4) has an inner diameter of 1.8 cm, and has a simple carved decoration (**Figure 7.43**). It is similar in style to a ring that was part of the assemblage from a Naranjo tomb that included weaving pins (Dacus 2005). Finger rings have been reported from the Cenote Xlakah at Dzibilchaltun (7) (Taschek 1994:109-110, Fig.30a-g), Mayapan (2) (Proskouriakoff 1962:374, Fig.38c, d), and other sites (Taschek 1994:110).

The crudely cut thin bone (#215 AG31B-7-5-4) measures 9.1 cm in length, 0.7 cm at its widest point and 0.3 cm thick at midpoint (**Figure 7.44**). One end is pointed. It appears to be polished but its triangular section and crudely cut pointed end distinguishes it from the pins described above.

Three biconically drilled perforated animal teeth were found (**Figure 7.45**), two of which were recovered from a cache under Wall 2 in the Two Owls Chamber (#312 AG31B-9-5-2). These two teeth were identified by Kitty Emery (personal communication, 2006) as the right and left maxillary canines of a collared peccary (*Tayassu tajacu*). The third (#145 AG31D-1-6-2), probably a canine of a dog (*Canis* sp.) (based on author's assessment), 1.7 cm in length, was collected from Unit 1 of Chill Hill, in association with Interment #52. Perforated animal teeth are reported from Actun Polbilche (23 whole, 15 fragments) (Pendergast 1974:55, Plate 10) and Petroglyph Cave (2, both of which are identified as *Canis* sp.) (Reents-Budet and MacLeod 1997:73, Fig.45a). For a summary of surface site distribution, see Pendergast (1974:55) and Taschek (1994:107). Also reported from Dzibilchaltun (4) (Taschek 1994:107, Fig.38e-h), Cerros

(7) (Garber 1989:53, Fig.17c-g), Ixtonton (8, though 6 of those are fragmented), and Calzada Mopan (1) (Laporte and Reyes 2004:283).

Shell artifacts include carved or perforated freshwater (*Nephronaias* sp., *Psoroniais* sp., *Oliva reticularis*) and marine shell (*Strombus* spp.). Of the 66 worked faunal material, 15 shell artifacts were recovered, and the majority, if not all, were probably decorative objects such as pendants and inlays. The worked shell ornaments consists of: three O-shaped flat disks (varying from 0.7 cm to 4.0 cm in diameter) and one solid disk (**Figure 7.46a-d**); an arch-shaped pendant made with incisions on one side (**Figure 7.46e**); one oliva shell “tinkler” with 3 perforations (**Figure 7.46f**); a “rosetta” carved into a flower with four petals, possibly an inlay (**Figure 7.46g**); a thin, rectangular inlay piece (**Figure 7.46h**). Several perforated shells were also found: two apple snails (*Pomacea* sp.), one with two larger circular holes on the body whorl (about 1 cm in diameter) and a smaller hole near the outer lip (4 mm in diameter), and the other with only the small hole near the outer lip (**Figure 7.47a**); three freshwater clams with one to two small perforations (holes range from 1 mm to 4 mm) (**Figure 7.47b-d**).

Small, O-shaped disks, or circlets, are reported from Actun Polbilche (18 whole, 21 fragments) (Pendergast 1974:57, Fig.11k), Naj Tunich (1) (Brady 1989:287, Fig.6.11b), Santa Marta Cave (2) (García-Bárcena and Santamaría 1982:143), San Pablo Cave (7) (Lee and Hayden 1988:47), and Petroglyph Cave (Reents-Budet and MacLeod 1997:69, Fig.27e). Small, solid conch disks are reported from Structure M8-10, Aguateca (Inomata 1995:Fig.8.38a) and Eduardo Quiroz Cave (Pendergast 1971:Figs.17l-n). Oliva shell tinklers are reported from the following: 1 from Structure M8-10, Aguateca (Inomata 1995:Fig.8.35e, 8.36a), 3 from Naj Tunich (Brady 1989:286-287, Fig.6.11a), 1 from Loltún (Thompson 1897:17), 8 from Actun Balam (Pendergast 1969b:55), 1151 from Eduardo Quiroz Cave (Pendergast 1971:71), and 157 from Actun Polbilche (Pendergast 1974:55, 56, 59). Perforated freshwater bivalves are reported from caves: Naj Tunich

(5) (Brady 1989:281-282, Fig.6.9b), Eduardo Quiroz Cave (7) (Pendergast 1971:74, Figs.17i-k), and Candelaria Cave system (2) (Pope and Sibberensen 1981:20). See Willey (1972:220-228) for a summary of surface site distribution of worked shell artifacts.

Two objects of unidentified function were found. One is a polished bone fragment cut into the form of an ice cream stick, with nine biconically drilled perforations (**Figure 7.48**). It weighs less than 1 g. There is no apparent pattern in the placement of the holes, except that they span the entire length of the bone. A somewhat similar object is reported from Cerros, but differs in that it has an L-shaped cross-section, leading the investigator to suggest that it was a central element in a bar pectoral composite necklace with ornaments suspended from it (Garber 1989:53, Fig.16a). The other is a mammalian long bone that has been smoothed on all sides (**Figure 7.49**).

Human Remains

The human remains were analyzed as part of licenciatura thesis research by Juan Manuel Palomo at the Universidad de San Carlos in Guatemala City, with guidance by Dr. Lori Wright (Palomo 2005; 2007). During the first season, disarticulated human bone found within the same lot in an excavation unit had been assigned a single Interment number, which was a part of consecutive serial numbers for the whole Aguateca Archaeological Project. However, after the start of the second season it was decided that, due to distinct depositional patterns in cave settings, isolated and fragmentary human bone should be recovered as HB, which became a newly formed artifact type code and was treated in the artifact log as such. Interment numbers were assigned only for articulated or partially articulated skeletons.

As noted with the faunal material, the osteological materials recovered from the *grietas* were, for the most part, in very good condition. A total of 1244 skeletal elements were recovered, with a MNI of 60 and a maximum number of individuals of 133 (Palomo, personal communication, 2006). The bones represent the entire age range and both sexes. Some evidence

of trauma has been identified by Palomo, but we must await his interpretations of the observations which include cut marks. Of particular interest is a cervical vertebra with cut marks that may, due to its close association with the partial skeleton, indicate decapitation (Interment #51, Unit 11, Hidden Jar Area). Another specimen of interest is a skull with a post-mortem perforation from Grieta Rincón (Unit 1).

Miscellaneous Artifacts

Clay Artifacts

A spherical, unslipped ceramic bead (#319 AG31B-10-1-1), measuring 1.2 cm in diameter and a hole 0.2 cm in diameter was collected from Unit 10 of Passage 1 in the Two Owls Area (**Figure 7.50**). Clay beads are commonly reported from burials, and are often covered with blue paint or green paint over a stuccoed surface, as if to imitate jade beads (Willey 1972:87). Ten spherical beads, though slightly larger than the Aguateca *grieta* specimen, were found in Burial 128 at Altar de Sacrificios and were covered with a gray-green stucco (Willey 1972:87, Fig.72). Small, spherical clay beads are reported from Altar de Sacrificios (Willey 1972:87-89; Fig.72), Piedras Negras (Coe 1959:71, Figs. 58a, k, l, 59i), and Mayapan (Proskouriakoff 1962:401).

A ceramic spindle whorl fragment was collected from Unit 8 of the Chill Hill Area (**Figure 7.51**). It is made of a light brown, fine paste with calcite temper. Hemispherical in form, post-fire incised decoration is observed around the wider part of the whorl, a band containing a succession of triangles with a paralleling line. Ceramic spindle whorls are reported from caves: Balankanche (26 complete and fragmentary specimens) (Andrews 1970:11-12, 45-51; Figs. 38-41), Cenote of Sacrifice (1) (Coggins and Shane 1984:Fig.186), and Cueva de Sangre (3) (Brady, et al. 1994:577-579). Surface site distribution of ceramic spindle whorls are summarized by (Willey 1972:86).

A cylindrical ceramic stamp fragment (#345 AG31B-14-2-1) was recovered from Unit 14 of the Two Owls Area (**Figure 7.52**). It retains traces of red pigment on its exterior surface. It has a diameter of 4 cm with a hole diameter of about 2 cm. It is made of a coarse gray paste. Another sherd of a likely stamp was collected from the same unit (lot 14-2-2), and the similar paste suggest that it is part of the same artifact. The stamp fragment shows a geometric motif with two horizontal lines encircling the cylinder about 5 cm from the rim. Between these two lines and the rim is a series of a V-shape with double-lines and 1-cm diameter circles. Other examples have been reported from Altar de Sacrificios (Willey 1972:94), Uaxactun (Ricketson and Ricketson 1937:221), Barton Ramie (Willey, et al. 1965:410), Copan (Longyear 1952:103), Mayapan (Proskouriakoff 1962:401).

An unidentified ceramic object, which is almost complete, was recovered from Unit 1 of the Chill Hill Area (**Figure 7.53**). It is egg-shaped with a speed bump-like protrusion on one side and a conical protrusion on the other side. It is unslipped, with a medium-fine, tan paste. It was clearly made into this form, though its function eludes me entirely. To my knowledge, no objects similar to this specimen have been identified from other sites.

Stone Artifacts

A pyrite object was found in the central activity area of Passage 1 in the Two Owls Area (#344 AG31B-11-1-3). Its hexagonal form combined with a well polished and shiny surface on one side and a rougher surface on the other suggest that it was a mirror mosaic piece (**Figure 7.54**). Two of the longer edges of the hexagon are not beveled unlike the others, indicating that this piece many have bordered the outer edge of the mirror with the beveled edges fitting other mosaic pieces. Similar objects have been found at Holom Kaminak in the Toledo District of Belize (Prufer 2002:Table 7.1) and caves near Dos Pilas including Cueva Kaxon Pek (1), Cueva de Los Quetzales (1), Cueva Río Murciélago (10), Cueva de Sangre (2) (Brady, et al. 1994:604,

606, Fig.53.19) . Pyrite mirrors are reported from surface sites throughout the Maya area (Kidder, et al. 1946:126-132; Smith and Kidder 1951:44-50; Willey 1972:141-142).

An incised white stone sherd was recovered from Unit 1 of Chill Hill (Op.31D, lot 1-4-1) (**Figure 7.55**). It is a body sherd, probably of a vase. No dimensions of the vessel could be estimated due to the small size of the sherd. The sherd shows a fragmentary text incised diagonally, as Karl Taube and Stephen Houston (personal communications, 2007) noted. Along the right edge of the sherd are fine lines depicting flowing hair of a person. Some of the glyphic elements may be identified as *lu*, *ji*, and *bi* but not enough is represented on the sherd to make sense of the overall text (Houston and Taube, personal communications, 2007). According to Christina Luke (personal communication, 2007) who specializes in white stone vessels found in Mesoamerica, the *grieta* sherd conforms to what she terms the Maya-style, which are mostly made of alabaster or travertine and have incised glyphs and scenes. She further notes that the majority of white stone vases are recovered from ultra-elite contexts, such as in burials or caches, and several are from caves (cf. Luke In press; Luke and Tykot In press). Particularly of interest is Luke's observation that the *grieta* sherd appears to have been exposed to fire, which is not uncommon with white stone vessels. Luke suggests "a highly ritualized component to how they were used" (personal communication, 2007).

Three sherds (likely of one vessel) were recovered from Structure M8-10, the House of the Scribe, at Aguateca (Inomata 1995:599, Figs.8.47a, b). Unlike the *grieta* sherd, these fragments are from a shallow bowl. Inomata (1995:599) suggests that it is likely that the residents curated such sherds because of their rarity and high value. Thus the finding of this sherd on Chill Hill in this activity area may suggest that the ritual participants were of a high status (Inomata, personal communication, 2005).

Other

Red pigment was recovered adhering to the interior of four basal sherds of a Tinaja Red or Pantano Impressed jar from Unit 1 of Chill Hill (lots AG31D-1-5-1 and 1-6-1) (**Figure 7.56a**). Another sample was collected from Unit 9 by Wall 4 of the Two Owls Chamber (AG31B-9-4-1) (**Figure 7.56b**). Samples were submitted by Lic. Erick Ponciano to the Guatemalan Ministry of Energy and Mines (Ministerio de Energía y Minas) but was unable to identify the material, we were told, due to an insufficient size of sample. However, the two technicians who examined it suggested that it appears to be cinnabar (Erick Ponciano, personal communication, 2006).

From the central area of Passage 1 of the Two Owls Area (lot AG31B-11-1-3, carbon sample III) samples of charcoal and burnt clay were collected underlying the carpet of broken Saxche Polychrome bowl sherds. As the soil matrix was prepared to be wet screened, hardened clay with a thin layer of stucco painted with pink and blue pigment was found (**Figure 7.56c**). The largest piece measured only about 2 cm long and 0.5 cm wide, as the clay was very soft and fragile. This piece had a rounded surface and may be the edge of the unidentified object. The clay seems to not have been fired at a high temperature, if at all.

Table 7.1. Ceramic types and their frequencies, listed by time period.

Type	Weight		Frequency	
	g	%	#	%
Late Preclassic (200 BC - AD 250)				
<i>Uaxactun Unslipped Ware</i>				
Achiotes Unslipped	1896	0.5%	68	0.2%
Sapote Striated	186	0.1%	6	0.02%
<i>Paso Caballo Waxy Ware</i>				
Sierra Red, Laguna Verde Incised	810	0.2%	41	0.1%
Flor Cream	2320	0.7%	130	0.4%
Polvero Black	844	0.2%	32	0.1%
Early Classic (AD 250 - 600)				
<i>Uaxactun Unslipped Ware</i>				
Quintal Unslipped	4620	1.3%	265	0.9%
Triunfo Striated	2806	0.8%	99	0.3%
<i>Peten Gloss Ware</i>				
Aguila Orange	861	0.2%	69	0.2%
Caribal Red	614	0.2%	30	0.1%
Balanza Black, Lucha Incised, Delirio Plano-relief	334	0.1%	32	0.1%
Dos Arroyos Orange Polychrome	1439	0.4%	44	0.1%
Late Classic general (AD 600 - 830)				
<i>Uaxactun Unslipped Ware</i>				
Cambio Indeterminate	1895	0.5%	88	0.3%
Cambio Unslipped	6985	2.0%	353	1.1%
Pedregal Modeled	303	0.1%	7	0.02%
Encanto Striated	48112	13.8%	2463	8.0%
Encanto Striated with Impressions	85	0.02%	4	0.01%
Cambio/Encanto	40667	11.7%	1570	5.1%
Cambio/Encanto with red or white slip	1173	0.3%	28	0.1%
Cambio w/impressed fillet w/red or white slip	1113	0.3%	36	0.1%
Cambio w/small impressions, no fillet	704	0.2%	28	0.1%
Encanto w/striated & impressed band	11	0.003%	1	0.003%
Cambio w/red slip	910	0.3%	15	0.05%
Cambio w/incision	43	0.01%	1	0.003%
Encanto with fine striations	1246	0.4%	58	0.2%
<i>Peten Gloss Ware</i>				
Nanzal Red	15	0.004%	1	0.003%
Infierno Black, Carmelita Incised, Chilar Fluted	1914	0.5%	165	0.5%
Saxche-Palmar Orange Polychrome	51882	14.9%	3295	10.7%
Tinaja Group Indeterminate	1233	0.4%	97	0.3%
Tinaja Red	1241	0.4%	74	0.2%
Subin Red	4931	1.4%	158	0.5%
Pantano Impressed	12996	3.7%	322	1.0%
Chaquiste Impressed	15308	4.4%	423	1.4%
Subin/Chaquiste	37645	10.8%	4491	14.6%
Tinaja/Pantano	85704	24.6%	14480	46.9%

Table 7.1. Continued.

Type	Weight		Frequency	
	g	%	#	%
Chaquiste Impressed, not stamped	107	0.03%	3	0.01%
Corozal Incised	685	0.2%	65	0.2%
Azote Orange, Torres Incised, Salada Fluted	384	0.1%	41	0.1%
late Late Classic (Tepeu 3: AD 760-830)				
<i>Uaxactun Unslipped Ware</i>				
Cambio w/impressed fillet (Manteca Impressed)	440	0.1%	11	0.04%
<i>Peten Gloss Ware</i>				
Zopilote Smudged	782	0.2%	16	0.1%
<i>Fine Gray Ware</i>				
Chablekal Gray	56	0.02%	13	0.04%
Chicxulub Incised	381	0.1%	51	0.2%
Telchac Composite	81	0.02%	15	0.05%
Chablekal Indeterminate	96	0.03%	17	0.1%
<i>Volcanic Ash Ware</i>				
Andres Red	395	0.1%	37	0.1%
Matu Incised	30	0.01%	3	0.01%
Volcanic ash/Indeterminate	129	0.04%	9	0.03%
<i>Unnamed Wares</i>				
"Fine" black, incised	17	0.005%	1	0.003%
Not dated				
<i>Unnamed Wares</i>				
Unnamed	758	0.2%	33	0.1%
White-slipped with striations	5	0.001%	1	0.003%
Impressed	23	0.01%	2	0.006%
Stuccoed	154	0.04%	28	0.1%
Micaceous paste	396	0.1%	40	0.1%
Compact, brown paste with brown slip	27	0.008%	1	0.003%
Orange paste, thin walled, red slip	33	0.009%	2	0.006%
Sandy paste	34	0.010%	6	0.02%
Compact, orange paste with no slip (100037)	211	0.1%	21	0.1%
Compact, orange paste with white slip (100038)	1247	0.4%	113	0.4%
Compact, orange paste w/white slip & incision/grooves (100039)	219	0.1%	15	0.05%
Light brown paste w/white slip ext/int (100040)	82	0.0%	11	0.0%
Light brown paste with white slip on exterior, smoked brown on interior (100041)	264	0.1%	28	0.1%
Light brown paste w/white slip & incision on ext smoked on interior (100042)	117	0.03%	11	0.04%
Uaxactun Indeterminate	240	0.1%	15	0.05%
Peten Gloss Indeterminate (Classic period)	650	0.2%	38	0.1%
Eroded	7615	2.2%	1237	4.0%
TOTAL	348064	100.0%	30847	100.0%

Table 7.2. Ceramic chronology for the Petexbatun area (adapted from Foias 1996: Table 9.1).

MAJOR PERIODS	TIME	PETEXBATUN	UAXACTUN	SEIBAL	TIKAL	BARTON RAMIE
LATE-MIDDLE POSTCLASSIC	1400					
	1300					LATE
EARLY POSTCLASSIC	1200					NEW TOWN
	1100	TAMARINDO			CABAN	EARLY
TERMINAL CLASSIC	1000					
	900	SEPENS		BAYAL	EZNAB	SPANISH LOOKOUT
LATE CLASSIC	800		TEPEU 3	TEPEJILOTE	IMIX	
	700	NACIMIENTO	TEPEU 2		IK	TIGER RUN
	600		TEPEU 1			
EARLY CLASSIC	500		TZAKOL 3	JUNCO	MANIK 3	HERMITAGE
	400	JORDAN	TZAKOL 2		MANIK 2	
	300		TZAKOL 1		MANIK 1	
PROTO CLASSIC	200			LATE	CIMI	FLORAL PARK
	100	FAISAN	CHICANEL	CANTUTSE	CAUAC	
LATE PRECLASSIC	A.D.					MOUNT HOPE
	B.C.			EARLY	CHUEN	BARTON CREEK
MIDDLE PRECLASSIC	200					
	300					
EARLY PRECLASSIC	400	EXCARVADO	MAMOM	ESCOBA	TZEC	LATE
	500					JENNEY CREEK
EARLY PRECLASSIC	600					
	700			REAL	EB	EARLY
	800					
	900					

Table 7.3. Ceramic frequencies by time period.

Type	Weight		Frequency	
	g	%	#	%
Late Preclassic	6056	1.7%	277	0.9%
Early Classic	10674	3.1%	539	1.7%
Late Classic (Tepeu 1-3)	317732	91.2%	28278	91.6%
Late Classic (Tepeu 3)	1967	0.6%	162	0.5%
Not dated	4460	1.3%	365	1.2%
Eroded	7615	2.2%	1237	4.0%
TOTAL	348504	100.0%	30858	100.0%

Table 7.4. Ceramic frequencies by area investigated.

Area	Weight		Frequency	
	g	%	#	%
Grieta Principal				
Hidden Jar Area	76008	21.8%	3664	11.9%
Two Owls Area	105698	30.3%	17460	56.6%
Southern Entrance Area	20071	5.8%	1440	4.7%
Chill Hill	86873	24.9%	4337	14.1%
Windy Valley	10562	3.0%	751	2.4%
Grieta Rincon				
The Cave	2138	0.6%	69	0.2%
The Grieta	47154	13.5%	3137	10.2%
TOTAL	348504	100.0%	30858	100.0%

Table 7.5. Spatial distribution of ceramic sherds.

Area	Weight		Frequency	
	g	%	#	%
Grieta Principal				
Hidden Jar Area (Op. 31A)	76008	21.8	3664	11.9
Slope between Inner/Outer Chambers (Units 2, 5)	2199	0.6	80	0.3
Inner Chamber (Units 1, 3, 4, 11, 12)	22638	6.5	1127	3.7
Outer Chamber (Units 9, 10, 14)	30947	8.9	1664	5.4
Altar-platform at entrance to Inner Chamber (Units 6, 13)	20224	5.8	793	2.6
Two Owls Area (Op. 31B)	105698	30.3	17460	56.6
Two Owls Chamber, general (Units 2, 3, 5, 13)	2033	0.6	115	0.4
Two Owls Chamber, Step 1 (Unit 8)	830	0.2	64	0.2
Two Owls Chamber, Wall 2 (Unit 9)	1845	0.5	157	0.5
Rocky Passage (Unit 4)	142	0.0	6	0.0
Passage 1, general (Unit 1)	2929	0.8	96	0.3
Passage 1, north end (Units 6, 10)	24927	7.2	1278	4.1
Passage 1, central activity area (Units 7, 11)	11124	3.2	640	2.1
Passage 1, south end (Unit 12)	19980	5.7	1187	3.8
South of Passage 1 (Unit 14)	41799	12.0	13915	45.1
Cave Under the Bridge (Unit 15)	89	0.0	2	0.0
Southern Entrance Area (Op. 31C)	20071	5.8	1440	4.7
Entrance Passage (Unit 1, 11)	975	0.3	45	0.1
Crawlway below Pozo (Unit 2)	82	0.0	5	0.0
Upper Chamber (Units 3, 6, 8, 9, 10)	15060	4.3	1159	3.8
Nasal Passage (Unit 4)	973	0.3	54	0.2
Passage 8 (Unit 5, 7)	2981	0.9	177	0.6
Chill Hill (Op. 31D)	86873	24.9	4337	14.1
Chamber 5 (Unit 1)	34980	10.0	1935	6.3
Inside cave (Units 2, 5)	37358	10.7	1523	4.9
Entrance to cave (Unit 6)	2298	0.7	243	0.8
West of cave (Units 3, 4)	6799	2.0	329	1.1
Possibly terraced hill (Units 8, 9)	4276	1.2	259	0.8
Northwest of cave, by Hobbit Alcove (Unit 7)	1162	0.3	48	0.2
Windy Valley (Op. 31E)	10562	3.0	751	2.4
Grieta Rincon				
The Cave (Op. 30A)	2138	0.6	69	0.2
Inside cave, general (Units 1, 2, 3)	1983	0.6	60	0.2
Inside cave, platform fill (Unit 5)	155	0.0	9	0.0
The Grieta (Op. 30B)	47154	13.5	3137	10.2
Outside cave, southwest of entrance (30B-1)	14273	4.1	1198	3.9
Outside cave, front of entrance (30B-4)	32581	9.3	1915	6.2
Outside cave, north of cave entrance (30B-2)	300	0.1	24	0.1
TOTAL	348504	100%	30858	100%

Table 7.6. Vessel forms of Late Classic ceramics by area. Numbers represent weight of sherds in grams (numbers in parentheses represent frequency).

		Platter	Bowl	Vase	Jar	Drum	Pitcher	Incensario	Unid	Total	
Grieta Principal	Hidden Jar Area	Slope between Inner/Outer Chambers (U2, 5)	369(11)	323(12)	24(1)	1342(47)	34(1)	0(0)	0(0)	39(6)	2131(78)
		Inner Chamber (U1, 3, 4, 11, 12)	476(15)	3751(161)	105(6)	17286(805)	77(5)	0(0)	59(1)	502(50)	22256(1043)
		Outer Chamber (U9, 10, 14)	2461(81)	5559(259)	142(13)	15080(757)	0(0)	0(0)	0(0)	584(62)	23826(1172)
		Altar-platform at entrance (U6, 13)	2117(135)	2177(94)	73(3)	10733(368)	44(1)	27(1)	0(0)	37(8)	15208(610)
	Two Owls Area	Two Owls Chamber, general (U2, 3, 5, 13)	21(1)	673(36)	0(0)	1233(62)	0(0)	0(0)	0(0)	60(11)	1987(110)
		Two Owls Chamber, Step 1 (U8)	39(4)	303(24)	0(0)	406(25)	0(0)	0(0)	0(0)	33(6)	781(59)
		Two Owls Chamber, Wall 2 (U9)	32(3)	308(43)	0(0)	416(41)	0(0)	0(0)	0(0)	13(5)	769(92)
		Rocky Passage (U4)	0(0)	20(1)	0(0)	75(4)	47(1)	0(0)	0(0)	0(0)	142(6)
		Passage 1, general (U1)	20(2)	503(10)	63(2)	1469(49)	9(1)	0(0)	0(0)	303(19)	2367(83)
		Passage 1, construction fill in west (U6 -west, 7-west, 11)	2392(97)	4636(219)	223(5)	12246(530)	380(35)	0(0)	0(0)	1741(107)	21618(1003)
		Passage 1, north end-east (U6-east, 10)	476(37)	1753(99)	46(5)	3246(212)	49(3)	0(0)	3(1)	449(34)	6022(391)
		Passage 1, central (11-1-3, U7-east)	10(1)	882(113)	0(0)	6150(275)	0(0)	0(0)	4(1)	515(49)	7561(439)
Passage 1, south end (U12)	2252(128)	6499(281)	328(36)	9765(569)	161(13)	0(0)	0(0)	782(101)	19787(1128)		
South of Passage 1 (U14)	5232(234)	8055(3118)	423(35)	23685(10223)	530(39)	0(0)	0(0)	3243(216)	41168(13865)		
Cave Under the Bridge (U15)	0(0)	0(0)	76(1)	13(1)	0(0)	0(0)	0(0)	0(0)	89(2)		
Southern Entrance Area	Entrance Passage (U1, 11)	0	82(5)	0(0)	494(25)	0	0	0	0	576(30)	
	Crawlway below Pozo (U2)	0	0	57(4)	25(1)	0	0	0	0	82(5)	
	Upper Chamber (U3, 6, 8, 9, 10)	388(14)	4198(276)	1024(54)	7637(566)	164(12)	0	0	252(41)	13663(963)	
	Nasal Passage (U4)	108(5)	256(12)	0(0)	503(27)	0	0	0	71(7)	938(51)	
	Passage 8 (U5, 7)	44(1)	808(77)	0(0)	1699(74)	0	0	0	4(1)	2555(153)	

Table 7.6. Continued.

		Platter	Bowl	Vase	Jar	Drum	Pitcher	Inven sario	Unid	Total	
Chill Hill	Chamber 5 (U1)	5839 (166)	9320 (377)	430 (33)	15135 (863)	117 (7)	0	61 (1)	1951 (256)	32870 (1704)	
	Inside cave (U2, 5)	3524 (104)	6721 (224)	548 (25)	22920 (866)	107 (5)	165 (8)	99 (3)	2328 (196)	36412 (1431)	
	Ent to cave (U6)	83(6)	623 (43)	49 (6)	1188 (136)	0	0	0	268(34)	2211 (225)	
	West of cave (U3, 4)	278(22)	1912 (61)	18 (3)	4295 (198)	109 (9)	9(1)	0	160(32)	6781 (326)	
	Possibly terraced hill (U8, 9)	484(17)	1065 (50)	36 (2)	1955 (127)	18 (1)	0	0	578(44)	4136 (241)	
	Northwest of cave, (U7)	170(8)	340(10)	0	520	0	0	0	132(6)	1162 (48)	
W i n d y	Passage 9 (U1)	549(31)	3120 (212)	340 (21)	4672 (311)	57(4)	0(0)	4(1)	1046 (114)	9788 (694)	
Grieta Rincón	The Cave										
		Inside cave, general (U1, 2, 3, 5)	0	14(1)	0	1322 (31)	0(0)	0(0)	0(0)	139(4)	1475 (36)
		Inside cave, platform fill (5-1-2)	0	0	0	0	0	0	0	1(0)	2(0)
	The Grieta	Outside cave, SW of entrance (U1)	135(4)	2287 (98)	0(0)	10785 (794)	23(2)	0	0	324(43)	13554 (941)
	Outside cave, front of entrance (U4)	1626 (69)	4582 (204)	42 (5)	24532 (1478)	0	0	0	638(67)	31420 (1823)	
	Outside cave, north of entrance (U2)	0	26(3)	0	126(11)	0	1(1)	0	98(3)	251 (18)	
TOTAL		29125 (1196)	70796 (6123)	4047 (270)	201130 (19504)	1926 (139)	202 (11)	230 (8)	16291 (1522)	323765 (28774)	

Table 7.7. Vessel forms of Early Classic ceramics by area. Numbers represent weight of sherds in grams (numbers in parentheses represent frequency).

			Platters	Bowls	Vases	Jars	Unid	Total
Grieta Principal	Hidden Jar Area	Slope betw Chambers (U2, 5)	0	0	0	0	0	0
		InnerChamber (U1,3,4,11,12)	419(13)	90(3)	0	278(31)	0	787(47)
		Outer Chamber (U9, 10, 14)	275(6)	170(5)	0	3134(191)	51(5)	3630(207)
		Altar-platform (U6, 13)	89(2)	0	0	802(38)	0	891(40)
	Two Owls Area	Chamber 1, general (U2,3,5,13)	0	0	0	0	0	0
		Chamber 1, Step 1 (U8)	0	0	0	0	0	0
		Chamber 1, Wall 2 (U9)	27(3)	0	0	548(21)	0	575(24)
		Rocky Passage (U4)	0	0	0	0	0	0
		Passage 1, general (U1)	0	0	0	0	0	0
		Passage 1, construction fill in west (U6-west, 7-west, 11)	174(11)	26(3)	25(2)	197(2)	8(1)	430(19)
		Passage 1, north end-east (U6-east, 10)	0	0	0	0	0	0
		Passage 1, central area (11-1-3, U7-east)	0	0	67(14)	418(15)	2(1)	487(30)
		Passage 1, south end (U12)	0	0	0	0	0	0
	South of Passage 1 (U14)	0	16(1)	0	54(1)	0	70(2)	
	Cave Under the Bridge (U15)	0	0	0	0	0	0	
	Southern Entrance Area	Entrance Passage (U1, 11)	0	0	0	0	0	0
		Crawlway below Pozo (U2)	0	0	0	0	0	0
		Upper Chamber (U3,6, 8, 9, 10)	0	0	0	991(70)	4(1)	995(71)
		Nasal Passage (U4)	0	0	0	0	0	0
		Passage 8 (U5, 7)	0	0	0	393(17)	0	393(17)
Chill Hill	Chamber 5 (U1)	0	0	0	968(24)	0	968(24)	
	Inside cave (U2, 5)	0	28(2)	0	0	0	28(2)	
	Entrance to cave (U6)	0	3(1)	0	0	0	3(1)	
	West of cave (U3, 4)	0	0	0	0	0	0	
	Possibly terraced hill (U8, 9)	0	0	0	0	0	0	
Northwest of cave, by Hobbit Alcove (U7)	0	0	0	0	0	0		
Windy	Passage 9 (U1)	154(9)	0	0	260(14)	6(1)	420(24)	
Grieta Rincon	The Cave	Inside cave, general (U1,2,3,5)	0	0	0	0	0	0
		Inside cave, platform fill (5-1-2)	0	0	0	0	29(1)	29(1)
	The Grieta	Outside cave, SW of ent (U1)	0	283(12)	0	154(15)	0	437(27)
		Outside cave, front of ent (U4)	278(8)	0	0	460(12)	24(1)	762(21)
		Outside cave, N of ent (U2)	0	0	0	0	25(1)	25(1)
TOTAL			1416 (52)	616 (27)	92 (16)	8657 (451)	149 (12)	10930 (558)

Table 7.8. Vessel forms of Prelassic ceramics by area. Numbers represent weight of sherds in grams (numbers in parentheses represent frequency).

		Platters	Bowls	Jars	Drums	Unid	Total	
Grieta Principal	Hidden Jar Area	Slope betw Chambers (U2, 5)	0	0	0	0	0	0
		Inner Chamber (U1,3,4,11,12)	0	278(18)	0	0	46(4)	324(22)
		Outer Chamber (U9, 10, 14)	0	1104(61)	91(4)	0	39(4)	1234(69)
		Altar-platform at ent (U6, 13)	0	1157(36)	1640(63)	0	0	2797(99)
	Two Owls Area	Two Owls Chamber, general (U2, 3, 5, 13)	0	41(4)	0	0	0	41(4)
		Chamber 1, Step 1 (U8)	0	0	0	0	0	0
		Chamber 1, Wall 2 (U9)	0	0	199(2)	0	9(1)	208(3)
		Rocky Passage (U4)	0	0	0	0	0	0
		Passage 1, general (U1)	0	0	0	0	0	0
		Passage 1, construction fill in west (U6-west, 7-west, 11)	0	46(3)	9(1)	0	49(4)	104(8)
		Passage 1, north end-east (U6-east, 10)	0	0(0)	0	0	0	0
		Passage 1, central area (11-1-3, U7-east)	0	40(4)	0	0	2(1)	42(5)
		Passage 1, south end (U12)	0	0	0	0	0	0
		South of Passage 1 (U14)	0	0	0	0	18(2)	18(2)
	Cave Under the Bridge (U15)	0	0	0	0	0	0	
	Southern Entrance Area	Entrance Passage (U1, 11)	0	0	0	0	0	0
		Crawlway below Pozo (U2)	0	0	0	0	0	0
		Upper Chamber (U3,6,8,9,10)	0	0	0	137(3)	9(1)	146(4)
		Nasal Passage (U4)	0	0	0	0	0	0
		Passage 8 (U5, 7)	0	0	0	0	0	0
	Chill Hill	Chamber 5 (U1)	0	14(1)	0	0	35(1)	49(2)
		Inside cave (U2, 5)	0	0	0	0	0	0
		Entrance to cave (U6)	0	0	0	0	0	0
		West of cave (U3, 4)	0	0	0	0	0	0
		Possibly terraced hill (U8, 9)	0	0	0	0	16(1)	16(1)
	NW of cave, by Hobbit Alcove (U7)	0	0	0	0	0	0	
	Windy V	Passage 9 (U1)	0	11(1)	0	0	164(11)	175(12)
	Grieta Rincon	The Cave	Inside cave, general (U1,2,3,5)	0	0	0	0	14(3)
Inside cave, platform fill (5-1-2)			0	0	40(1)	0	57(3)	97(4)
The Grieta		Outside cave, SW of ent (U1)	0	0	0	0	0	0
		Outside cave, front of ent (U4)	52(1)	9(1)	0	0	12(1)	73(3)
		Outside cave, N of ent (U2)	0	0	0	0	0	0
TOTAL		52 (1)	2700 (129)	1979 (71)	137 (3)	470 (37)	5338 (241)	

Table 7.9. List of partial and whole vessels.

	Ceramic No.	Lot	Type	Form	% of vessel	Wt (g)	Notes
Hidden Jar Area	804088	AG31A-3-0-1	Pantano Impressed	Jar	50%	1069	Kill hole
	905355	AG31A-9-2-1	Compact, orange paste with white slip (100038)	Bowl	66%	313	
	905194	AG31A-11-1-2	Infierno Black	Bowl	40%	331	
	905190, 214	AG31A-11-1-2, 11-2-1	Tinaja Red	Jar	33%	284	
	905219	AG31A-11-2-2	Quintal Unslipped	Jar	20%	126	90% rim/neck/shoulder
	905201, 315	AG31A-11-2-1, 12-2-2	Dos Arroyos Orange Polychrome	Plate	25%	572	
	905236	AG31A-12-1-1	Cambio Unslipped	Bowl	20%	26	Miniature
	905284	AG31A-12-2-1	Saxche-Palmar Orange Polychrome	Bowl	40%	74	
	905096, 174	AG31A-13-3-4, 13-3-1	Saxche-Palmar Orange Polychrome	Bowl	25%	203	
	905091	AG31A-13-3-4	Tinaja/Pantano	Jar	20%	n/a	100% base
	905091	AG31A-13-3-4	Tinaja/Pantano	Jar	20%	n/a	100% base
Two Owls Area	804198,206, 208, 230, 243,244, 250,282,685	AG31B-7-1-1, 7-2-3, 7-2-4, 7-4-4, 7-5-3, 7-5-4, 11-1-3, 14-2-1	Delirio Plano-relief	Bowl/Vase	20%	261.5	32 sherds total, 5 basal sherds from 11-1-3, 1 from 14-2-1
	804191, 176	AG31B-8-2-1, 8-1-1	Saxche-Palmar Orange Polychrome	Bowl	40%	186	
	905648, 804615	AG31B-11-1-3, 11-1-1	Saxche-Palmar Orange Polychrome	Bowl	25%	509	
	905624	AG31B-14-2-1	Cambio Unslipped	Bowl	20%	32	Miniature
	905626	AG31B-14-2-1	Pantano Impressed	Jar	25%	15	Miniature
Southern Entrance Area	804106	AG31C-3-0-2	Pantano Impressed	Jar	100%	76	Miniature
	804109, 905470	AG31C-3-0-3, 10-1-1	Carmelita Incised	Vase	40%	193	
	905480, 477, 471, 478	AG31C-10-1-2, 10-1-1	Unnamed; Red, white, orange slipped and fluted (100000)	Globular vase	75%	572	
	905468, 479, 804102	AG31C-10-1-2, 10-1-1, 3-0-1	Infierno Black	Bowl	25%	227	
	905911	AG31C-7-1-1	Saxche-Palmar Orange Polychrome	Bowl	50%	305	
	905912	AG31C-7-1-1	Saxche-Palmar Orange Polychrome	Bowl	40%	326	

Table 7.9. Continued.

	Ceramic No.	Lot	Type	Form	% of vessel	Wt (g)	Notes
Chill Hill	804709	AG31D-1-3-1	Saxche-Palmar Orange Polychrome	Plate	25%	757	
	804743	AG31D-1-4-1	Tinaja/Pantano	Jar	25%	n/a	Miniature; 95% base
	804743	AG31D-1-4-1	Tinaja/Pantano	Jar	25%	n/a	Miniature; 100% base
	804825	AG31D-1-4-2	Saxche-Palmar Orange Polychrome	Plate	25%	1915	
	804820	AG31D-1-5-1	Pantano Impressed	Jar	15%	n/a	Complete neck/shoulder
	804820	AG31D-1-5-1	Pantano Impressed	Jar	15%	n/a	Complete neck/shoulder
	804888	AG31D-1-5-2	Compact, orange paste with white slip (100038)	Bowl	95%	179	
	804969	AG31D-1-5-3	Saxche-Palmar Orange Polychrome	Bowl	20%	270	Kill hole
	804828	AG31D-1-6-1	Pantano Impressed	Jar	15%	622	Complete neck/shoulder
	804832	AG31D-1-6-1	Infierno Black	Bowl	50%	30	
	804884	AG31D-1-6-1	Saxche-Palmar Orange Polychrome	Plate	20%	364	Kill hole
	804887	AG31D-1-6-1	Compact, orange paste with white slip (100038)	Bowl	33%	55	
	804889, 965	AG31D-1-7-1, 1-6-1	Triunfo Striated	Jar	20%	968	
	Windy V	905961	AG31E-1-3-2	Saxche-Palmar Orange Polychrome	Vase	25%	169
Grieta Rincon	905537, 547,561,586	AG30B-4-2-6, 4-2-5, 4-2-4, 4-2-1	Encanto Striated	Jar	20%?	n/a	
	905294	AG30B-4-2-14	Saxche-Palmar Orange Polychrome	Bowl	20%	82	
	905249, 542	AG30B-4-2-1, 4-2-16	Saxche-Palmar Orange Polychrome	Plate	20%	310	

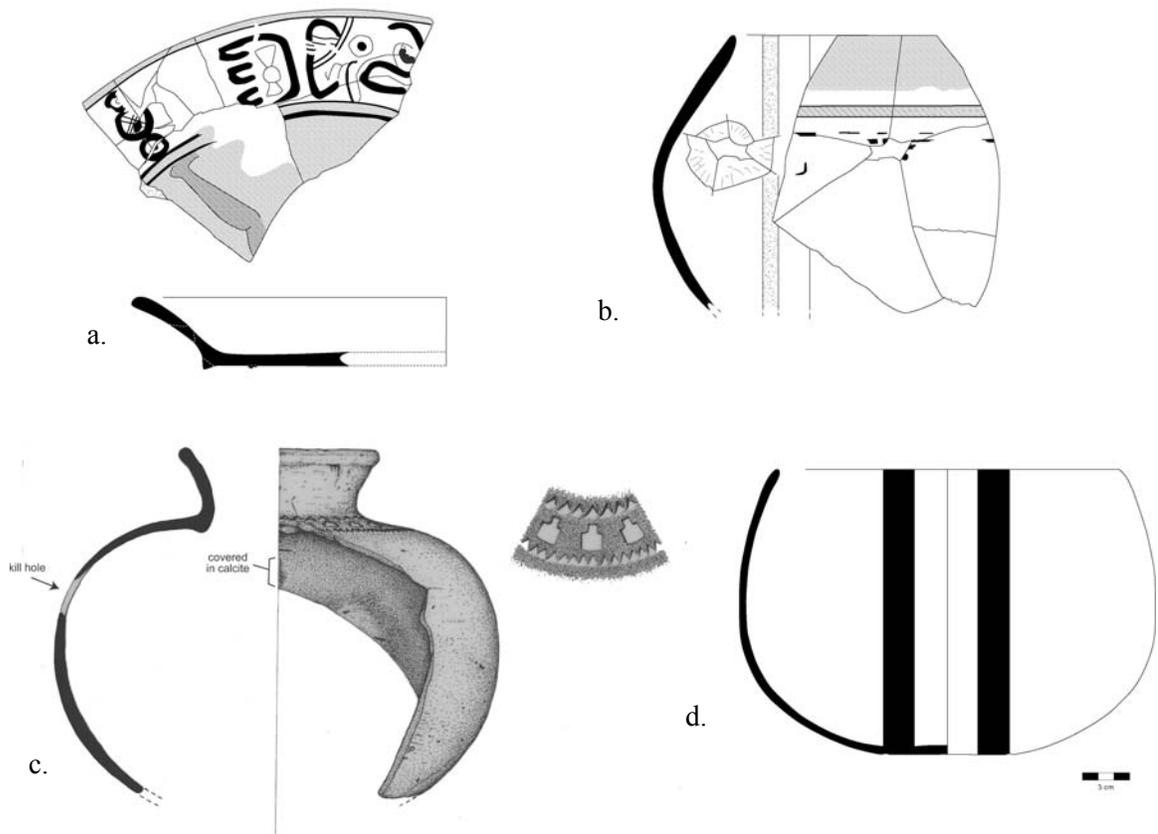


Figure 7.1. Partial vessels. a. Saxche-Palmar Orange Polychrome plate, AG31D-1-6-1, CR#804884; b. Saxche-Palmar Orange Polychrome bowl, AG31D-1-5-3, CR#804969; c. Pantano Impressed jar, AG31A-3-0-1, CR#804088; d. Infierno Black bowl, AG31A-11-1-2, CR#905194. Note kill hole in a-c. Drawing of c by Hiro Iwamoto.

Table 7.10. List of sherds of miniature vessels.

Ceramic No.	Lot No.	Type	Form	Dim (cm)	Wt (g)	Freq	Rim	Base
905236	AG31A-12-1-1	Cambio Unslipped	Bowl	Rim d = 8	26	1	1	0
905100	AG31A-13-3-3	Tinaja/Pantano	Jar	n/a	43	1	1	0
905828	AG31A-14-4-2	Subin/Chaquiste	Bowl	n/a	n/a	1	0	1
906031	AG31B-6-3-1	Cambio/Indeterminate	Open form	n/a	1	1	0	1
804199	AG31B-7-1-1	Tinaja Red	Jar	Neck d = 4	2	1	0	0
804603	AG31B-9-5-1	Tinaja/Pantano	Jar	n/a	3	1	1	0
804571	AG31B-10-1-1	Saxche-Palmar	Unid	n/a	3	2	1	0
804583	AG31B-10-1-1	Cambio/Indeterminate	Candelero?	n/a	3	1	0	0
804584	AG31B-10-1-1	Tinaja/Pantano	Jar	n/a	21	1	0	1
804628	AG31B-11-1-3	Cambio Unslipped	Candelero	Body d = 3.5	4	1	0	0
905687	AG31B-12-1-1	Tinaja/Pantano	Jar	n/a	18	1	0	0
905626	AG31B-14-2-1	Pantano Impressed	Jar	n/a	15	2	0	2
905624	AG31B-14-2-1	Cambio Unslipped	Bowl	Rim d = 9	32	2	1	0
804106	AG31C-3-0-2	Pantano Impressed	Jar	n/a	76	1	1	1
905773	AG31C-8-1-1	Tinaja/Pantano	Jar	n/a	2	1	0	0
905778	AG31C-8-1-1	Micaceous paste (code 100028)	Jar	n/a	9	1	1	1
905769	AG31C-9-1-1	Infierno Black	Unid	n/a	5	1	1	0
804614	AG31D-1-1-1	Tinaja/Pantano	Jar	n/a	6	1	1	0
804696	AG31D-1-3-1	Pantano Impressed	Jar	Rim d = 4	15	1	1	0
804743	AG31D-1-4-1	Tinaja/Pantano	Jar	n/a	36	2	0	2
804743	AG31D-1-4-1	Tinaja/Pantano	Jar	Base d = 1.8	36	2	0	2
804761	AG31D-1-4-1	Tinaja Red	Bowl	Rim d = 8	4	1	1	0
804832	AG31D-1-6-1	Infierno Black	Bowl	Rim d = 7	30	1	1	1
804833	AG31D-1-6-1	Pantano Impressed	Jar	Base d = 3.8	26	1	0	1
905714	AG30B-1-2-1	Subin/Chaquiste	Bowl	n/a	6	1	1	0
905719	AG30B-1-2-1	Cambio Unslipped	Bowl?	Rim d = 7	5	1	1	0
905540	AG30B-4-2-6	Tinaja/Indeterminate	Bowl	Rim d = 5	7	1	1	0

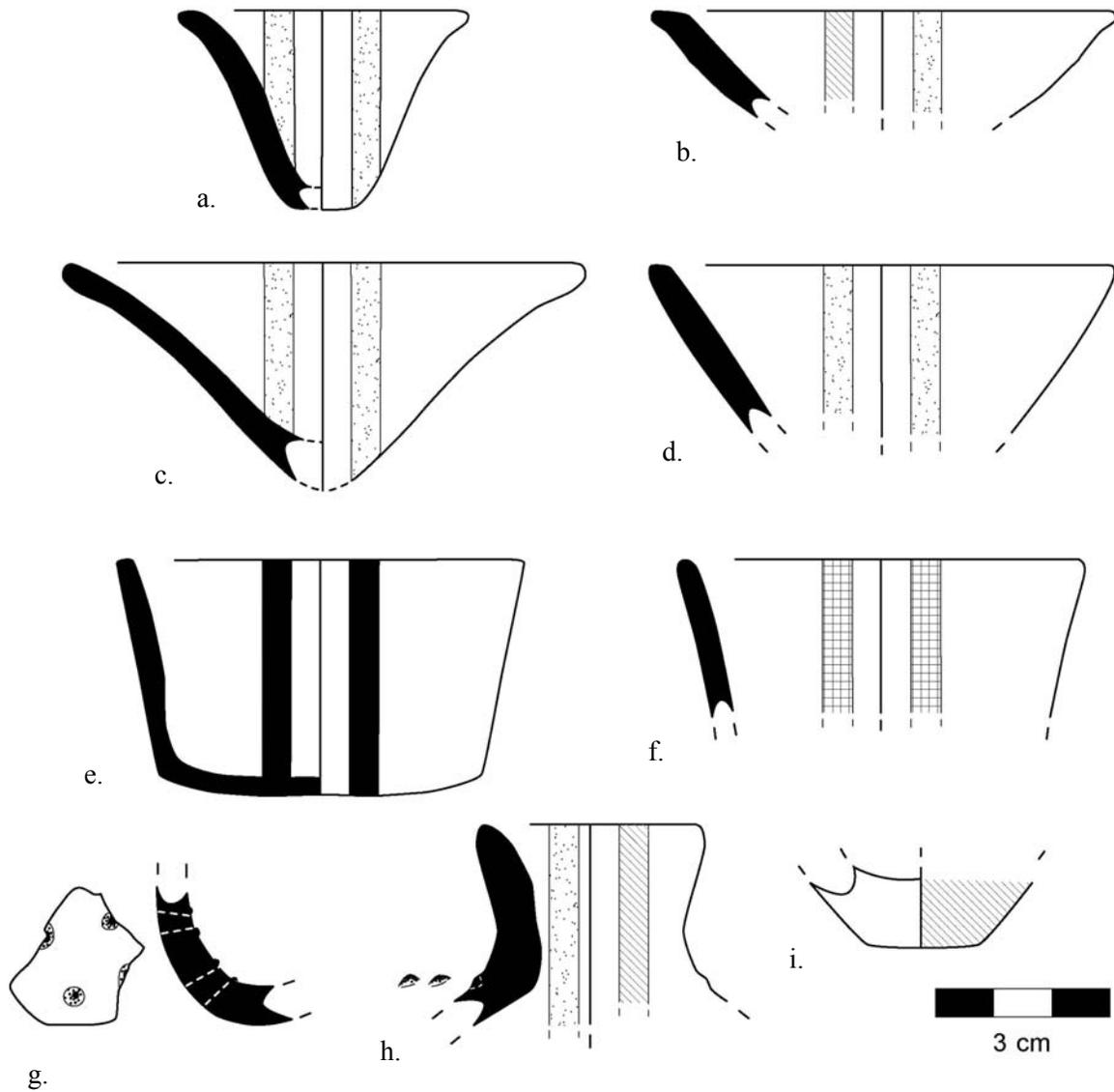


Figure 7.2. Line drawings of miniature vessels. a-d: bowls with outflared sides; e-f: bowls with slightly outflaring sides; g: candelero; h-i: water jars. (a. identified as Tinaja Group based on paste but has no slip, AG30B-4-2-6, CR#905540; b. Tinaja Red, AG31D-1-4-1, CR#804761; c. Cambio Unslipped, AG#1B-14-2-1, CR#905624; d. Cambio Unslipped, AG31A-12-1-1, CR#905236; e. Infierno Black, AG31D-1-6-1, CR#804832; f. Cambio Unslipped, surfaces are smudged (?) brown, AG30B-1-2-1, CR#905719; g. Cambio Goup, AG31B-11-1-3, CR#804628; h. Pantano Impressed, AG31D-1-3-1, CR#804696; i. Tinaja/Pantano, AG31D-1-4-1, CR#804743).

Table 7.11. Spatial distribution of late Nacimiento phase type: Chablekal Gray.

Area	Weight		Frequency	
	g	%	#	%
Grieta Principal				
Hidden Jar Area (Op. 31A)	18	2.9%	3	3.1%
Slope between Inner/Outer Chambers (U2, 5)				
Inner Chamber (Units 1, 3, 4, 11, 12)				
Outer Chamber (Units 9, 10, 14)	18		3	
Altar-platform at entrance to Inner Chamber (U6, 13)				
Two Owls Area (Op. 31B)	360	58.6%	50	52.1%
Two Owls Chamber, general (U2, 3, 5, 13)				
Two Owls Chamber, Step 1 (Unit 8)				
Two Owls Chamber, Wall 2 (Unit 9)				
Rocky Passage (Unit 4)				

Passage 1, general (Unit 1)				
Passage 1, north end (Units 6, 10)	5		2	
Passage 1, central activity area (Units 7, 11)				
Passage 1, south end (Unit 12)	118		10	

South of Passage 1 (Unit 14)	237		38	
Cave Under the Bridge (Unit 15)				
Southern Entrance Area (Op. 31C)	12	2.0%	3	3.1%
Entrance Passage (Unit 1, 11)				
Crawlway below Pozo (Unit 2)				
Upper Chamber (Units 3, 6, 8, 9, 10)	12		3	
Nasal Passage (Unit 4)				
Passage 8 (Unit 5, 7)				
Chill Hill (Op. 31D)	216	35.2%	37	38.5%
Chamber 5 (Unit 1)	83		13	

Inside cave (Units 2, 5)	78		15	
Entrance to cave (Unit 6)	9		3	

West of cave (Units 3, 4)	46		6	
Possibly terraced hill (Units 8, 9)				
Northwest of cave, by Hobbit Alcove (U7)				
Windy Valley (Op. 31E)	4	0.7%	1	1.0%
Grieta Rincon				
The Cave (Op. 30A)	0	0%	0	0%
Inside cave, general (Units 1, 2, 3)				
Inside cave, platform fill (Unit 5)				
The Grieta (Op. 30B)	4	0.7%	2	2.1%
Outside cave, southwest of entrance (30B-1)				
Outside cave, front of entrance (30B-4)	4		2	
Outside cave, north of cave entrance (30B-2)				
TOTAL	614	100%	96	100%

Table 7.12. Spatial distribution of late Nacimiento phase type: Zopilote Smudged.

Area	Weight		Frequency	
	g	%	#	%
Grieta Principal				
Hidden Jar Area (Op. 31A) Slope between Inner/Outer Chambers (U2, 5) Inner Chamber (Units 1, 3, 4, 11, 12) Outer Chamber (Units 9, 10, 14) Altar-platform at entrance to Inner Chamber (U6, 13)	0	0%	0	0%
Two Owls Area (Op. 31B) Two Owls Chamber, general (U2, 3, 5, 13) Two Owls Chamber, Step 1 (Unit 8) Two Owls Chamber, Wall 2 (Unit 9) Rocky Passage (Unit 4) Passage 1, general (Unit 1) Passage 1, north end (Units 6, 10) Passage 1, central activity area (Units 7, 11) Passage 1, south end (Unit 12) South of Passage 1 (Unit 14) Cave Under the Bridge (Unit 15)	578	73.9%	11	68.6%
Southern Entrance Area (Op. 31C) Entrance Passage (Unit 1, 11) Crawlway below Pozo (Unit 2) Upper Chamber (Units 3, 6, 8, 9, 10) Nasal Passage (Unit 4) Passage 8 (Unit 5, 7)	56	7.2%	1	6.3%
Chill Hill (Op. 31D) Chamber 5 (Unit 1) Inside cave (Units 2, 5) Entrance to cave (Unit 6) West of cave (Units 3, 4) Possibly terraced hill (Units 8, 9) Northwest of cave, by Hobbit Alcove (U7)	106	13.6%	2	12.5%
Windy Valley (Op. 31E)	0	0%	0	0%
Grieta Rincon				
The Cave (Op. 30A) Inside cave, general (Units 1, 2, 3) Inside cave, platform fill (Unit 5)	0	0%	0	0%
The Grieta (Op. 30B) Outside cave, southwest of entrance (30B-1) Outside cave, front of entrance (30B-4) Outside cave, north of cave entrance (30B-2)	42	5.4%	2	12.5%
TOTAL	782	100%	16	100%

Table 7.13. Spatial distribution of late Nacimiento phase type: Andres Red.

Area	Weight		Frequency	
	g	%	#	%
Grieta Principal				
Hidden Jar Area (Op. 31A)	62	11.3%	3	6.3%
Slope between Inner/Outer Chambers (U2, 5)				
Inner Chamber (Units 1, 3, 4, 11, 12)				
Outer Chamber (Units 9, 10, 14)	4		1	
Altar-platform at entrance to Inner Chamber (U6, 13)	58		2	
Two Owls Area (Op. 31B)	282	51.3%	24	50.0%
Two Owls Chamber, general (U2, 3, 5, 13)				
Two Owls Chamber, Step 1 (Unit 8)				
Two Owls Chamber, Wall 2 (Unit 9)				
Rocky Passage (Unit 4)				
Passage 1, general (Unit 1)				
Passage 1, north end (Units 6, 10)	126		11	
Passage 1, central activity area (Units 7, 11)	13		1	
Passage 1, south end (Unit 12)				
South of Passage 1 (Unit 14)	143		12	
Cave Under the Bridge (Unit 15)				
Southern Entrance Area (Op. 31C)	79	14.4%	5	10.4%
Entrance Passage (Unit 1, 11)	56		3	
Crawlway below Pozo (Unit 2)				
Upper Chamber (Units 3, 6, 8, 9, 10)	23		2	
Nasal Passage (Unit 4)				
Passage 8 (Unit 5, 7)				
Chill Hill (Op. 31D)	37	6.7%	3	6.3%
Chamber 5 (Unit 1)				
Inside cave (Units 2, 5)	37		3	
Entrance to cave (Unit 6)				
West of cave (Units 3, 4)				
Possibly terraced hill (Units 8, 9)				
Northwest of cave, by Hobbit Alcove (U7)				
Windy Valley (Op. 31E)	67	12.2%	12	25.0%
Grieta Rincon				
The Cave (Op. 30A)	23	4.2%	1	2.1%
Inside cave, general (Units 1, 2, 3)	23		1	
Inside cave, platform fill (Unit 5)				
The Grieta (Op. 30B)	0	0%	0	0%
Outside cave, southwest of entrance (30B-1)				
Outside cave, front of entrance (30B-4)				
Outside cave, north of cave entrance (30B-2)				
TOTAL	550	100%	48	100%

Table 7.14. Reworked ceramic sherds from the Grieta Principal and Grieta Rincón.

Artif No.	Lot No.	Description	Original Vessel Type and Form	C/F	Wt (g)	Diam (cm)	Thick (cm)	Hole Diam (cm)
160	AG31C-8-2-1	perforated, non-discoid form	Subin Red bowl	F	3.0	n/a	0.4-0.8	0.8
132	AG31D-1-5-1	sherd disk with biconically drilled perforation	Tinaja Red or Pantano Impressed jar	F	32.0	6.7	0.9	0.7
302	AG31B-10-1-1	sherd disk with biconically drilled perforation; notched	Flor Crema jar (?)	C	3.0	2.8-3.2	0.4	0.6
200	AG30B-4-2-2	sherd disk with biconically drilled perforation	Tinaja Red or Pantano Impressed jar	F	10.0	5.1	0.5	0.8
166	AG31A-12-2-2	sherd disk with biconically drilled perforation	Saxche-Palmar Polychrome bowl or plate	C	5.0	2.6-3.0	0.8	0.5
128	AG31A-9-2-1	sherd disk with perforation	Tinaja Red or Pantano Impressed jar	C	8.0	4.4-4.6	0.4	0.9
139	AG31B-6-3-1	sherd disk, no perforation	Tinaja Red or Pantano Impressed jar base	C	52.0	6.5-6.8	0.5-1.0	0
407	AG31B-14-2-1	sherd disk, no perforation	Tinaja Red or Pantano Impressed jar	F	30.0	≈9	0.7-0.9	0
119	AG31A-4-0-1	double-notched rectangular sherd	Red-slipped Peten Gloss, Early Classic (?) type	C	81.0	10.2 (length)	1.1	4.9 (width)
281	AG31B-6-4-1	single-notched sherd, no perforation	Saxche-Palmar Polychrome (?), form unidentified	C	8.0	2.5-3.1	0.7	0
104	AG31C-3-0-1	single-notched sherd, no perforation	Tinaja Red or Pantano Impressed jar	C	16.0	4.4	0.4-0.8	0
409	AG31B-14-2-1	mirror back fragment	Saxche-Palmar Polychrome plate (?)	F	31.0	12	0.4-0.7	0

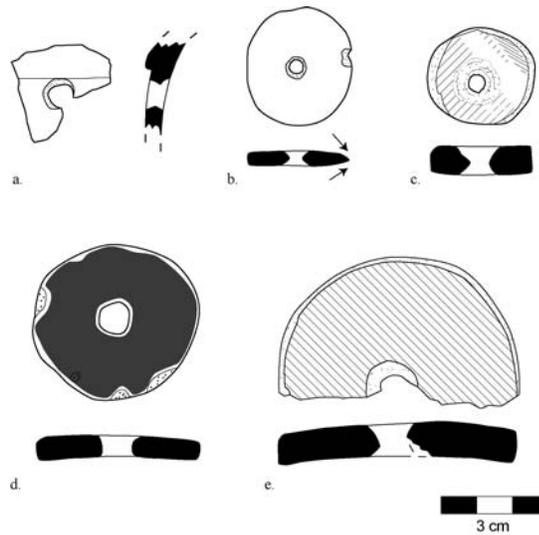


Figure 7.3. Reworked perforated ceramic sherds: a. non-discoid perforated sherd (#160 AG31C-8-2-1); b-e. perforated disks (b. #302 AG31B-10-1-1; c. #166 AG31A-12-2-2; d. #128 AG31A-9-1-2; e. #132 AG31D-1-5-1).

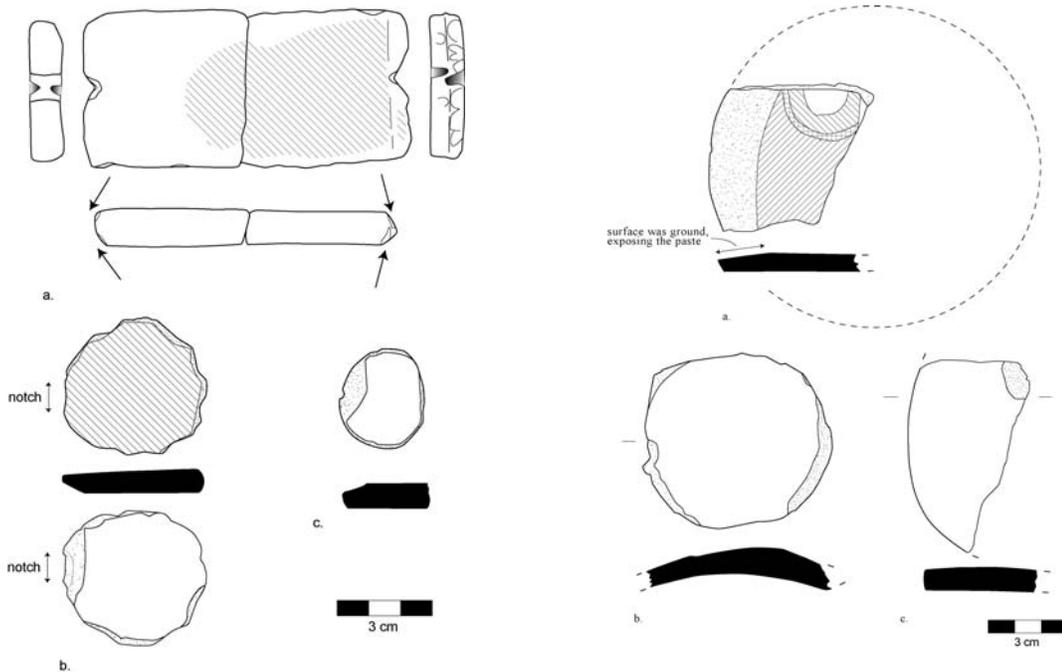


Figure 7.4. Notched ceramic sherds: a. #119 AG31A-4-0-1; b. #104 AG31C-3-0-1; c. #281 AG31B-6-4-1.

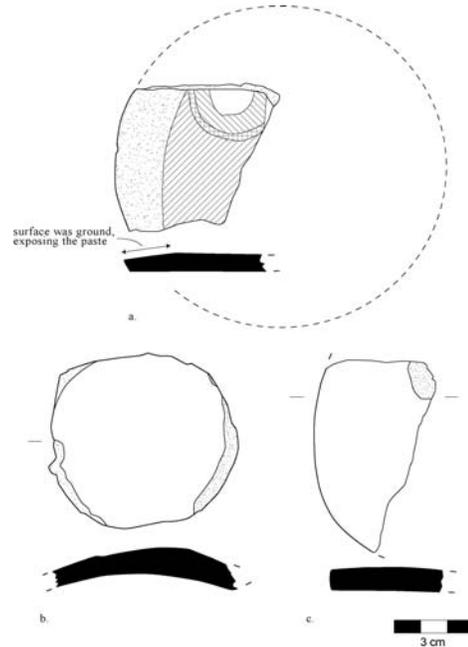


Figure 7.5. Reworked sherd disks with no perforations: a. possible mirror back fragment (#409 AG31B-14-2-1); b. #139 AG31B-6-3-1; c. #407 AG31B-14-2-1.

Table 7.15. Figurines classified by function.

Function	Freq
1 Figurine (not flute or whistle)	7
2 Flute (long musical instrument)	10
3 Whistle (round musical instrument with a simple resonator)	25
4 Curled whistle (round musical instrument with a complex shaped resonator)	0
5 Other type of whistle	0
6 Whistle, type unknown (for small fragments)	0
7 Hollow head figurine	2
10 Mold, unclear	0
11 Mold for figurine	0
12 Mold for flute	0
13 Mold for whistle	0
14 Figurine or whistle	73
15 Whistle with multiple resonators (3 is most common)	3
16 Pendant	0
17 Vessel shape	0
18 Bell (usually associated with 19)	0
19 Clapper (usually associated with 18)	0
99 Unclear	88
	208

Table 7.16. Figurines classified by shape.

Shape	Freq
100 Anthropomorphic, unclear	17
101 Male, unclear	6
110 Male with simple clothes (upper body naked)	1
111 Male with a fat-man mask	1
112 Male with a monkey mask	0
113 Male with a grotesque-face mask	1
114 Male with a headdress	0
120 Male with noble attire, not warrior	0
130 Warrior, unclear	13
144 Warrior with fat-man mask	1
150 Warrior with a headdress	0
154 Warrior with bird headdress	1
160 Female, unclear	7
161 Female with headdress	1
165 Female with noble attire	1
170 Adult and child, unclear	0
171 Male and child	0
172 Female and child	1
173 Female holding idol/doll/figurine	1
180 Human with bird mask	1
200 Half-animal person or deity	0
300 Zoomorphic, unclear	7
310 Bird, unclear	4
311 Owl	4
312 Other bird	0
320 Monkey	1
330 Dog	0
340 Bat	1
350 Deer	0
360 Feline	0
370 Frog	0
380 Rodent, unclear	0
390 Reptile, unclear	0
400 Deity, unclear	0
500 Grotesque head or monster	3
510 Fat man	3
515 Ball player	1
520 Old man	2
600 Plant	0
800 Geometric form	0
810 Long, partially hollow conical shape	1
999 Unclear	128
	208

Table 7.17. Frequency of figurines by form (compare with Inomata 1995: Table 7.12b).

Form	Frequency	
	#	%
Non-warrior male	10	4.8
Male with simple clothes	1	0.5
Male with fat-man mask	1	0.5
Male with grotesque-face mask	1	0.5
Ball player	1	0.5
Male, unclear	6	2.9
Warrior	15	7.2
Warrior	13	6.3
Warrior with fat-man mask	1	0.5
Warrior with bird (?) headdress	1	0.5
Female	11	5.3
Female with noble attire	1	0.5
Female with headdress	1	0.5
Female and child	1	0.5
Female and zoomorph	1	0.5
Female, unclear	7	3.4
Human with bird mask	1	0.5
Anthropomorphic, indeterminate	17	8.2
Zoomorph	17	8.2
Bird, unclear	4	1.9
Owl	4	1.9
Monkey	1	0.5
Bat (?)	1	0.5
Zoomorph, indeterminate	7	3.4
Supernatural	8	3.8
Fat man	3	1.4
Old man	2	1.0
Deity (JGU)	1	0.5
Grotesque head or monster	2	1.0
Anthropomorphic/Zoomorphic	1	0.5
Indeterminate	128	61.5
TOTAL	208	100.0

Table 7.18. Frequency of figurines by function (compare with Inomata 1995: Table 7.12a).

Function	Frequency	
	#	%
Figurines	7	3.4
Flutes	10	4.8
Whistles	28	13.5
simple	25	0.0
complex	3	1.4
Hollow head figurines	2	1.0
Molds	0	0.0
Figurines/Whistles	73	35.1
Indeterminate	88	42.3
TOTAL	208	100.0

Table 7.19. Frequency of figurines by generalized form.

Form	Frequency	
	#	%
Anthropomorphs	54	26.0
Zoomorphs	17	8.2
Supernaturals	8	3.8
Indeterminate	129	62.0
TOTAL	208	100.0

Table 7.20. Spatial distribution of all figurines, by frequency.

		Freq	%
GRIETA PRINCIPAL	Hidden Jar Area	10	4.8
	Slope between Inner/Outer Chambers (31A-2)	1	0.48
	Inner Chamber (31A-12)	1	0.48
	Outer Chamber (31A-9)	7	3.37
	Outer Chamber (31A-14)	1	0.48
	Two Owls Area	64	30.8
	Passage 1, north end (31B-6)	4	1.92
	Passage 1, north end (31B-10)	1	0.48
	Passage 1, surface collection (31B-1)	1	0.48
	Passage 1, center (31B-7&11)	4	1.92
	Passage 1, south end (31B-12)	14	6.73
	South of Passage 1 (31B-14)	40	19.23
	Southern Entrance Area	9	4.3
	Upper Chamber (31C-8)	7	3.37
	Passage 8 (31C-7)	2	0.96
	Chill Hill	113	54.3
	Chamber 5 (31D-1)	49	23.56
	West of cave (31D-4)	6	2.88
	Inside cave (31D-2&5)	51	24.52
	Entrance to cave (31D-6)	6	2.88
Possibly terraced hill (31D-9)	1	0.48	
Windy Valley	7	3.4	
Passage 9 (31E-1)	7	3.37	
RINCON	The Grieta	5	2.4
	Outside cave, southwest of cave entrance (30B-1)	1	0.48
	Outside cave, north of cave entrance (30B-2)	1	0.48
	Outside cave, front of cave entrance (30B-4)	3	1.44
TOTAL	208	100.0	

Table 7.21. Spatial distribution of musical instruments.

		Flute	Whistle
GRIETA PRINCIPAL	Two Owls Area	1	5
	Passage 1, center (31B-7&11)		1
	Passage 1, south end (31B-12)		2
	South of Passage 1 (31B-14)	1	2
	Southern Entrance Area	0	3
	Upper Chamber (31C-8)		3
	Chill Hill	8	18
	Chamber 5 (31D-1)		9
	Inside cave (31D-2&5)	5	8
	Entrance to cave (31D-6)	3	
	Possibly terraced hill (31D-9)		1
	Windy Valley	0	1
Passage 9 (31E-1)		1	
RINCON	The Grieta	1	1
	North of cave entrance (30B-2)	1	
	Front of cave entrance (30B-4)		1
TOTAL		10	28

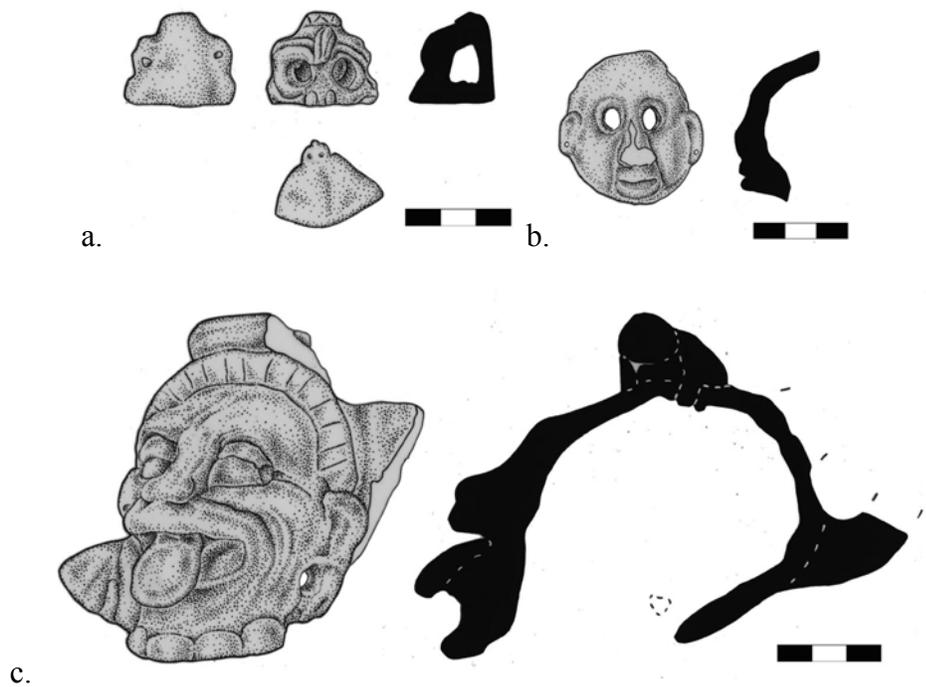


Figure 7.6. Figurines of the hollow head type: a. 142 AG31C-7-1-1; b. #189 AG31D-5-2-3; c. #120 AG31A-9-1-1.

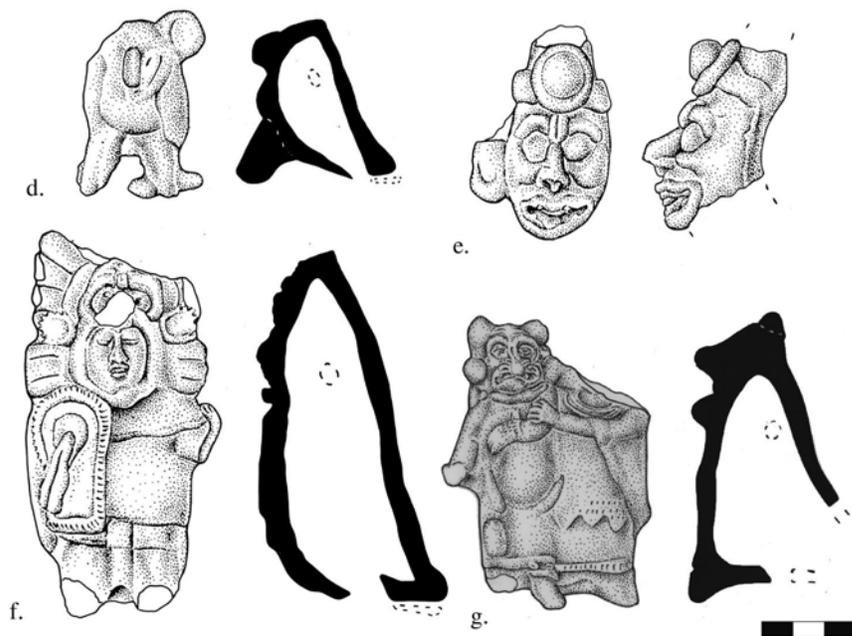


Figure 7.7. Figurines and whistles: a. #142 AG31C-7-1-1; b, f. #105 AG31D-2-2-1, c. #120 AG31A-9-1-1; d-e. #127 AG31D-1-5-1; g. #139 AG31D-1-6-1. Note left half of face of (e) is burnt.

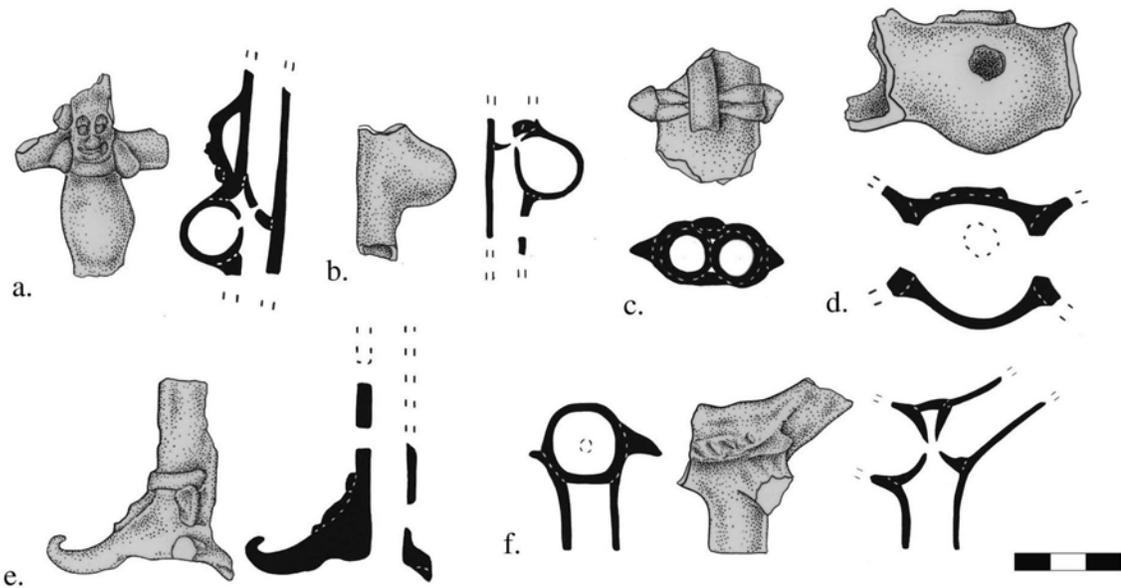


Figure 7.8. Flutes and whistles. Flutes: a.#188 AG30B-2-1-1; b. #203 AG31D-5-3-1; e. #158 AG31D5-2-1; f. #189 AG31D-5-2-3; Double-chambered flute: c. #171 AG31D-5-2-2; Whistle with multiple resonators: d. #158 AG31D-5-2-1. Note parts of the exterior show evidence of burning on (d).

Table 7.22. Types of chert tools.

Tool type	Frequency	
	#	%
Point or Knife	11	3.8
Stemmed	2	0.7
Leaf-shaped	1	0.3
Narrow point	1	0.3
Indeterminate	7	2.4
General use biface	9	3.1
Chopper-pounder	6	2.1
Scraper	6	2.1
Drill (?)	1	0.3
Core	8	2.7
Flakes, indeterminate	251	86.0
Total	292	100.0

Table 7.23. Types of obsidian artifacts.

Tool type	Frequency	
	#	%
Blade	101	87.7
Flake	8	7.0
Reworked blade	2	1.8
Core	4	3.5
Total	115	100.0

Table 7.24. Spatial distribution of chert artifacts.

		Point	GUB	CP	Scraper	Drill	Core	Flakes
GRIETA PRINCIPAL	Hidden Jar Area	0	3	2	4	1	1	39
	Outer Chamber (31A-9)					1	1	12
	Outer Chamber (31A-10)			1		1		17
	Outer Chamber (31A-14)			1		2		5
	Altar-platform, entrance to Inner Chamber (31A-13)			1	1			2
	Slope betw Inner/Outer Chambers (31A-1)							
	Inner Chamber (31A-11)							1
	Inner Chamber (31A-12)			1				2
	Two Owls Area	3	3	2	0	0	3	56
	Two Owls Chamber, Wall 2 (31B-9)						1	5
	Two Owls Chamber, Step 1 (31B-8)							1
	Passage 1, north end (31B-6)			1			1	20
	Passage 1, north end (31B-10)							
	Passage 1, center (31B-7)							3
	Passage 1, center (31B-11)	1						
	Passage 1, activity area (31B-11-1-3)	1						3
	Passage 1, south end (31B-12)	1						6
	South of Passage 1 (31B-14)			3	1		1	18
	Southern Entrance Area	1	0	0	0	0	0	21
	Upper Chamber (31C-8)							16
	Upper Chamber (31C-9)							
	Upper Chamber, niche (31C-10)	1						3
	Nasal Passage (31C-4)							2
	Chill Hill	6	2	2	1	0	2	53
	Chamber 5 (31D-1)	2	1				1	13
	West of cave (31D-4)		1	1				1
	Inside cave (31D-2 & 5)	3		1		1		32
Entrance to cave (31D-6)	1						3	
Possibly terraced hill (31D-8)						1	1	
Possibly terraced hill (31D-9)							3	
Windy Valley	0	1	0	0	0	1	6	
Passage 9 (31E-1)			1			1	6	
RINCON	The Cave	0	0	0	0	0	0	1
	Inside cave (30A-2)							1
	Inside cave, platform (30A-5)							
	The Grieta	1	0	0	1	0	1	75
	Outside cave, SW of entrance (30B-1)					1		16
Outside cave, front of entrance (30B-4)	1	0				1	59	
TOTAL	11	9	6	6	1	8	251	

Table 7.25. Spatial distribution of obsidian artifacts.

		Blades	Cores	Flakes
GRIETA PRINCIPAL	Hidden Jar Area	14	0	2
	Outer Chamber (31A-9)	1		
	Outer Chamber (31A-10)	2		1
	Outer Chamber (31A-14)	3		
	Slope between Inner/Outer Chambers (31A-1)			1
	Inner Chamber (31A-11)	1		
	Inner Chamber (31A-12)	7		
	Two Owls Area	27	2	4
	Two Owls Chamber (31B-9)	1		
	Passage 1, north end (31B-6)	3		
	Passage 1, north end (31B-10)	2		
	Passage 1, center (31B-7)	3		
	Passage 1, center (31B-11)	3		
	Passage 1, central activity area (31B-11-1-3)	1		
	Passage 1, south end (31B-12)	9		4
	South of Passage 1 (31B-14)	5	2	
	Southern Entrance Area	4	1	1
	Upper Chamber (31C-8)	2		1
	Upper Chamber (31C-9)	1	1	
	Upper Chamber, niche (31C-10)	1		
Chill Hill	48	1	3	
Chamber 5 (31D-1)	26	1	1	
Inside cave (31D-2 & 5)	13		2	
Entrance to cave (31D-6)	2			
Possibly terraced hill (31D-8)	3			
Possibly terraced hill (31D-9)	4			
Windy Valley	1	0	0	
Passage 9 (31E-1)	1			
RINCON	The Cave	3	0	0
	Inside cave (30A-2)	1		
	Inside cave, platform (30A-5)	2		
	The Grieta	4	0	0
	Outside cave, front of entrance (30B-4)	4		
TOTAL	101	4	10	

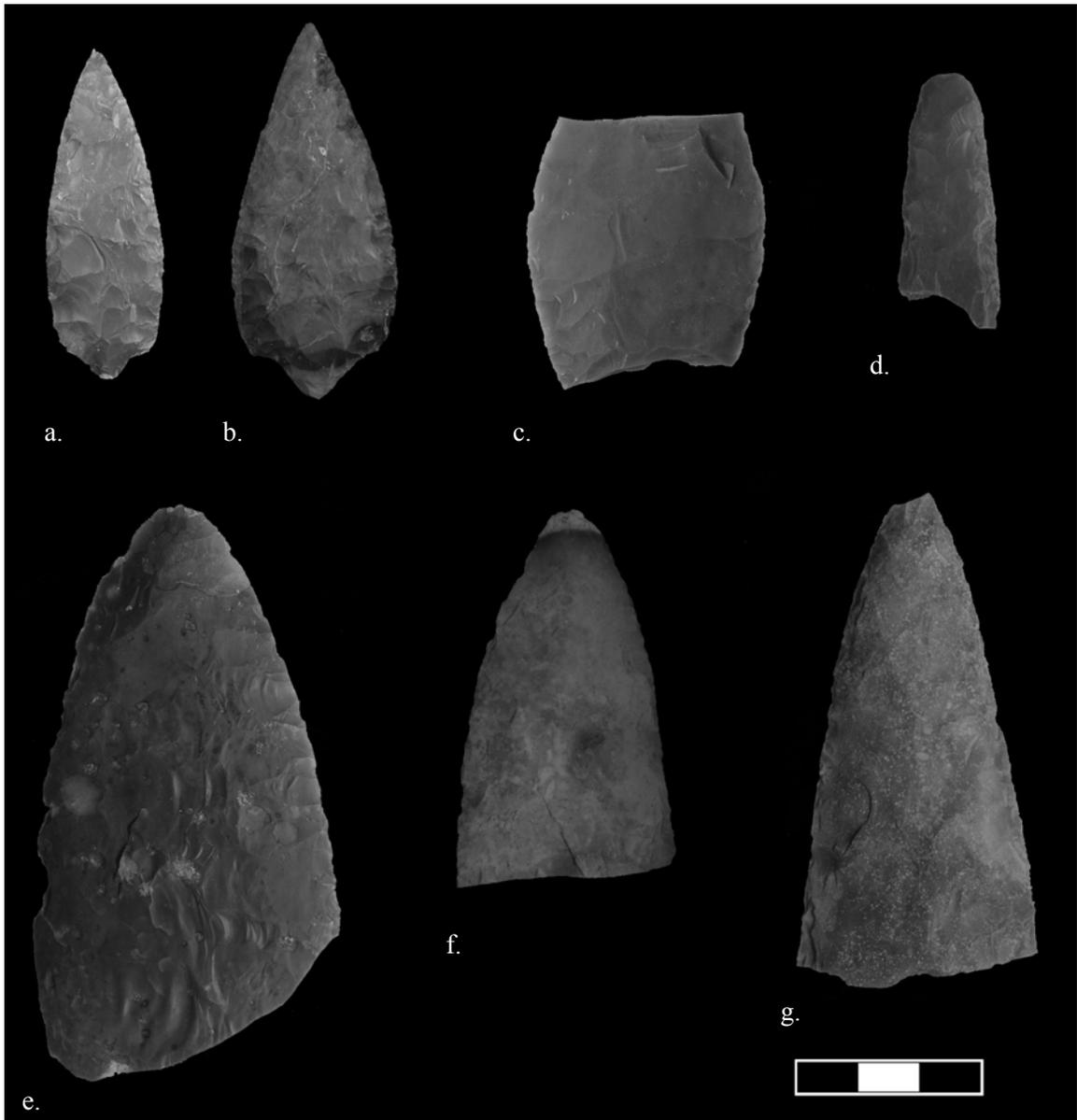


Figure 7.9. Chert points and knife fragments: a-b. narrow tapered stem, long blade type (a. #317 AG31B-12-1-1; b. #321 AG31B-11-1-1); c. laurel-leaf (?) blade (#138 AG31D-1-6-1); d-g. unidentified knife fragments (d. #133 AG31D-1-5-1; e. #123 AG31D-2-2-1; f. #140 AG30B-4-2-8; g. #340 AG31B-11-1-3).

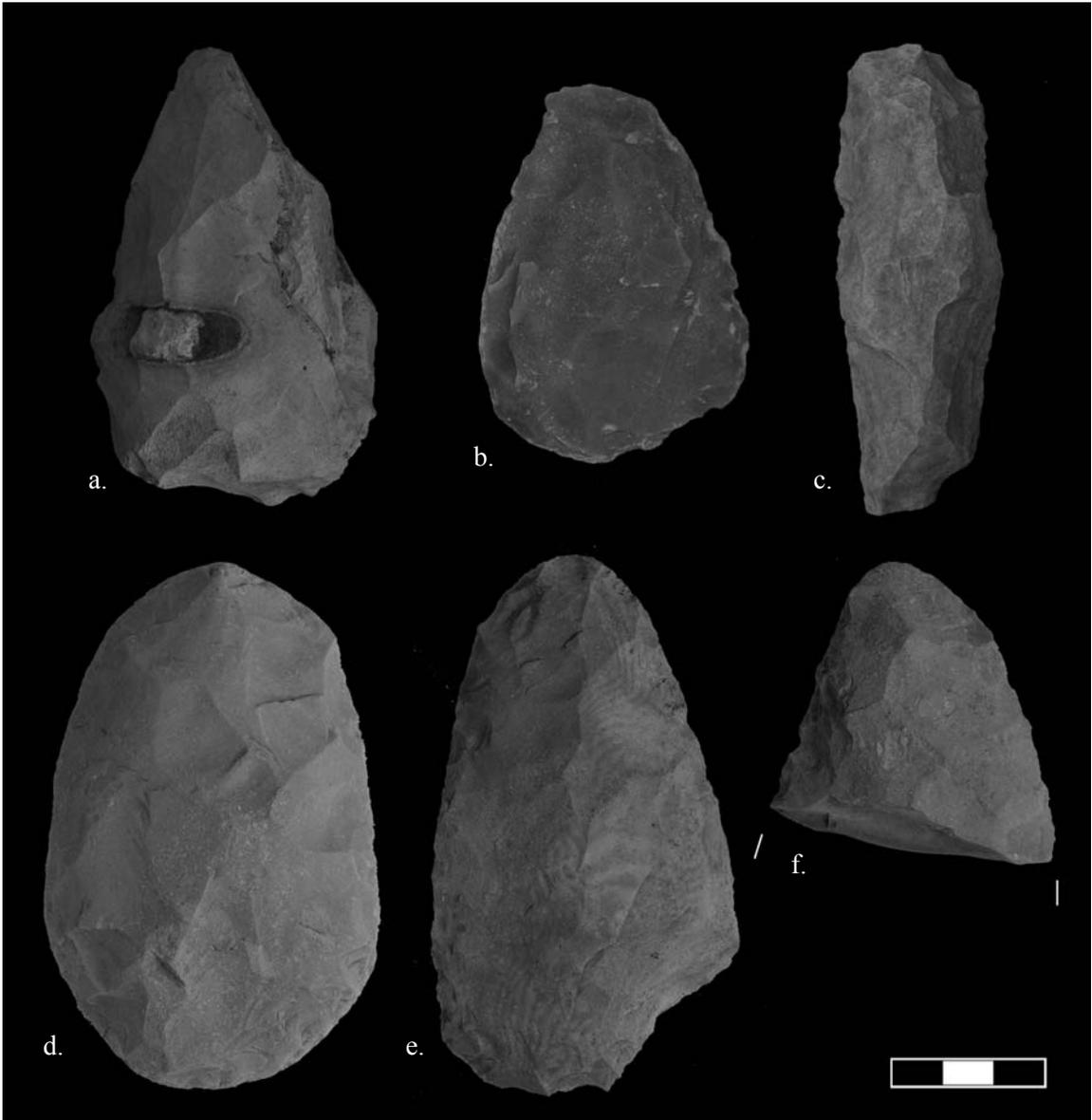


Figure 7.10. Chert general utility bifaces: a. #216 AG31A-14-5-1; b. #362 AG31B-14-2-2; c. #210 AG31D-4-2-1; d. #133 AG31D-1-5-1; e. #181 AG31A-13-3-1&2; f. #171 AG31A-12-2-2.

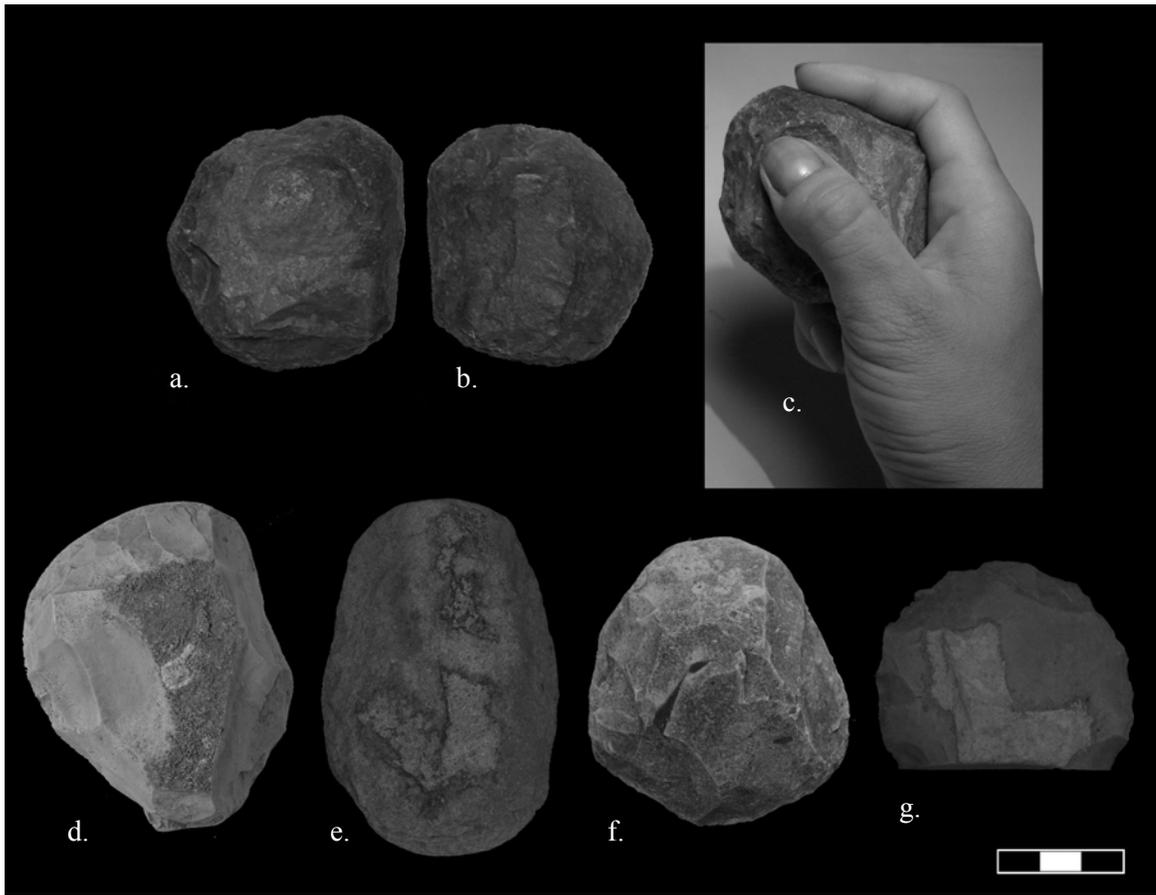


Figure 7.11. Chert bifaces (chopper-pounders): a-b. ventral and dorsal sides, c. tool held in hand by author (a-c. #129 AG31B-6-1-1); d. #132 AG31A-10-2-1; e. #187 AG31D-5-2-3; f. #149 AG31A-13-1-1; g. disk chopper (#169 AG31D-4-1-1).



Figure 7.12. An unidentified limestone object (#101 AG31D-2-2-1).

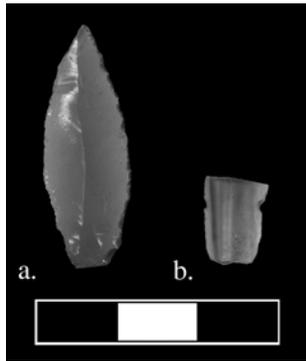


Figure 7.13. Reworked obsidian blades: a. leaf-shaped point #156 AG31D-5-2-1; b. notched blade #101 AG31A-1-0-1.

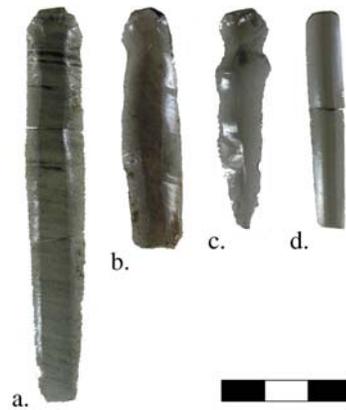


Figure 7.14. Obsidian prismatic blades: a. #169 AG31A-12-2-2; b. #162 AG30B-4-2-1; c. #126 AG31D-1-5-1; d. #114 AG30A-5-1-2.



Figure 7.15. Obsidian cores: a. #129 AG31C-9-1-1; b-c. #356 AG31B-14-2-1.

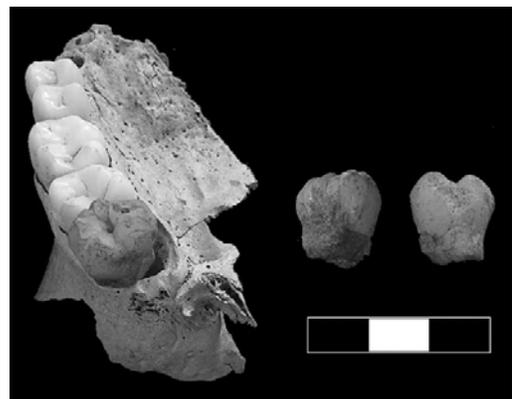


Figure 7.16. False molar made of quartzite (?) (AG31B-14-2-1): a. shown fitted into mandible; b-c. lateral views. Photo taken by Juan Manuel Palomo.

Table 7.26. Manos recovered from the Grieta Rincón and the Grieta Principal. See Figure 7.21 for the types of manos. The units for Thickness and Length are cm and g for Weight.

MN No.	Lot No.	Tsec	Lsec	C/F	Re	End	Thick	Length	Wt	Mat	Grain	Hard	Calc
163-01	AG30B-1-2-1	4	4	3	2	2	6.1	16.8	803	1	1	1	0
170-01	AG30B-1-2-2	5	3	1	2	2	9.4	21.5	2713	1	1	1	0
170-02	AG30B-1-2-2	20	99	2	9	9	4.0	10.3	225	3	3	3	0
170-03	AG30B-1-2-2	13	6	2	2	2	5.7	8.8	336	1	1	1	0
180-01	AG30B-1-2-3	99	99	2	9	9	4.8	0.0	n/a	2	2	1	0
150-01	AG30B-4-2-10	13	4	2	2	2	6.3	11.0	528	1	1	1	0
146-01	AG30B-4-2-9	5	99	2	9	9	6.7	0.0	212	1	1	1	0
188-01	AG31A-10-2-1	6	9	1	2	2	4.2	12.7	500	1	1	3	0
145-01	AG31A-12-2-1	17	99	2	2	2	5.8	12.1	479	1	1	1	0
207-01	AG31A-14-3-1	13	9	2	1	2	6.9	10.5	614	1	1	3	0
217-01	AG31A-14-5-1	5	4	2	2	2	5.6	8.7	396	2	2	1	0
124-01	AG31A-9-1-2	6	4	2	1	2	4.2	8.7	405	1	1	3	0
124-02	AG31A-9-1-2	6	4	2	2	2	4.9	6.7	223	1	1	3	0
124-03	AG31A-9-1-2	10	4	3	2	2	5.5	17.6	832	2	2	1	0
287-01	AG31B-12-1-1	6	4	2	1	2	5.6	12.5	599	1	1	1	0
287-02	AG31B-12-1-1	6	5	2	2	2	5.1	8.6	364	1	1	1	0
287-03	AG31B-12-1-1	5	99	2	1	9	6.8	5.7	422	1	1	1	0
287-04	AG31B-12-1-1	6	4	2	2	2	7.2	13.6	729	1	1	1	0
350-01	AG31B-14-2-1	9	10	1	2	2	3.9	12.5	579	1	1	1	0
350-02	AG31B-14-2-1	13	99	2	2	9	6.1	5.1	223	1	2	1	0
350-03	AG31B-14-2-1	10	5	2	2	2	6.1	9.2	422	6	1	1	0
350-04	AG31B-14-2-1	4	4	2	2	2	5.8	15.4	1037	1	1	1	0
350-05	AG31B-14-2-1	2	4	2	1	2	7.4	12.6	681	1	2	3	1
350-06	AG31B-14-2-1	18	5	2	2	2	7.1	13.4	943	6	2	1	1
350-07	AG31B-14-2-1	6	99	2	2	9	7.1	8.7	617	1	1	1	0
350-08	AG31B-14-2-1	9	99	2	2	9	7.8	5.4	329	1	1	1	1
350-09	AG31B-14-2-1	4	9	1	2	2	7.5	12.0	562	1	1	3	1
350-10	AG31B-14-2-1	6	3	2	2	2	7.0	20.2	1519	1	1	1	0
366-01	AG31B-14-2-2	4	4	2	2	2	8.1	13.0	1150	1	1	1	0
366-02	AG31B-14-2-2	14	99	2	2	9	7.6	7.9	407	1	1	1	0
148-01	AG31B-6-4-1	4	2	1	2	2	5.1	20.0	1135	1	1	1	1
155-01	AG31B-6-4-1	10	6	2	2	2	4.2	9.2	307	1	1	1	0
117-01	AG31C-1-0-1	6	4	2	2	2	6.0	6.0	244	1	1	1	0
141-01	AG31D-1-6-1	3	3	2	2	2	8.5	13.5	1046	1	1	1	0
104-01	AG31D-2-2-1	5	5	2	2	2	6.7	10.2	567	1	1	3	0
103-01	AG31E-1-2-1	18	4	2	1	2	5.2	12.0	566	1	1	1	0
103-02	AG31E-1-2-1	1	99	2	2	9	6.6	8.8	360	1	2	1	0
113-02	AG31E-1-3-1	99	99	1	2	2	5.7	13.2	557.7	2	1	1	0

Table 7.26. Continued.

C/F	Complete or fragment: 1 Complete; 2 Fragment; 3 Almost complete
Re	Reused or not after breakage: 1 Reused; 2 Not reused; 9 Not clear
End	Use of the end like a pestle: 1 End use; 2 No end use; 9 Not clear
Thick	Thickness taken at thickest part of the mano
Length	Length taken at longest part of the mano
Wt	Weight in grams
Mat	Material: 1 Limestone; 2 Quartzite; 3 Sandstone; 4 Diorite; 5 Basalt; 6 Granite; 99 Unidentified
Grain	Grain size: 1 Fine; 2 Medium; 3 Coarse
Hard	Hardness: 1 Hard; 2 Medium; 3 Soft (can be scratched by nail)
Calc	Calcite coverage due to calcite deposition of cave water: 0 None; 1 Present

Transverse Cross-Section

	Code	Description
	1	Symmetrical elliptical
	2	Asymmetrical elliptical
	3	Symmetrical oval
	4	Asymmetrical oval
	5	Round
	6	Square
	7	Bordered plano-convex
	8	Not bordered plano-convex
	9	Rectangular
	10	Lenticular
	11	Triangular
	12	Wedge shape
	13	Pentagonal
	14	Rhomboidal
	15	Trapezoidal
	16	Asymmetrical triangular
	17	Asymmetrical quadrangular
	18	Parallelogram
	19	Flat triangular
	20	Parallel lenticular

Longitudinal Cross-Section

	Code	Description
	1	Symmetrical elliptical
	2	Asymmetrical elliptical
	3	Oval
	4	Lenticular
	5	Lenticular
	9	Asymmetrical rectangular

Figure 7.17. Types of manos. (Adapted from Inomata 1995: Figure 7.27).

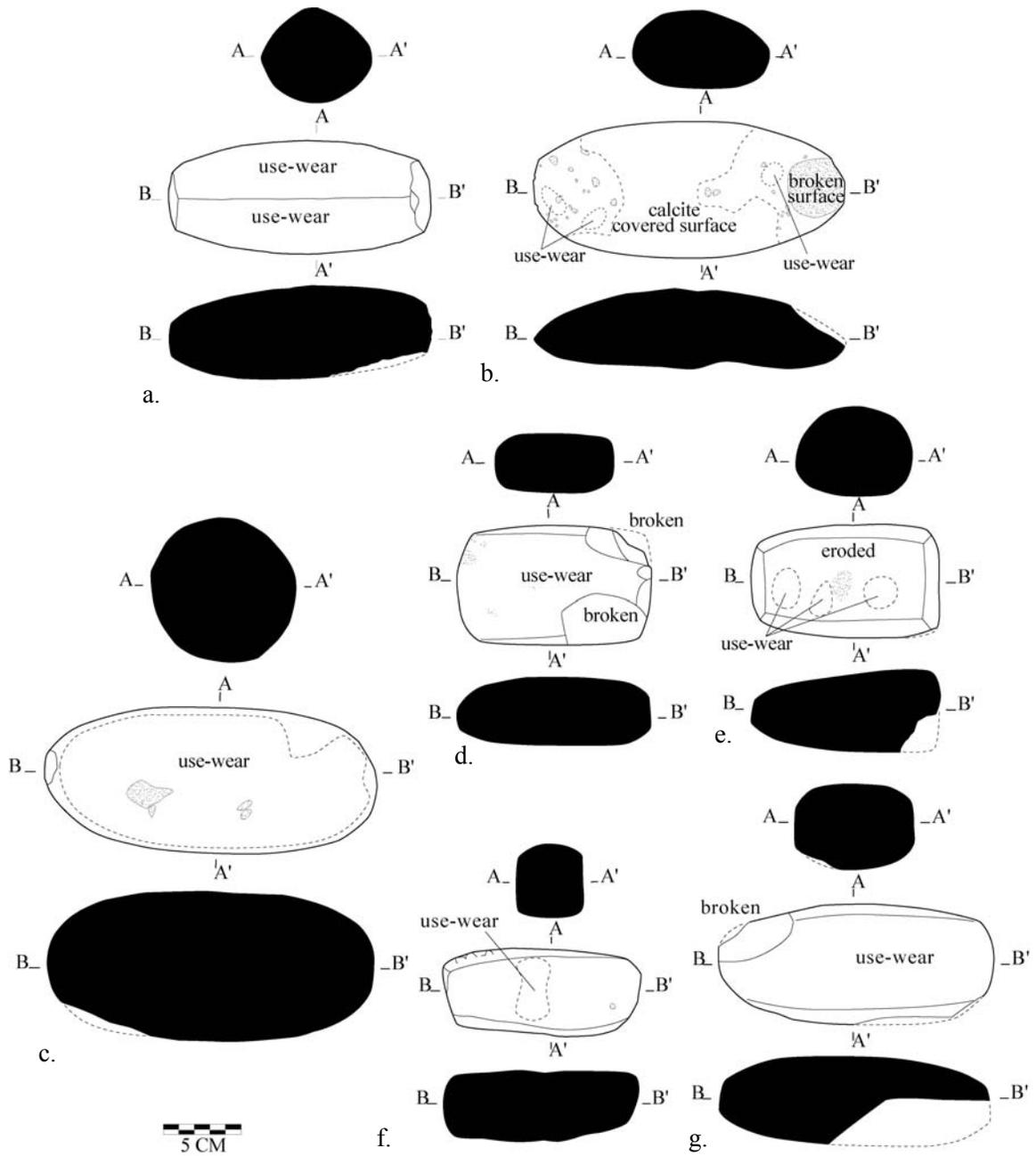


Figure 7.18. Complete or almost complete manos: a-f. limestone; g. quartzite (a. #148-01 AG31B-6-4-1; b. #163-01 AG30B-1-2-1; c. #170-01 AG30B-1-2-2; d. #350-01 AG31B-14-2-1; e. #350-09 AG31B-14-2-1; f. #188-01 AG31A-10-2-1; g. #124-03 AG31A-9-1-2. Drawings by Yuko Shiratori.

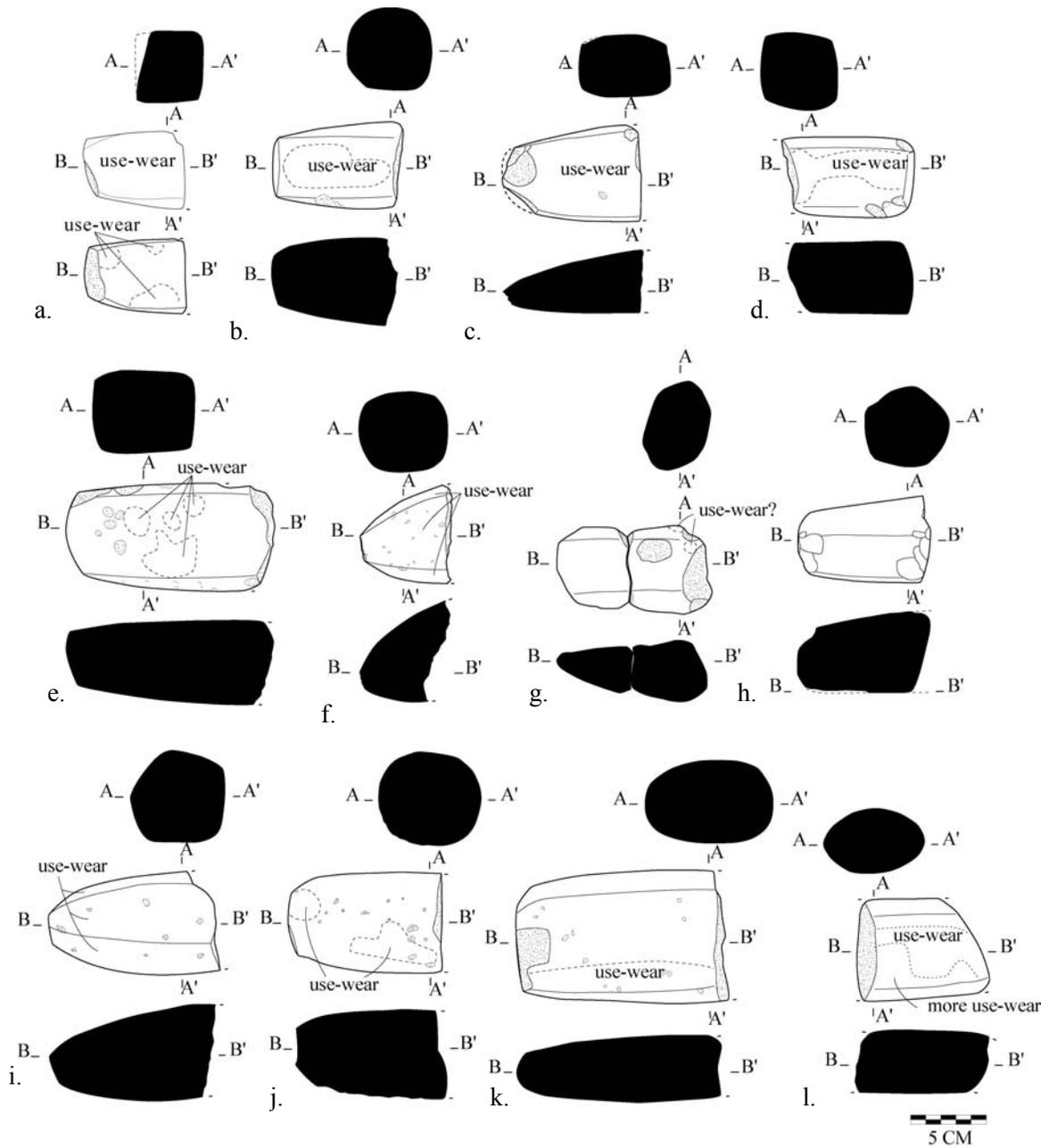


Figure 7.19. Mano fragments: a, c-f, h-l. limestone; b. quartzite; g. sandstone (a. #124-02 AG31A-9-1-2; b. #217-01 AG31A-14-5-1; c. #155-01 AG31B-6-4-1; d. #287-02 AG31B-12-1-1; e. #287-04 AG31B-12-1-1; f. #117-01 AG31C-1-0-1; g. mano or pestle (#170-02 AG30B-1-2-2); h. #170-03 AG30B-1-2-2; i. #150-01 AG30B-4-2-10; j. #104-01 AG31D-2-2-1; k. #141-01 AG31D-1-6-1; l. #103-02 AG31E-1-2-1). Drawings by Yuko Shiratori.

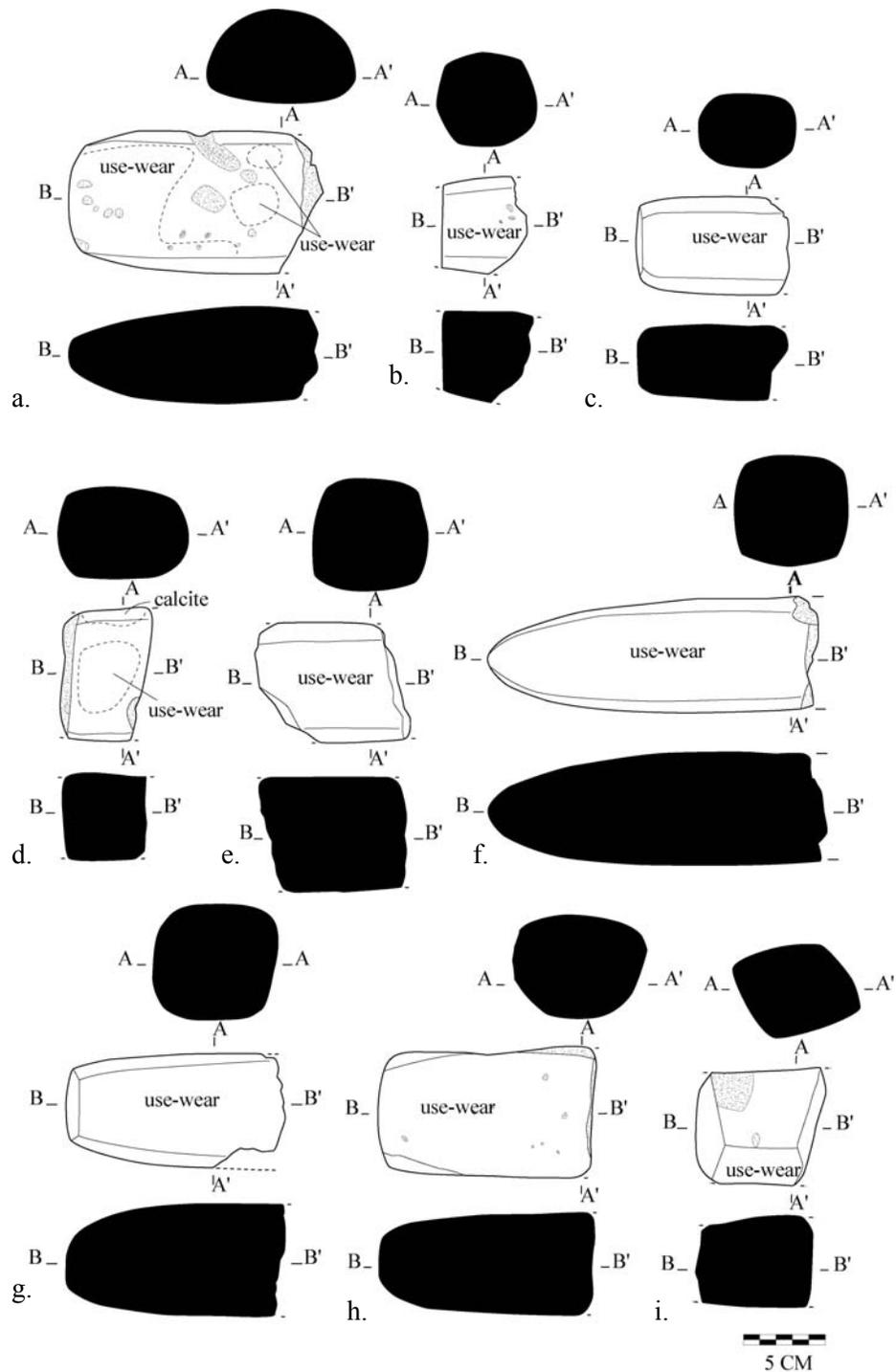


Figure 7.20. Mano fragments from Unit 14, Two Owls Area: a-f. AG31B-14-2-1; g-h. AG31B-14-2-2; a-b, d-e, g-h. limestone; c, g. granite (a. #350-04; b. #350-02; c. #350-03; d. #350-08; e. #350-07; f.#350-10; g. #350-06; h. #366-01; i. #366-02). Drawings by Yuko Shiratori.

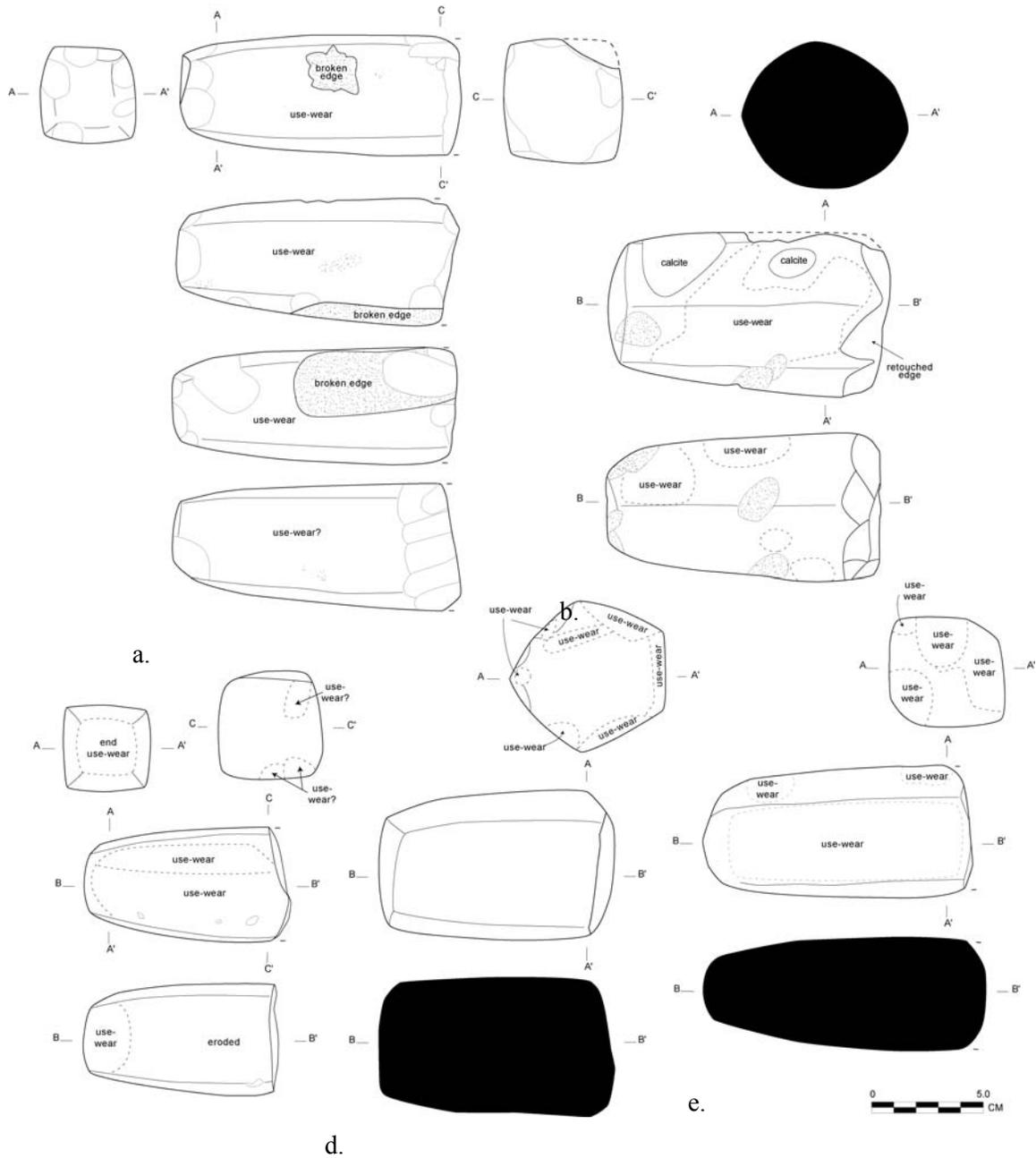


Figure 7.21. Manos (limestone) with reuse or end use: a. both non-broken and broken ends have been reworked for possible reuse as a smaller mano (#287-01 AG31B-12-1-1); b. broken edge has been reworked and rounded (#350-05 AG31B-14-2-1); c. unbroken end has use-wear, possibly like a pestle, and broken end may have some use-wear (#124-01 AG31A-9-1-2); d. broken end has been reworked along the corners possible for reuse as a smaller mano (#207-01 AG31A-14-3-1); e. end use on broken end (#103-01 AG31E-1-2-1). Drawings by Yuko Shiratori.

Table 7.27. Catalog of metate fragments.

MT No.	Lot No.	Typ	Leg	Grve	Dip	CB	Len	Wid	Ht	Th	Wt	Mat	Est	Grain	Hard
111-01	AG30B-4-2-3	4	3	2	3	2	6.3	5.3	n/a	3.8	131.0	2	1	2	1
126-01	AG31A-9-2-1	9	3	3	3	2	10.7	4.8	n/a	2.3	n/a	n/a	n/a	n/a	n/a
282-01	AG31B-6-5-1	4	3	1	3	2	3.9	3.1	n/a	0.8	8.5	5	2	1	1
214-01	AG31B-6-4-1, AG31B-6-6-1	4	3	1	3	2	16.0	10.4	n/a	1.9	407.0	5	2	1	1
348-01	AG31B-14-2-1	2	3	2	3	2	10.3	6.9	3.5	3.0	225.0	5	2	2	1
348-02	AG31B-14-2-1	9	3	3	3	2	13.3	7.2	n/a	1.7	276.0	8	2	2	1
170-01	AG31D-5-2-2	4	3	3	3	2	7.2	6.4	2.8	2.8	n/a	5	2	1	1

Typ Type: 1 Deep basin; 2 Shallow basin; 3 Unclear basin; 4 Flat; 9 Unclear
 Leg 1 With legs; 2 Without legs; 3 Unclear
 Grve 1 With groove; 2 Without groove; 3 Unclear
 Dip 1 With dip; 2 Without dip; 3 Unclear
 CB 1 Complete (reconstructible); 2 Broken; 3 Unclear
 Len Length taken at longest part of the metate fragment
 Wid Width taken at widest part of the metate fragment
 Ht Height taken at highest part of the metate fragment
 Th Thickness taken at thickest part of the metate fragment
 Wt Weight in grams
 Mat Material: 1 Limestone; 2 Quartzite; 3 Sandstone; 4 Diorite; 5 Basalt;
 6 Granite; 8 Greenstone; 99 Unidentified
 Est Estimate: If sure about material identification: 1 Sure; 2 Not sure
 Grain Grain size: 1 Fine; 2 Medium; 3 Coarse
 Hard Hardness: 1 Hard; 2 Medium; 3 Soft (can be scratched by the nail)

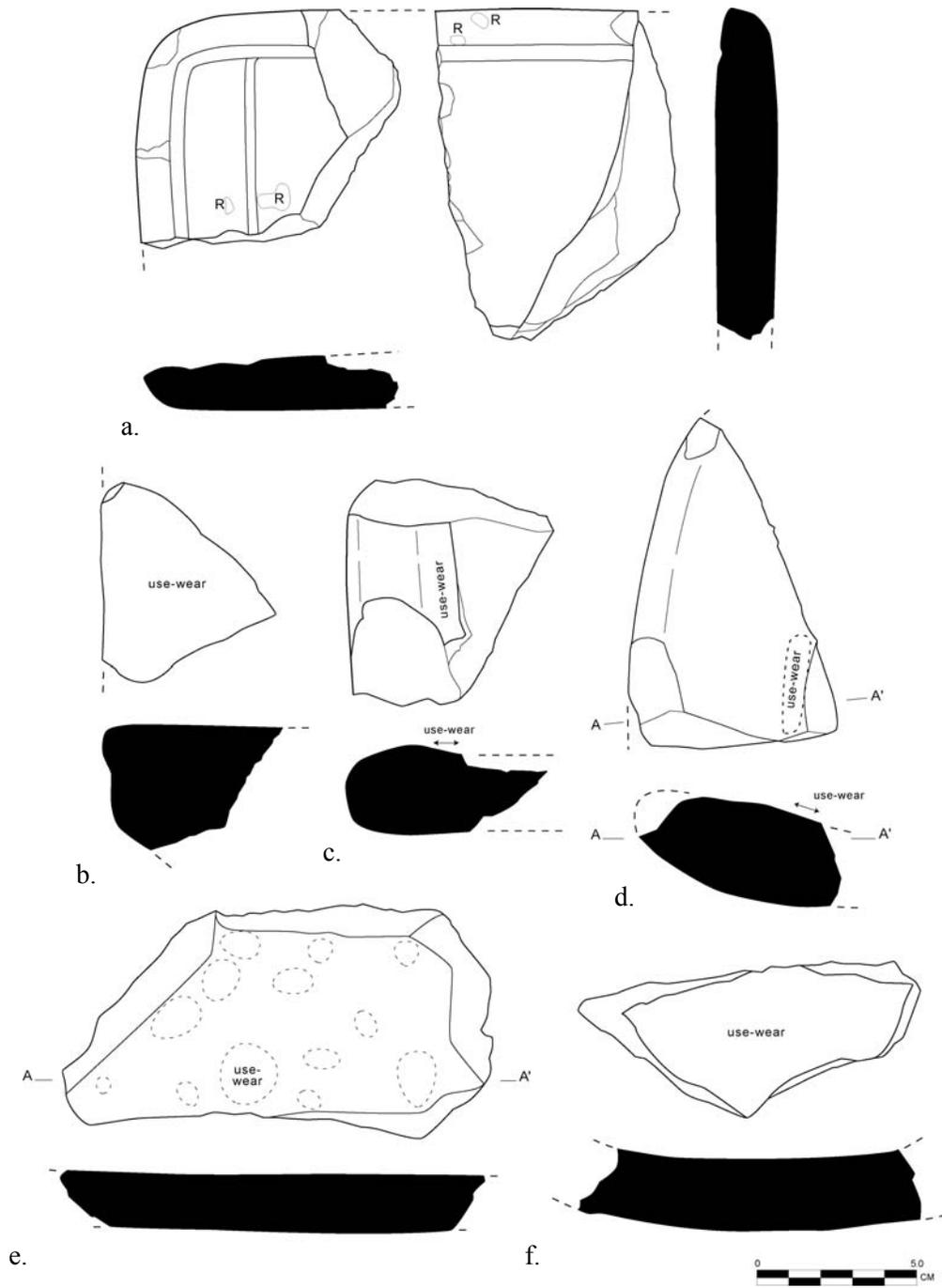


Figure 7.22. Metates: a. flat, grooved metate (#214-01 AG31B-6-4-1, 6-6-1); b. flat, quartzite metate (#111-01 AG30B-4-2-3); c. flat metate with use-wear (#170-01 AG31D-5-2-2); d. shallow basin type metate with use-wear (#348-01 AG31B-14-2-1); e. greenstone metate with use-wear (#348-02 AG31B-14-2-1); f. unidentified type (#126-01 AG31A-9-2-1). Drawings by Yuko Shiratori.

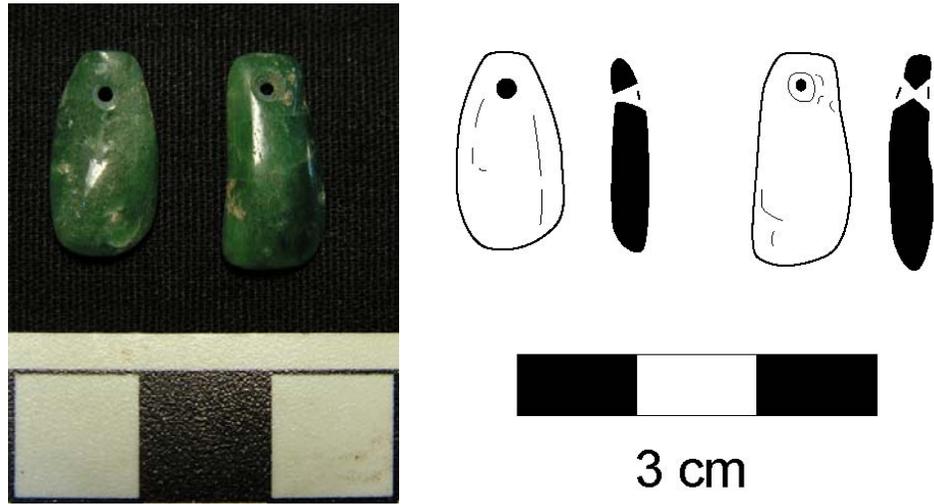


Figure 7.23. Greenstone pendants (#311 AG31B-9-5-2).

Table 7.28. Limestone spindle whorls. D = diameter.

Artifact #	Lot #	Dimensions (cm)	Weight (g)
194	AG31A-11-2-1	3.0 D x 1.7, hole D 0.5	19.0
258	AG31B-8-1-1	2.4 D x 1.0, hole D 0.5	7.0

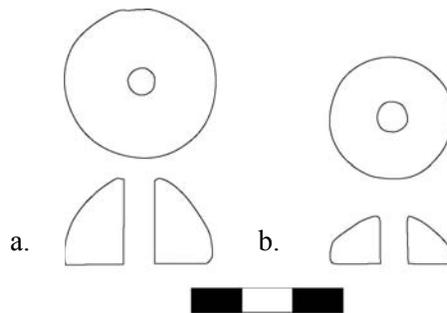


Figure 7.24. Limestone spindle whorls: a. AG31A-11-2-1; b. AG31B-8-1-1.



Figure 7.25. Celt of unidentified stone (#336 AG31B-11-1-3).

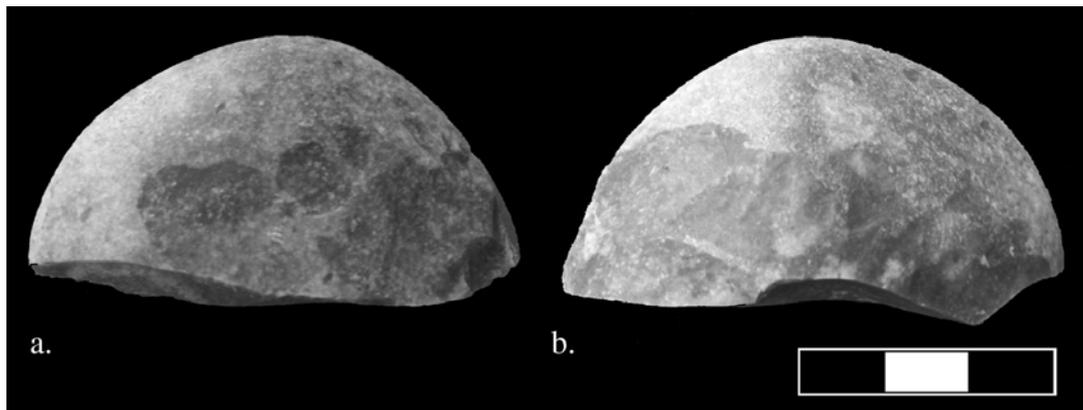


Figure 7.26. Chert pestle: a-b. ventral and dorsal sides. #187 AG31D-5-2-3.

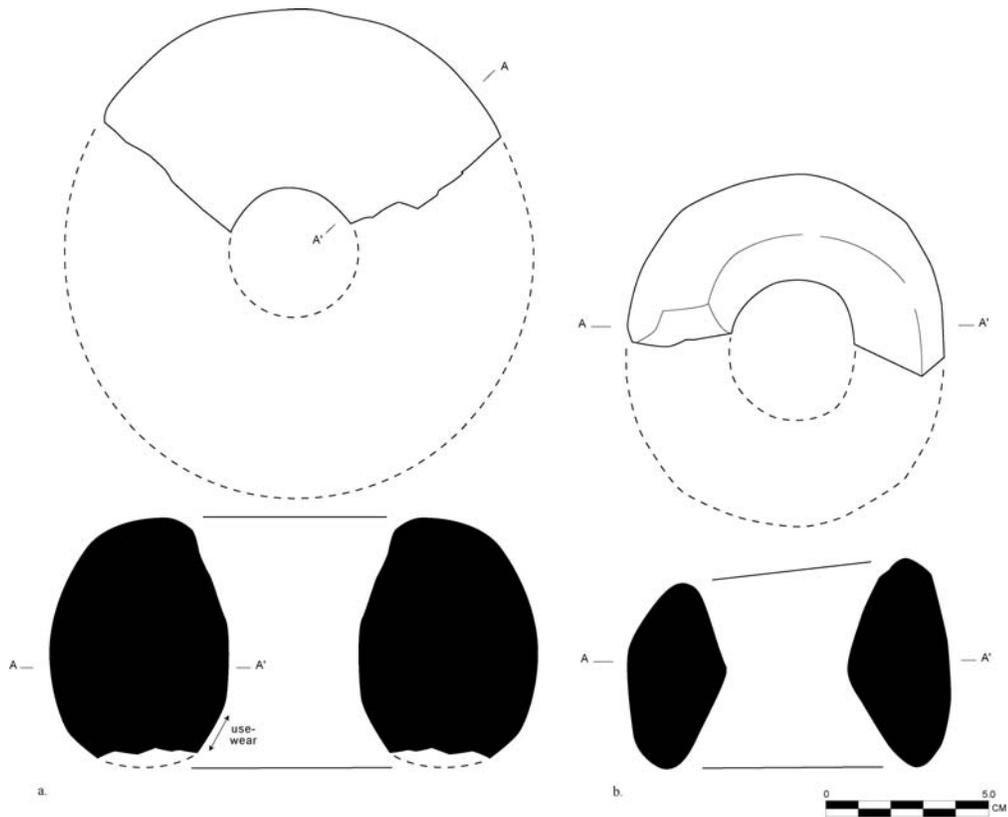


Figure 7.27. Doughnut stones: a. #348-03 AG31B-14-2-1; b. #194-01 AG31D-4-1-1.

Table 7.29. Catalog of doughnut stones. (C/F = Complete or Fragment).

Artifact No.	Lot No.	C/F	Outer Diam (cm)	Inner Diam (cm)	Thick (cm)	Weight (g)	Material	Grain	Hard
348-03	AG31B-14-2-1	F	15.0	4.0	7.8	858	limestone	Fine	Hard
348-04	AG31B-14-2-1	F	approx. 11.0	n/a	n/a	69	granite?	Med	Hard
348-05	AG31B-14-2-1	F	approx. 13.0	approx. 4.0	n/a	87	granite?	Med	Hard
194-01	AG31D-4-1-1	F	11.0	4.5	6.4	335	limestone	Fine	Soft

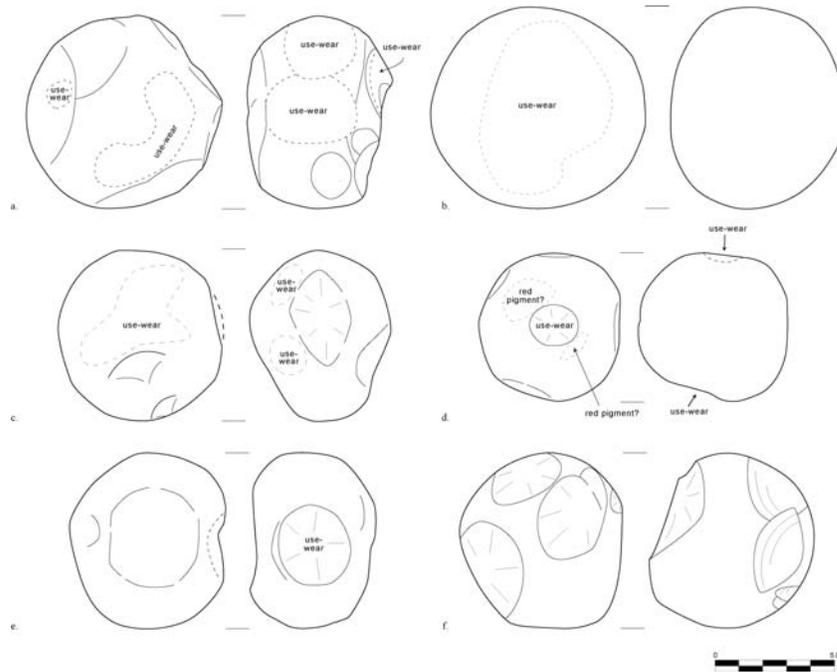


Figure 7.28. Hammer stones and rubbing stones: a-b. rubbing stones (a. #178-01 AG30B-1-2-2; b. partially covered in calcite #348-02 AG31B-14-2-1); c. rubbing stone and hammer stone (#348-01 AG31B-14-2-1); d-f. hammer stones (d. #121-01 AG30B-4-2-5; e. #128-01 AG30B-4-2-6; f. #144-01 AG31D-1-6-2). Drawings by Yuko Shiratori.

Table 7.30. Catalog of hammer stones and rubbing stones. Indeterminate specimens are very small fragments that may be manos or other ground stone. (C/F = Complete or Fragment).

Artifact No.	Lot No.	C/F	WidthA	WidthB	WidthC	Weight (g)	Material	Description
121-01	AG30B-4-2-5	C	6.2	5.8	5.2	265	limestone	hammer stone
128-01	AG30B-4-2-6	C	7.4	7.0	6.6	356	limestone	hammer stone
123-02	AG31A-9-2-1	C	6.0	5.8	5.4	n/a	chert	hammer stone
348-01	AG31B-14-2-1	C	7.2	6.8	6.7	363	chert	hammer stone/ rubbing stone
144-01	AG31D-1-6-2	C	7.4	7.4	6.8	415	chert	hammer stone
116-01	AG31E-1-3-2	C	9.5	7.9	7.4	709.5	chert	hammer stone
123-01	AG31A-9-2-1	C	4.0	3.2	3.2	n/a	quartzite	hammer stone?
178-01	AG30B-1-2-2	C	8.1	8.0	8.0	584	quartzite	rubbing stone
348-02	AG31B-14-2-1	C	9.0	8.4	7.3	734	chert	rubbing stone
143-01	AG31A-12-2-1	C	3.5	3.5	3.3	n/a	quartzite	rubbing stone
123-01	AG31E-1-5-3	F	4.3	3.1	1.4	18	quartzite	rubbing stone?
113-01	AG31E-1-3-1	F	2.1	1.8	1.3	3.5	quartzite	indeterminate
316-01	AG31B-12-1-1	F	n/a	n/a	n/a	n/a	quartzite	indeterminate

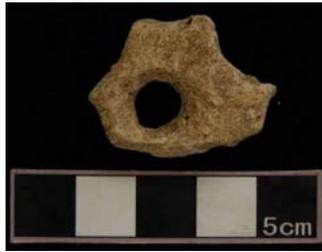


Figure 7.29. Irregularly shaped limestone with perforation (AG31C-8-1-1). Unclear if artificially modified.

Table 7.31. Catalog of speleothem manuports.

OS No.	Lot No.	Description	Length (cm)	Width (cm)	Thick (cm)	Weight (g)
406	AG31B-12-1-1	weathered stalactite medial fragment	4.8	2.5	1.8	33.5
227	AG31A-14-6-1	small stalactite (soda straw) medial frag	3.8	0.9	0.9	n/a
348	AG31B-14-2-1	distal end of small stalactite (soda straw)	4.4	17.2	n/a	n/a
162	AG31C-7-1-1	almost complete stalactite associated with Interment #34	8.5	2.7	2.1	32
134	AG31C-10-1-1	stalactite basal fragment	8.0	1.7-3.6	1.3	44
134	AG31C-10-1-1	bacon-like stalactite distal end fragment	4.4	1.0-3.4	0.6	15
134	AG31C-10-1-1	almost complete, stalactite cluster basal fragment; distal end has been broken off	25.0	12.0	n/a	n/a
210	AG31D-4-2-1	speleothem	n/a	n/a	n/a	n/a
135	AG31A-9-2-1	complete stalactite	6.0	0.6-2.1	1.0	16
221	AG31A-14-5-1	small stalactite (soda straw), medial frag	5.7	1.5	1.3	19.5
171	AG31B-8-2-2	speleothem	n/a	n/a	n/a	n/a
277	AG31B-8-2-2	speleothem	n/a	n/a	n/a	n/a
243	AG31B-8-1-2	speleothem; from lot 8-1-2 Step 1 (east)	n/a	n/a	n/a	n/a
105	AG30A-2-0-1	flowstone	n/a	n/a	n/a	n/a
136	AG31A-10-2-1	flowstone?	n/a	n/a	n/a	n/a

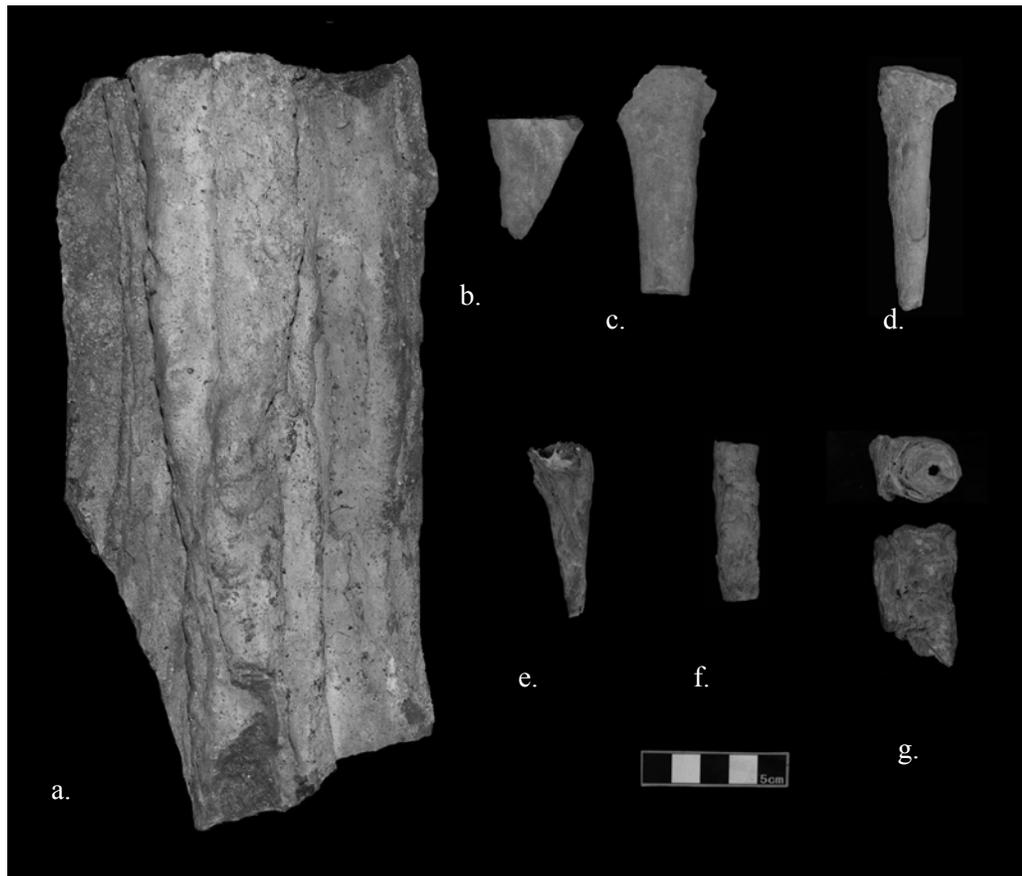


Figure 7.30. Speleothem manuports: a-c. AG31C-10-1-1; d. AG31C-7-1-1; e. AG31A-9-1-2; f. AG31A-14-5-1; g. AG31B-12-1-1 (top: top view, bottom: side view).

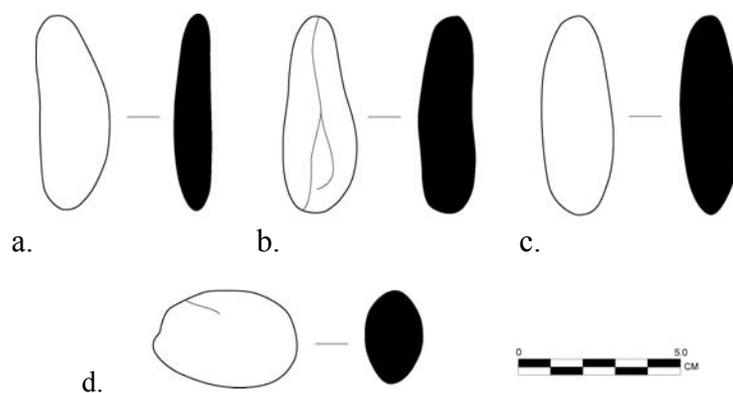


Figure 7.31. Manuports. Small pebbles: a-c. small, oblong pebbles from the Outer Chamber of the Hidden Jar Area (AG31A-10-2-1, #136-01, #136-02, #136-03); d. small, ovaloid pebble from Passage 1 of Two Owls Area (#343-01 AG31B-11-1-3).

Table 7.32. Catalog of manuports: small pebbles.

Artifact No.	Lot No.	C/F	Width A	Width B	Width C	Wt (g)	Form, color
136-10	AG31A-10-2-1	C	5.9	2.2	1.1	25	Elongated, gray
136-02	AG31A-10-2-1	C	6.0	2.2	1.7	28	Elongated, gray
136-03	AG31A-10-2-1	C	6.1	2.2	1.8	33	Elongated, gray
216-01	AG31A-14-5-1	C	7.0	5.0	n/a	n/a	Roughly triangular, orange
343-01	AG31B-11-1-3	C	3.5	3.0	1.8	31	Oval, purple
103-01	AG31D-2-2-1	C	6.5	5.0	n/a	n/a	D-shaped, red ~ orange
183-01	AG31D-6-3-1	F	5.8	5.2	n/a	n/a	Elongated, black
220-01	AG31B-6-2-1	C	n/a	n/a	n/a	n/a	n/a

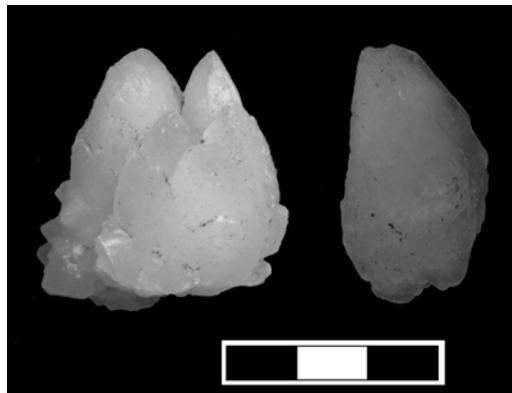


Figure 7.32. Manuports. Quartz crystals: a. #316 AG31B-12-1-1, 29 g; b. #116 AG31E-1-3-2, 14.6 g.

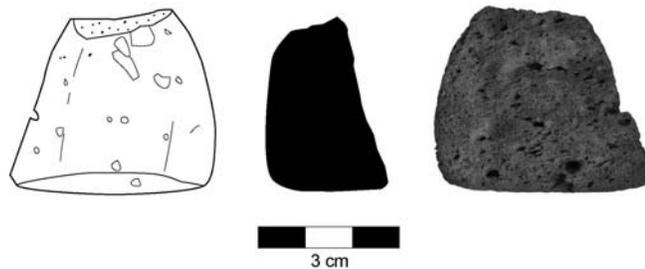


Figure 7.33. Manuports. Pumice (#187 AG31D-5-2-3).

Table 7.33. Identified faunal remains listed by lot. Courtesy of Dr. Kitty Emery and Michelle LeFebvre.

		31A-9-1-1	31A-9-1-2	31B-11-1-1	31B-11-1-3	31B-14-2-1	31B-14-2-2	31D-1-4-1	31D-1-5-1	31D-1-6-1	31D-1-7-1
Mammals	Opossum, <i>Didelphis</i> sp.	1(1)		61(5)	4(1)		4(1)				
	Water opossum, <i>Chironectes minimus</i>			2(1)							
	Armadillo, <i>Dasyus novemcinctus</i>			1(1)		1(1)					
	Cottontail rabbit, <i>Sylvilagus</i> sp.			3(2)			1(1)				
	Pocket gopher, <i>Orthogeomys hispidus</i>					1(1)					
	Paca, <i>Agouti paca</i>					2(1)					
	Agouti, <i>Dasyprocta</i> sp.			2(1)							
	Porcupine, <i>Coendu</i> sp.				1(1)						
	Rodent, unidentified			22	68	5					
	Northern racoon, <i>Procyon lotor</i>			2(1)							
	New World leaf-nosed bat, <i>Phyllostomidae</i>			1(1)							
	Domestic dog, <i>Canis familiaris</i>		1(1)	6(1)	3(2)	3(1)	22(4)		1(1)		
	Carnivore, unidentified					1(1)					
	Peccary, unidentified	3(1)	4(1)			161(3)					
	White-tailed deer, <i>Odocoileus virginianus</i>		9(2)		4(1)	2(1)	9(2)		5(1)		
	Brocket deer, <i>Mazama americana</i>		2(1)								
	Deer, <i>Cervidae</i> , unid			1(1)							
	Mammal, unidentified	3	7	175		242	22				
	Mammal-large, unid		10	13							
	Mammal-large/med, unid			166	17	220	6		1		
Mammal-medium, unid			4			1					
Mammal-med/small, unid			33		5						
Mammal-small, unid			18	7							
Birds	Laughing falcon, <i>Herpetotheres cachinnans</i>			11(1)							
	Turkey, <i>Meleagris</i> sp.							4(1)			
	Scarlet macaw, <i>Ara macao</i>	2(1)									
	Cardinal, <i>Cardinalis</i> sp.				1(1)						
	Perching bird, <i>Passeriformes</i> , unid			1(1)							
	Bobwhite, <i>Colinus</i> sp.			11(2)							
	Doves/pigeons, <i>Columbidae</i>			1(1)							
	Barn owl, <i>Tyto alba</i>			3(1)							
Bird, unidentified	3	1	34	4							

Table 7.32. Continued.

		31A-9-1-1	31A-9-1-2	31B-11-1-1	31B-11-1-3	31B-14-2-1	31B-14-2-2	31D-1-4-1	31D-1-5-1	31D-1-6-1	31D-1-7-1
Reptiles	Mexican giant musk turtle, <i>Staurotypus</i> sp.	39(1)								1(1)	
	Mud turtle, <i>Kinosternon</i> sp.				2(1)	2(1)	1(1)				
	Mesoamerican river turtle, <i>Dermatemys mawii</i>			6(1)						2(1)	
	Pond turtle, <i>Trachemys scripta</i>				1(1)	2(1)	1(1)				
	Turtle, Testudines, unid	18		3	2		1			8	
	Lizard, Sauria, unid			3(1)	1(1)				1(1)		
	Rattlesnake, <i>Crotalus durissus</i>			1(1)							
	Viper, Viperidae, unid			1							
	Reptiles, unidentified			3							
Amph	Toad, <i>Bufo</i> sp.				5(1)						
	Toad/frog, Anura, unid			9(2)							
Fish	Freshwater fish, Cichlidae			2(1)							
	Bony fish, Osteichthyes			3			14				
Molluscs	Freshwater mussel, Unionidae			30(1)	9(1)	1(1)			1(1)	2(2)	
	Freshwater clam, <i>Nephronaias</i> sp.			1(1)	1(1)			1(1)			
	Apple snail, <i>Pomacea flagellata</i>			1(1)	9(1)						
	Univalve, Gastropoda			1(1)							
	Tree snail, <i>Orthalicus</i> sp.			1(1)	1(1)						
	Vertebrate, Vertebrata, unid	70	40	72	29	52	6		3		1
	Total Identified NISP(MNI)	69(4)	34(5)	635 (29)	140 (14)	648 (12)	82(15)	1(1)	13(5)	13(3)	1(0)

Table 7.34. Frequencies of unmodified animal bone and shell.

Lot No.	Bag No.	Bone freq	Shell freq
AG30A-1-0-1	118	1	
AG30A-1-0-2	102	7	
AG30A-1-0-3	109	23	
AG30A-2-0-1	107, 119	32	
AG30A-3-0-1	106	1	
AG30A-5-1-1	110	6	1
AG30A-5-2-1	113, 116	4	2
AG30B-1-2-1	132,192,194, 97	96	1
AG30B-1-2-2	189, 196	20	
AG30B-1-2-3	191	8	
AG30B-2-1-1	153	34	
AG30B-4-1-1	129	3	
AG30B-4-2-1	116,156,187	348	2
AG30B-4-2-10	195	2	
AG30B-4-2-12	173, 193	8	
AG30B-4-2-13	165		1
AG30B-4-2-14	175	9	
AG30B-4-2-16	145183	145	1
AG30B-4-2-3	110	3	
AG30B-4-2-4	114	1	
AG30B-4-2-5	122, 190	20	1
AG30B-4-2-6	125	3	
AG30B-4-2-8	138	5	
AG31A-1-0-1	189		1
AG31A-2-0-1	113	2	
AG31A-3-0-1	104	1	
AG31A-4-0-1	108	43	
AG31A-5-0-1	118	1	
AG31A-9-2-1	134,234,236	100	
AG31A-10-1-2	235	4	
AG31A-10-2-1	131	1	1
AG31A-11-1-2	175	108	
AG31A-12-1-1	138	2	
AG31A-12-2-1	146,148,230	33	2
AG31A-12-2-2	168	34	
AG31A-13-2-1	231	1	
AG31A-13-3-1	150	4	1
AG31A-13-3-1&2	187		1
AG31A-13-3-3	233	4	
AG31A-13-3-4	177	5	
AG31A-13-3-5	178	1	
AG31A-13-3-6	191		2
AG31A-14-2-1	232	2	

AG31A-14-4-1	214		1
AG31A-14-5-1	220		2
AG31A-14-5-4	223		1
AG31A-14-6-1	226	6	
AG31B-1-0-1	372	3	
AG31B-10-1-1	292	59	2
AG31B-1-0-3	109	7	
AG31B-1-0-4	112	1	
AG31B-2-0-1	114	6	
AG31B-3-0-1	117	1	
AG31B-4-0-1	110	0	1
AG31B-4-2-2	102	15	
AG31B-5-0-1	190	1	
AG31B-6-1-1	120, 128	37	
AG31B-6-1-2	370, 371	4	
AG31B-6-1-3	179	3	
AG31B-6-2-1	132, 219	4	
AG31B-6-3-1	141, 146	6	2
AG31B-6-4-1	160,234,256	10	1
AG31B-6-4-2	154	3	
AG31B-6-5-1	376	3	
AG31B-6-5-2	177	3	
AG31B-6-6-1	206, 237	15	
AG31B-6-6-4	235	2	
AG31B-6-7-1	225	9	
AG31B-6-7-2	228	3	
AG31B-6-8-1	240	1	
AG31B-7-1-1	122, 124	21	
AG31B-7-1-2	130	3	
AG31B-7-2-4	270	3	
AG31B-7-3-1	134, 271	35	
AG31B-7-5-2	197, 377	8	
AG31B-7-5-4	184, 253	18	
AG31B-7-5-5	218, 265	13	
AG31B-7-5-6	247	1	
AG31B-7-5-7	248, 249	44	
AG31B-7-5-8	267	18	
AG31B-7-5-9	264	2	
AG31B-8-1-1	204	1	
AG31B-8-1-2	244	22	
AG31B-8-2-1	169, 233	3	
AG31B-8-2-2	168	1	
AG31B-9-1-1	290	20	2
AG31B-9-1-2	331	23	
AG31B-9-2-1	299	11	
AG31B-9-3-1	304	2	
AG31B-9-4-1	310	127	4
AG31B-9-5-1	332, 373	22	

Table 7.33. Continued.

Lot No.	Bag No.	Bone freq	Shell freq
AG31B-11-1-1	289	677	3
AG31B-11-1-3	338, 375	145	2
AG31B-12-1-1	286	69	3
AG31B-13-1-1	325	84	
AG31B-14-2-1	324, 374	852	32
AG31B-14-2-2	363	169	2
AG31C-1-0-1	112	24	
AG31C-2-0-1	121	3	1
AG31C-3-0-1	103	6	
AG31C-4-0-1	108	16	1
AG31C-5-0-1	109, 124	65	
AG31C-7-1-1	143, 149	5	
AG31C-8-1-1	150	167	2
AG31C-8-2-1	154, 156	79	1
AG31C-10-1-1	130, 133	154	2
AG31C-11-1-1	157	420	
AG31D-1-4-1	116	1	
AG31D-1-5-1	131		1
AG31D-1-6-1	142	8	
AG31D-1-7-1	150	1	
AG31D-2-2-1	124	4	11
AG31D-3-1-1	135	5	
AG31D-4-1-1	147, 212	27	
AG31D-4-2-2	154	1	
AG31D-5-2-1	174, 207	23	
AG31D-5-2-3	190, 213	1	1
AG31D-5-3-1	204	1	
AG31D-6-2-1	161	4	
AG31D-7-3-1	180	5	
AG31D-8-0-1	185	2	
AG31E-1-1-1	101	10	
AG31E-1-2-1	105, 124	2	
AG31E-1-3-1	112	1	
AG31E-1-5-1	120	1	
TOTAL		4757	95

Table 7.35. Worked bone and shell from the Aguateca *grietas*, by lot. D = diameter. Dimensions in cm. Taxa identification by Dr. Kitty Emery and Michelle LeFebvre.

Artifact No.	Lot No.	Description	Taxa	Freq	Dimen.	Wt (g)
161	AG30B-4-2-1	Carved plaque with serpent image	Mammalia, large; tibia	1	5.2 x 8.9, 0.1 – 0.2 thick	n/a
148	AG30B-4-2-10	Rectangular mosaic piece	Psoroniaias sp	1	1.35 x 0.65 x 0.1	< 1 g
183	AG30B-4-2-16	Needle	Mammalia, large; long bone	1	4.05 x 0.35 x 0.02	< 1 g
115	AG31A-2-0-1	Perforated disk, fragment (spindle whorl)	unidentified	1	4.0 D x 0.6, hole D 0.6	3.0
192	AG31A-4-0-1	O-shaped disk (circlet)	unidentified	1	0.7 D x 0.1, hole D 0.35	< 1 g
186	AG31A-5-0-1	Perforated disk, complete (spindle whorl)	Dermatemys mawii	1	4.0 D x 0.7, hole D 0.6	6.5
186	AG31A-5-0-1	Perforated disk fragment (spindle whorl)	Dermatemys mawii	1	4.1 D x 0.5, hole D 0.65	5.0
186	AG31A-5-0-1	Perforated disk fragment (spindle whorl)	Dermatemys mawii	1	4.8 D x 0.4, hole D 0.55	3.5
175	AG31A-11-1-2	Rasp	human femur	1	7.7 x 5.1 x 3.3	36.5
161	AG31A-11-2-1	Apple snails, 2 of 3 are perforated	Pomacea flagellata	1	3 holes	14.5
161	AG31A-11-2-1	Apple snails, 2 of 3 are perforated	Pomacea flagellata	1	1 hole	12.5
193	AG31A-11-2-1	Awl, complete	Odocoileus virginianus; metapodial	1	10.3 x 1.3 x 0.6	7.0
148	AG31A-12-2-1	Needle	Mammalia; long bone	1	11.4 x 2.5 D	1.0
228	AG31A-12-2-1	Needle	Mammalia; long bone	1	7.7 x 0.3 x 0.25	1.0
170	AG31A-12-2-2	Polished bone fragment with 9 holes	Mammalia; long bone	1	5.0 x 0.9 x 0.2	1.5
151	AG31A-13-3-1	Pick (?) with carved end	Mammalia, large; long bone	1	4.4 x 1.1 x 0.4	2.5
220	AG31A-14-5-1	Clam shell, 2 perforations	Psoroniaias sp.	1	n/a	7.0
220	AG31A-14-5-1	Clam shell, 1 perforation	Psoroniaias sp.	1	n/a	2.0
147	AG31B-6-4-1	Unidentified modified bone	unidentified	1	n/a	n/a
194	AG31B-7-4-4	Awl (?)	unidentified	1	9.7 x 1.4 x 0.5	9.7
194	AG31B-7-4-4	Finger ring	Strombus spp. (?)	1	0.4 x 2.4 D, hole D 1.8	1.0
215	AG31B-7-5-4	Crudely cut thin bone	unidentified	1	9.1 x 0.7 x 0.3	9.1
246	AG31B-7-5-4	Perforated disk, complete (spindle whorl)	unidentified	1	4.2 D x 0.55, hole D 0.6	n/a
218	AG31B-7-5-5	Pick (?)	unidentified	1	6.4 x 0.5 (approx)	6.4
312	AG31B-9-5-2	Needle	Mammalia, large; long bone	1	13.9 x 0.5 x 0.3	2.5

Table 7.35. Continued.

Artifact No.	Lot No.	Description	Taxa	Freq	Dimen.	Wt (g)
312	AG31B-9-5-2	Perforated animal teeth	Tayassu tajacu	1	3.0 x 1.0 x 0.5	0.5
312	AG31B-9-5-2	Perforated animal teeth	Tayassu tajacu	1	3.0 x 1.0 x 0.5	0.5
303	AG31B-11-1-1	Carved disk, flower shape	Psoroniaias sp.	1	2.3 D x 0.4	2.0
313	AG31B-11-1-1	Needle	Mammalia; long bone	1	6.0 x 0.4 x 0.3	0.5
335	AG31B-11-1-3	Needle	Mammalia; long bone	1	15.4 x 0.6 x 0.2	15.4
335	AG31B-11-1-3	Needle	Mammalia; long bone	1	5.5 x 0.3 x 0.15	5.5
337	AG31B-11-1-3	O-shaped disk	Strombus spp.	1	4.0 D x 0.15, hole D 2.2	4.5
337	AG31B-11-1-3	Pendant, carved and perforated, arch shape	Strombus spp.	1	4.1 D x 0.35	2.5
337	AG31B-11-1-3	Tinkler, perforated	Oliva reticularis	1	2.6 x 1.1	3
286	AG31B-12-1-1	Pick	Mammalia; long bone	1	3.7 x 0.5 x 0.15	0.5
286	AG31B-12-1-1	Pick with carved end	Mammalia; long bone	1	6.2 x 0.45 x 0.25	1.5
357	AG31B-14-2-1	Pick with carved end	Mammalia; long bone	1	15 x 0.55 x 0.45	5.5
357	AG31B-14-2-1	Tube, 2 perforations on opposite sides	Mammalia; long bone	1	6.2 x 1.45 D, hole D 0.3	4
357	AG31B-14-2-1	Worked long bone	Mammalia; long bone	1	6.15 x 2.2 x 1.3	5
357	AG31B-14-2-1	Tube	Mammalia; long bone	1	3.8 x 1.8	3
324	AG31B-14-2-1	Shell with 2 perforations	Nephronaias sp.	1	3.7 x 2.4 x 0.7	1.5
349	AG31B-14-2-1	Spatula fragment	Mammalia, large; long bone	1	4.4 x 0.95 x 0.2	1
363	AG31B-14-2-2	Long bone cut laterally (Emery notes is debitage)	Odocoileus virginianus; metapodial	1	17.3x1.5x2.8	24
359	AG31B-14-2-2	Long pick with hand carved at end	Mammalia, large; long bone	1	28.7 x 2.0 x 0.8	19.5
360	AG31B-14-2-2	Pick with carved end	Mammalia; long bone	1	16.8 x 0.5 x 0.4	4.5
113	AG31C-2-0-1	Shell ornament	unidentified	1	n/a	n/a
143	AG31C-7-1-1	Tube, complete	Canis familiaris, radius	1	2.9 x 1.2	3.5
143	AG31C-7-1-1	Tube fragment, Carved end	unidentified	1	3.6 x 1.0 x 0.2	< 1.0
125	AG31C-9-1-1	Awl, complete	Odocoileus virginianus; radius	1	12.0 x 2.6 x 1.3	12.0
131	AG31C-9-1-1	Solid disk	Strombus spp.	1	1.6 D x 0.3	1.5

Table 7.35. Continued.

Artifact No.	Lot No.	Description	Taxa	Freq	Dimen.	Wt (g)
117	AG31D-1-4-1	Spatula (?) fragment	Mammalia; long bone	1	5.5 x 0.6 x 0.2	1
128	AG31D-1-5-1	Cut distal end	Odocoileus virginianus; humerus	1	8.8 x 3.8, inner hole D 2.0	38.5
142	AG31D-1-6-1	O-shaped disk fragment	Strombus spp.	1	3.0 x 0-.15, hole D 2.0	< 1.0
145	AG31D-1-6-2	Spatula (?) fragment	Mammalia; long bone	1	5.0 x 1.5 x 0.25	1.5
145	AG31D-1-6-2	Perforated animal tooth	unidentified	1	n/a	< 1.0
122	AG31D-2-2-1	Spatula (?) fragment	Mammalia, large; long bone	1	6.6 x 1.4 x 0.3	5.0
148	AG31D-4-1-1	Tube with perforation	Odocoileus virginianus; humerus	1	10.2 x 1.9 D	18.5
148	AG31D-4-1-1	Tube	unidentified	1	5.7 x 1.1 x 0.6	2.5
174	AG31D-5-2-1	Needle	Mammalia; long bone	1	3.5 x 0.3 x 0.2	< 1.0
174	AG31D-5-2-1	Pick	Mammalia; long bone	1	4.9 x 0.55 x 0.5	1.5
192	AG31D-5-2-3	Rasp	Odocoileus virginianus; tibia	1	18.4 x 2.4 x 1.7	52.5
192	AG31D-5-2-3	Spatula, complete	Mammalia	1	16.4 x 1.2 x 0.2	6
192	AG31D-5-2-3	Awl, fragment	Mammalia	1	6.2 x 1.8 x 1.3	5.5
105	AG31E-1-2-1	Awl (?)	unidentified	1	6.2 x 2.7 x 0.5	n/a
111	AG31E-1-3-1	Polished	Mammalia, large; long bone	1	n/a	n/a
111	AG31E-1-3-1	Pick (?)	Mammalia, large; long bone	1	15.2 x 1.5	n/a

Table 7.36. Comparison of the frequencies of modified bone and shell artifacts from cave sites and the Aguateca surface site.

	Bone	Shell	Total
San Pablo Cave (Lee & Hayden 1988)	0	8	8
Cueva No.2 Arroyo de Piedra (Brady et al. 1994)	1	0	1
Candelaria system (Carot 1989)	2	0	2
Cueva Kaxon Pec (Brady et al. 1994)	4	1	5
Cueva Río Duende (Brady et al. 1994)	5	1	6
Cueva de El Duende (Brady et al. 1994)	10	8	18
Eduardo Quiroz Cave (Pendergast 1971)	10	1279	1289
Petroglyph Cave (Reents-Budet & MacLeod 1997)	11	512	523
Cueva de Río Murciélago (Brady et al. 1994)	18	14	32
Actun Balam (Pendergast 1969)	25	18	43
Cueva de Los Quetzales (Brady et al. 1994)	32	15	47
Naj Tunich (Brady 1989)	36	15	51
Actun Polbilche (Pendergast 1974)	43	199	242
Aguateca grietas	51	15	66
Cueva de Sangre (Brady et al. 1994)	84	359	443
Aguateca surface site (Inomata 1995)	148	503	651

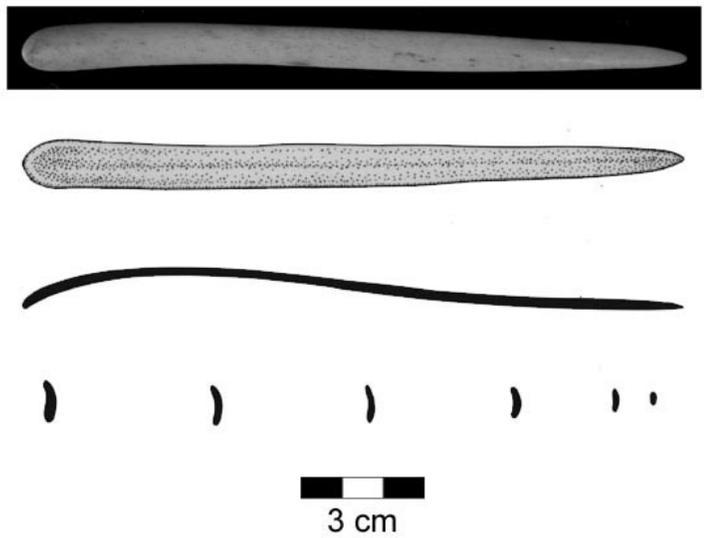


Figure 7.34. Spatula (#192 AG31D-5-2-3), unidentified mammal bone.

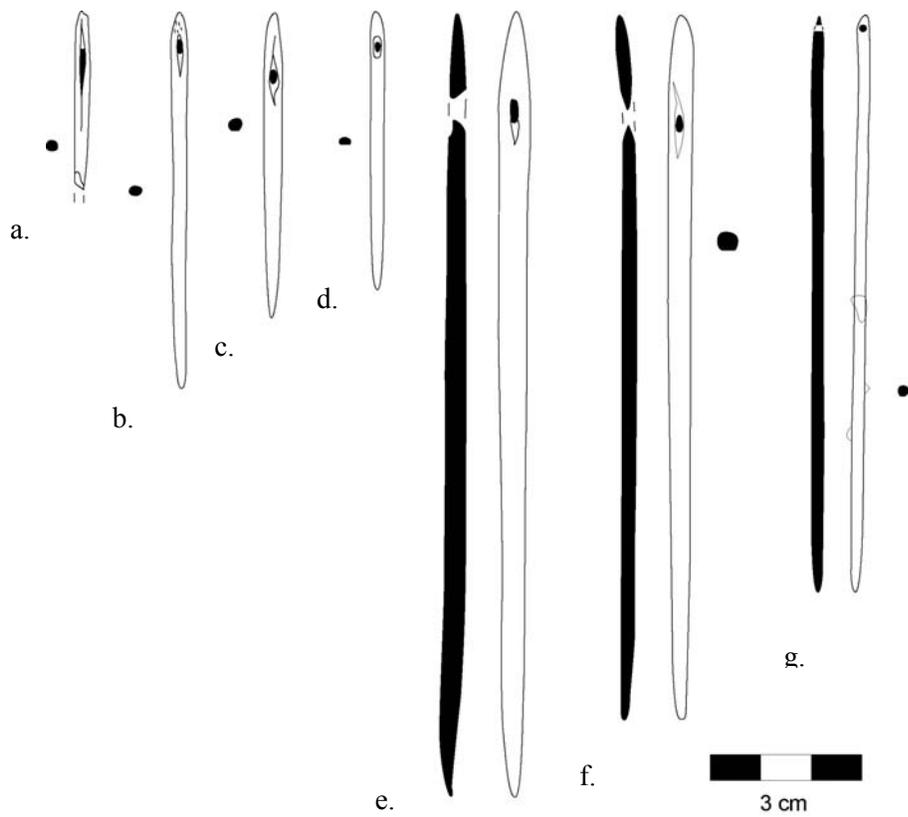


Figure 7.35. Bone needles: a. #174 AG31D-5-2-1; b.#148 AG31A-12-2-1; c. #313 AG31B-11-1-1; d-e. #335 AG31B-11-1-3; f. #312 AG31B-9-5-2; g. #228 AG31A-12-2-1.

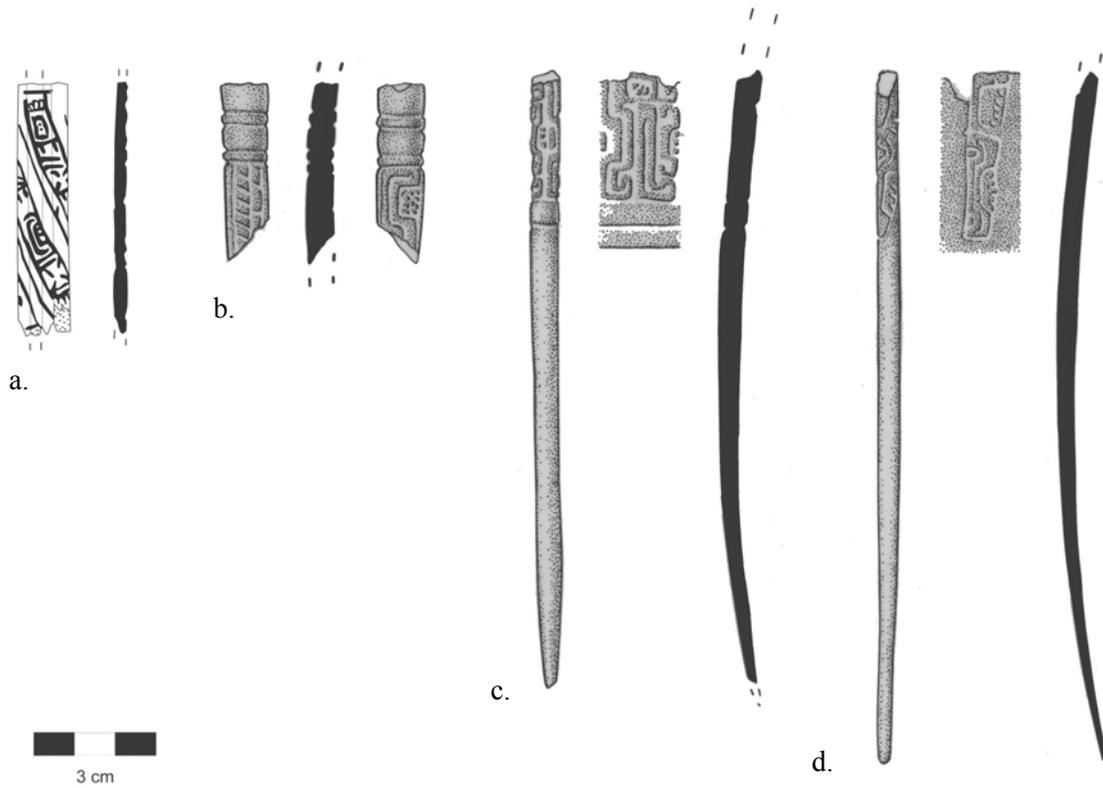


Figure 7.36. Bone picks with carved distal ends: a. #286 AG31B-12-1-1; b. #151 AG31A-13-3-1; c. #357 AG31B-14-2-1; d. #360 AG31B-14-2-2. Drawings (b-d) by Alfredo Román.

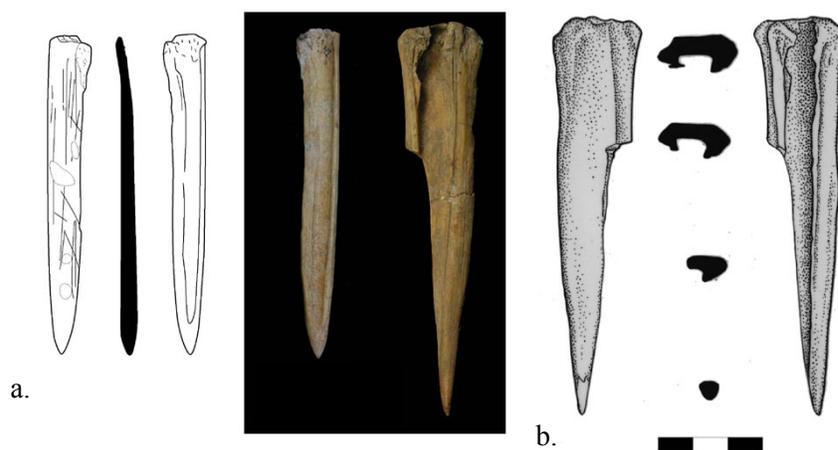


Figure 7.37. Awls: a. #193 AG31A-11-2-1; b. #125 AG31C-9-1-1. Drawing (b) by Alfredo Román. Photo shows both a and b.



Figure 7.38. Bone pin with a carved human hand (#359 AG31B-14-2-2). Drawing by Alfredo Román.

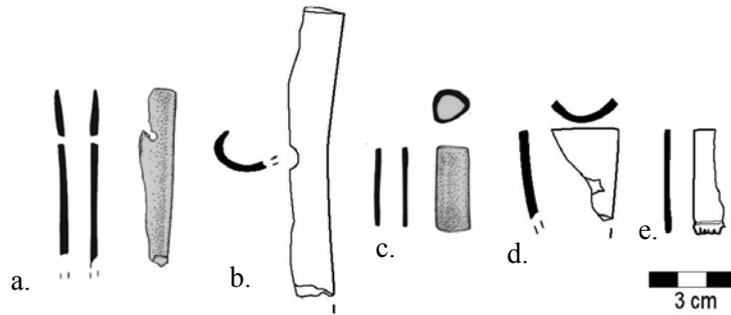


Figure 7.39. Bone tubes: a. mammal long bone, 2 perforations on opposite sides, #357 AG31B-14-2-1; b. humerus of white-tailed deer, 1 perforation, #148 AG31D-4-1-1; c. radius of a *Canis familiaris*, bead, #143 AG31C-7-1-1; d. #278 AG31B-6-4-1; e. #143 AG31C-7-1-1. a and c are illustrations by Alfredo Román.

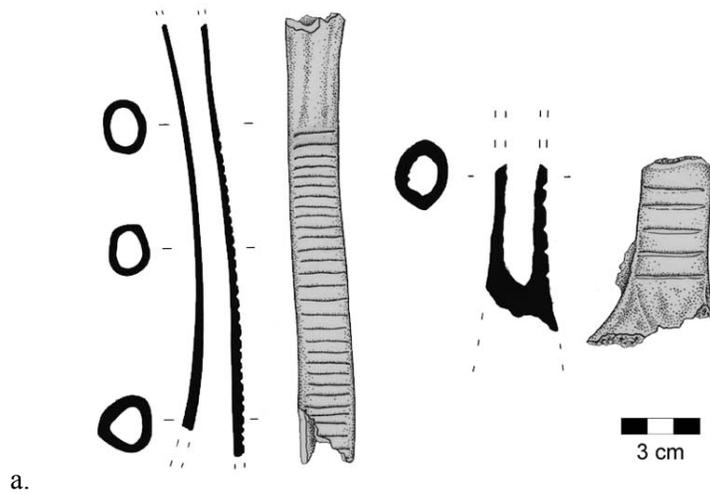


Figure 7.40. Bone rasps: a. #175 AG31A-11-1-2; b. #192 AG31D-5-2-3. Drawings by Alfredo Román.

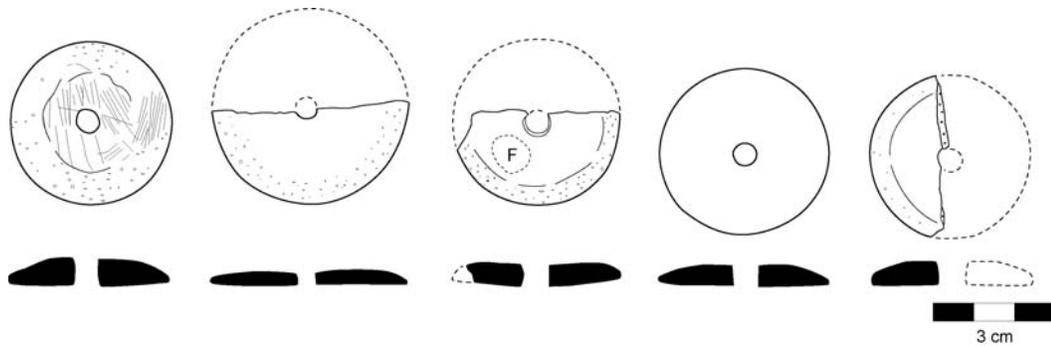


Figure 7.41. Centrally perforated bone disks: a-c. #186 AG31A-5-0-1; d. AG31B-7-5-4; e. #115 AG31A-2-0-1. F signifies flowstone coverage.

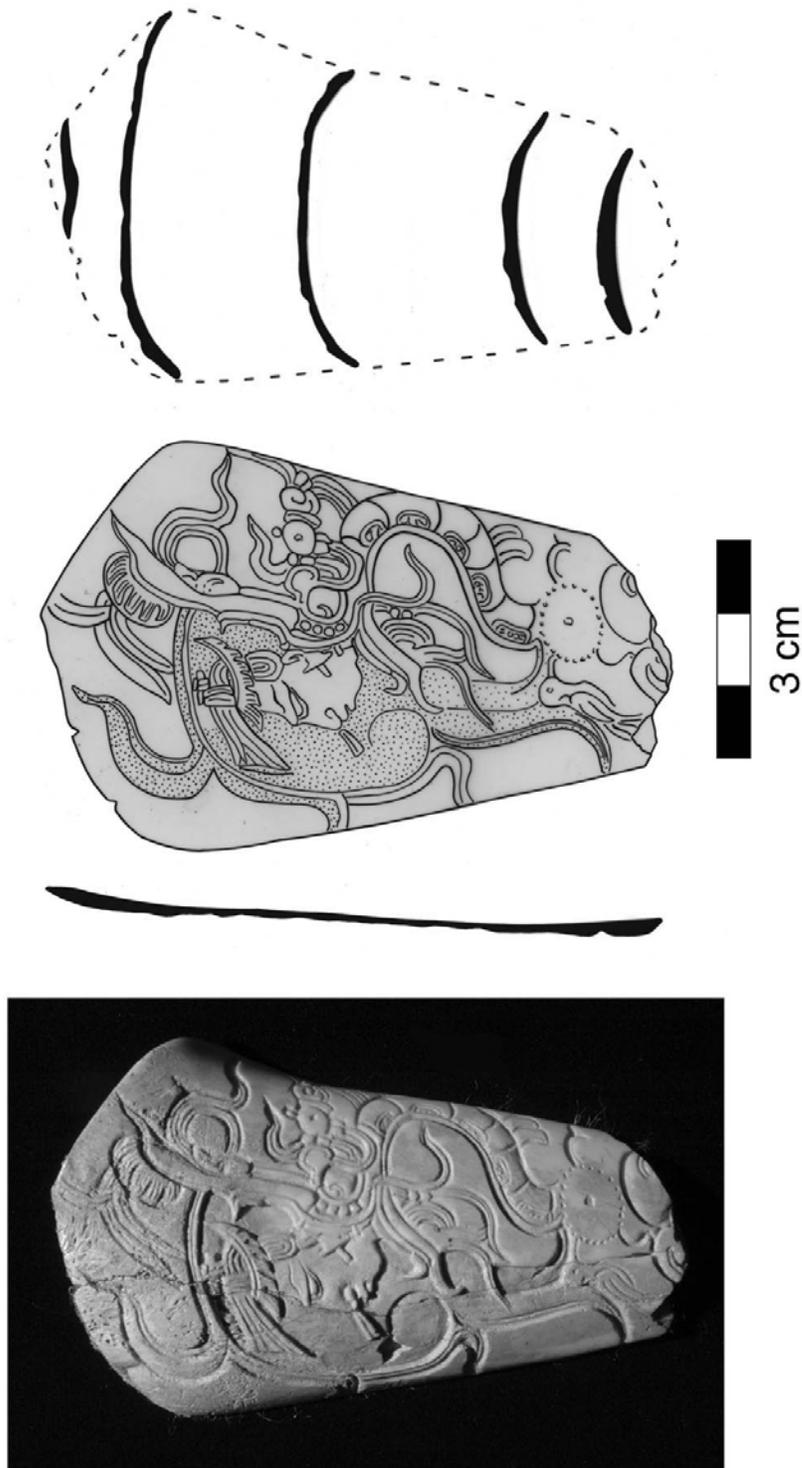


Figure 7.42. Intricately carved bone plaque (#161 AG30B-4-2-1). Broken at bottom in antiquity. Photo by Takeshi Inomata, drawing by Alfredo Román.

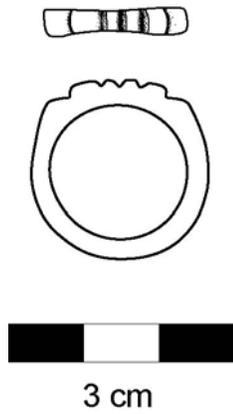


Figure 7.43. Finger ring made of conch (?) (#194 AG31B-7-4-4).

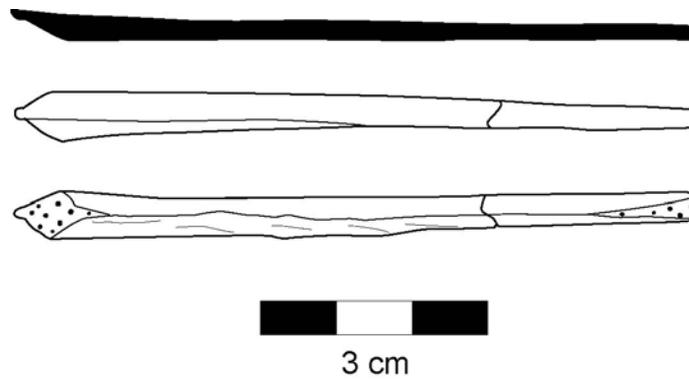


Figure 7.44. Thin, crudely cut pointed bone (#215 AG31B-7-5-4).

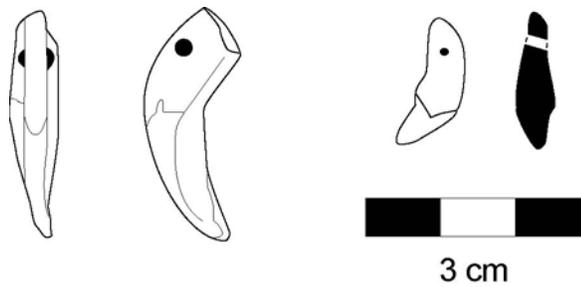


Figure 7.45. Perforated animal teeth: a. Collared peccary, maxillary canine, one of a pair, #312 AG31B-9-5-2; b. Domestic dog (?), canine, #145 AG31D-1-6-2.

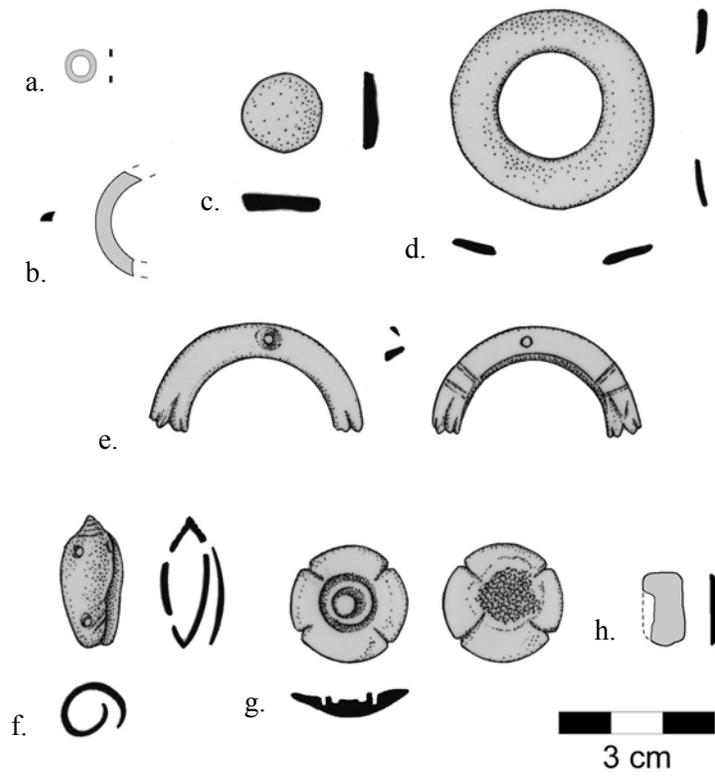


Figure 7.46. Ornamental marine and freshwater shell artifacts: a. unidentified shell, thin O-shaped disk, #192 AG31A-4-0-1; b. *Strombus* sp. (conch)open disk, #142 AG31D-1-6-1; c. *Strombus* sp. disk, #131 AG31C-9-1-1; d-e. *Strombus* sp., #337 AG31B-11-1-3; f. *Oliva reticularis*, “tinkler” with three perforations, #337 AG31B-11-1-3; g. conch (?), #303 AG31B-11-1-1; h. *Psoroniaias* sp., inlay piece #148 AG30B-4-2-10. Drawings c-g are by Alfred Román.

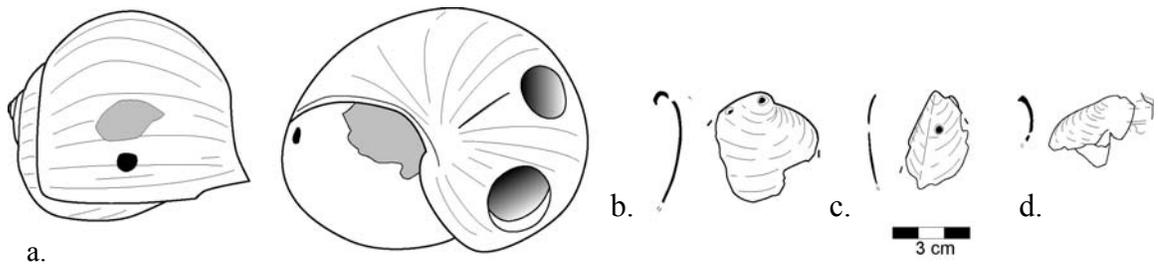


Figure 7.47. Ornamental freshwater shell artifacts: a. *Pomacea flagellata*, three perforations, 2 of 3 similar shells are perforated, #161 AG31A-11-2-1; b-c. *Psoroniaias* sp., two and one perforations, respectively, #220 AG31A-14-5-1; d. *Nephronaias* sp., two perforations, #324 AG31B-14-2-1.

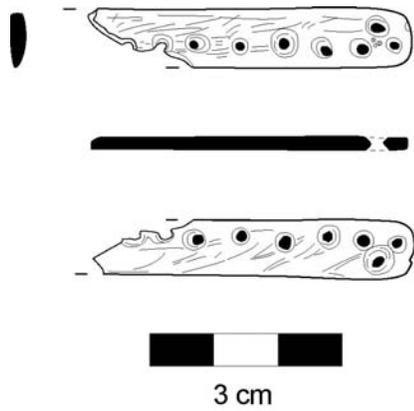


Figure 7.48. Polished bone object with nine biconically drilled holes (#170 AG31A-12-2-2).

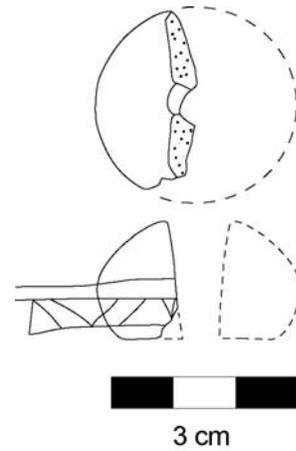


Figure 7.51. Incised, ceramic spindle whorl fragment (#311 AG31D-8-2-1).

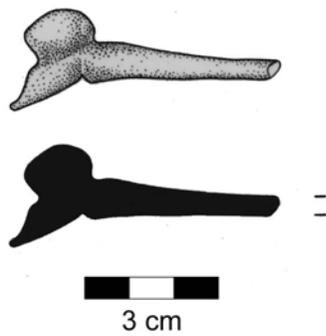


Figure 7.49. Modified animal bone object of unknown function (#357 AG31B-14-2-1). Drawing by Alfred Román.

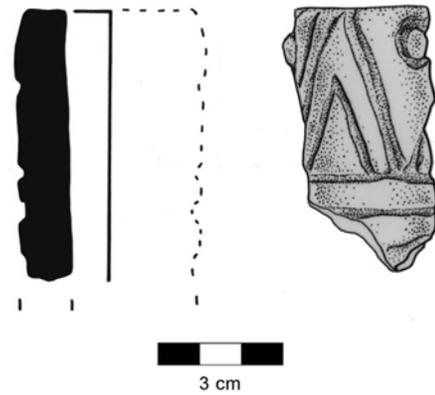


Figure 7.52. Cylindrical stamp fragment with remnants of red pigment on exterior surface (#345 AG31B-14-2-1). Drawing by Alfredo Román.

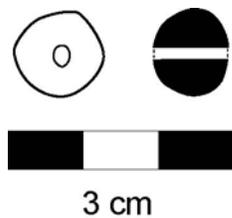


Figure 7.50. Ceramic bead (#319 AG31B-10-1-1).

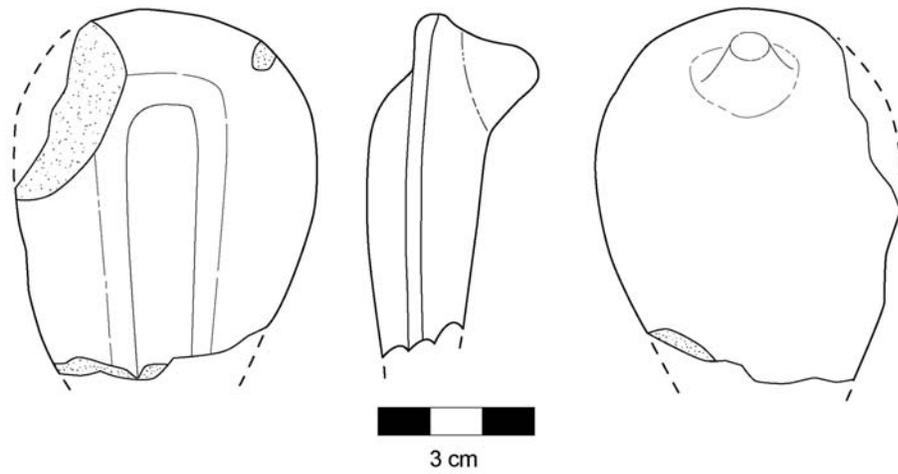


Figure 7.53. Unidentified ceramic object (#214 AG31D-1-6-1).

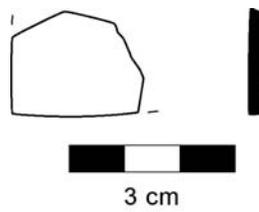


Figure 7.54. Pyrite mirror mosaic piece (#344 AG31B-11-1-3).

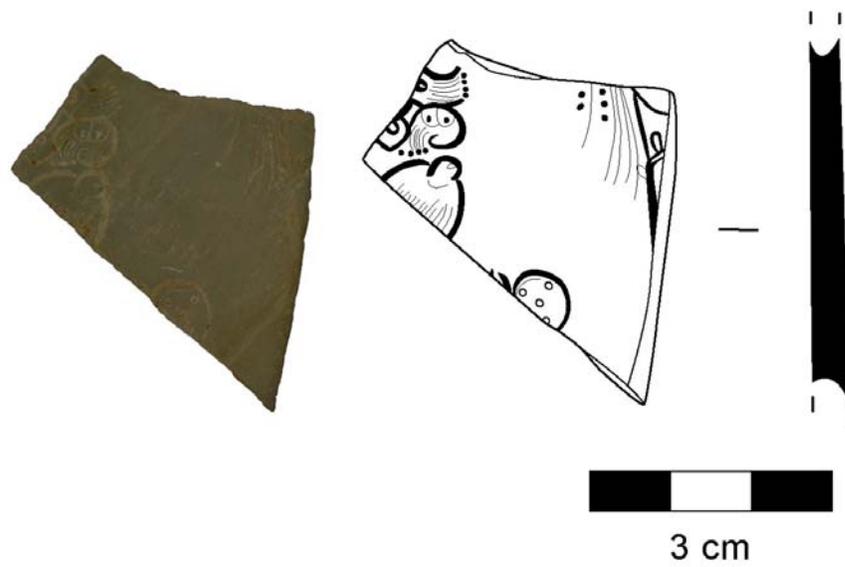


Figure 7.55. Body sherd of a white stone vessel, with incisions on the sherd exterior.



Figure 7.56. Red pigment (cinnabar?) and unidentified stucco object: a. close up photo of red pigment and Tinaja Red or Pantano Impressed jar sherds on which it adheres (lots AG31D-1-5-1 and 1-6-1); b. red pigment and limestone rock on which some pigment adheres (lot AG31B-9-4-1); c. unidentified stucco object (lot AG31B-11-1-3).

CHAPTER 8

SOCIAL PROCESSES MANIFESTED IN GRIETA ACTIVITIES

In this chapter, I discuss several aspects of activities that took place in the *grietas*. I first lay out the historical framework of *grieta* use, examining it in the context of the settlement and political history of Aguateca. I then focus on the performative dimensions of ritual practices, namely feasting activities and musical performances. The third section looks at social processes, in particular, gender relations manifested in the cultural practices carried out in the *grieta*. The final section discusses transformation of spatial use informed by possible cultural and symbolic significances of the activities as suggested by the archaeological materials and morphological characteristics of the spaces.

Temporal Dimension of Grieta Use

Preclassic Use

Excavations confirmed Preclassic use of a few areas both in the Grieta Principal and the Grieta Rincón, based on the presence of Late Preclassic ceramic types in stratigraphically controlled contexts. Some excavation units did yield limited quantities of Preclassic sherds, but their presence amidst later ceramic types does not provide evidence for earlier use. The most prominent area of use during the Late Preclassic period was encountered in the Alcove (initially referred to as Passage 5) (Unit 13) of the Hidden Jar Area, which is located at the northwestern end of the area at the top of the slope between the Inner Chamber and the Outer Chamber (see **Figure 6.2**). A low platform about two courses high had been constructed along the southern limit of the alcove, plausibly functioning as an altar table atop which offerings of ceramic sherds, carved bone, lithics, shell, and human bone were deposited. The carbon and ash lens found across the top of this altar dated to the Early Classic (calAD 383 - 539, 2-sigma calibration, AA68566), which suggests that the sherd clusters below it (which contained Achiotes Unslipped, Sierra Red,

Flor Cream, Polvero Black) to be of an early Early Classic or Late Preclassic date while those immediately above it are later.

Windy Valley is another area where early use was confirmed. Interment #53 (lot AG31E-1-5-3), located at the deepest point of excavation in this unit, probably dates to the Late Preclassic (associated with Sierra Red, Flor Cream, Quintal Unslipped ceramics) while the level above it (lot AG31E-1-4-3, ceramics recovered consist of Flor Cream, Quintal Unslipped, Aguila Orange, Caribal Red) likely dates to the Early Classic. The Quintal Unslipped sherds in both lots are single body sherds, so their typological identification, hence reliability as temporal indices, is uncertain. Bedrock was not reached in this unit nor most other excavated areas in the *grietas*, so the possibility remains of finding more Preclassic and even earlier cultural material.

It should be noted that a rigid correlation of certain ceramic types with Late Preclassic and Early Classic periods presents a potential problem. This is because, in reality, there must have been some overlapping use of ceramic types during the time period between what we refer to as the Late Preclassic and Early Classic. For example, Sierra Red, Flor Cream, and other Late Preclassic types continued to be in use after AD 300, or what is considered the beginning of the Early Classic, in the Pasión area (Bachand 2006:301; Lincoln 1985), southeastern Petén (Laporte 1995a; Laporte 1995b), Belize River Valley (Laporte 1995a), and possibly elsewhere.

Early Classic Use

As noted above, the Alcove in the Hidden Jar Area and the Windy Valley continued to be used during the Early Classic. Early Classic use of the Alcove was represented by the sherd clusters found above the radiocarbon dated carbon and ash lens. In the Windy Valley, Early Classic material was found (lot 31E-1-4-3) above the level that contained the interment.

Additional areas were utilized during the Early Classic period. The platform feature inside the cave at Grieta Rincón was constructed either during the later part of the Late Preclassic

or early part of the Early Classic, based on the sherds contained within the fill, which consisted of types Achiotes Unslipped, Sapote Striated, and Quintal Unslipped. Limited quantities of Early Classic sherds were also found from the units (Units 1 and 4) outside the cave at Grieta Rincón, particularly in the lowest levels (lots AG30B1-2-3, AG30B-4-2-13 and AG30B-4-2-16). Early Classic use of Grieta Rincón would be contemporaneous with use of Barranca Escondida and the surrounding area where stelae associated with the earlier Tamarindito dynasty were found. This finding is not surprising as the two subterranean features are practically adjacent to each other.

The Hidden Jar Area, both the Inner Chamber and Outer Chamber (see **Figure 6.2**), was probably the central focus of ritual activities during the Early Classic as evidenced by the higher proportion of Early Classic ceramics found throughout the entirety of the area. In the Inner Chamber, a relatively high frequency of Early Classic and Late Preclassic ceramics was found. The Outer Chamber also contained some of these earlier ceramics, suggesting use of this area likewise dates back to this time as well. The predominance of Early Classic types such as Dos Arroyos Orange Polychrome, Aguila Orange, Balanza Black, Caribal Red, and Quintal Unslipped compared to Late Preclassic types may indicate more intense or more frequent use during the Early Classic. Alternatively, the Late Preclassic type ceramics may simply have continued to be in use during the early part of the Early Classic (Bachand 2006:301; Laporte 1995a; 1995b; Lincoln 1985). Another observation of interest is the finding of sherds from the same Dos Arroyos Polychrome vessel in two different areas of the Inner Chamber, in the niche west of Wall 4 and in the area in front of the stalagmite (see **Figure 6.5**). The relative locations suggest that the cause of the movement was not natural and likely had been redeposited intentionally. A radiocarbon date from a charcoal and ash lens in the area in front of the stalagmite revealed calAD 555 – 658 (2-sigma, AA71120), so by the end of the Early Classic or into the Tepeu 1 phase of the Late Classic, ritual activities had started to be conducted in this area.

The open chamber on Chill Hill may have seen very minimal Early Classic use. This is based on some Triunfo Striated jar and Flor Cream sherds that were found in the lowest stratum of Unit 1, below a level that has been radiocarbon dated to the Tepeu 1 to 2 phase of the Late Classic. The quantity of cultural material from this level was very limited, suggesting that any use of this area during this earlier time period would have been minimal.

Evidence for Early Classic use is intriguing, as occupation at Aguateca during this time period was practically non-existent (Inomata 1997:338). As data from the Barranca Escondida area (Eberl 2000a; 2000b; 2003) suggest, use of the Grieta Rincón and Grieta Principal may have been part of visits to important ritual loci, possibly pilgrimage rituals due to the lack of proximal settlement, by people living under the reign of the Tamarindito – Arroyo de Piedra dynasty. However, the limited quantity of material from this time period suggests that the *grietas* were not visited frequently or were not of prime importance to Tamarindito and/or the local people.

Late Classic Use

During the Late Classic period, use of the *grieta* expanded to encompass almost all areas throughout the Grieta Principal. Grieta Rincón was used intensively as well, though it is unclear whether the interior of the cave was visited often during this time. The overall sheer quantity of sherds suggests a more intensive use, whether due to a larger number of people visiting the *grieta*, more frequent use, or both. Late Classic use is evidenced in all the operation loci but most prominently in the Two Owls Area, the Chill Hill Area, the Hidden Jar Area, and the Southern Entrance Area of the Grieta Principal, and in the *grieta* portion of Grieta Rincón.

Passage 1 in the Two Owls Area was the central focus of activities at this time, though the chamber adjacent to the passage also served as an integral ritual setting, as the architectural modifications are located in the chamber. Moreover, the importance of the Two Owls Area is attested to by the spatial modification carried out there by means of architectural constructions.

The architectural features date to the Late Classic, contemporaneous with the major constructions on the surface site, likely complementing the ceremonial Main Plaza built adjacent to this subterranean space. It is plausible that this area was the preferred space in the *grieta* for ritual activities once the Aguateca capital was established in the early 8th century. Use of this area diminished after Ruler 4 of Dos Pilas was captured by Tamarindito in AD 761, based on the limited frequency of ceramic groups that appear after this date, namely Chablekal Fine Gray, Andres Red, and Zopilote Smudged (Foias 1996:428-432, 487, 619; Foias and Bishop 1997:283). As Inomata (personal communication, 2007) noted, this reduction in use of the Two Owls Area may be part of a larger pattern of spatial transformation caused by the building of defensive walls at the site. The defensive walls may have re-arranged spatial organization and activities, and the Main Plaza and Causeway may have lost much of their ceremonial functions.

In the Chill Hill Area, excavations of a well-stratified unit (Unit 1) provide us with a clear temporal sequence of events. One of the earlier uses in this wide space (lot AG31D-1-6-2) possibly dates to the Tepeu 1 phase of the Late Classic. A Saxche Orange Polychrome plate conforms to the Tepeu 1 form, and the radiocarbon date of calAD 640 - 766 (2-sigma, AA68571) lends some support to this temporal placement. Yet a high frequency of the later ceramic type of Chablekal Gray was found in this lower stratum and those above, pointing to focused use of this area after Dos Pilas Ruler 4's capture when Aguateca became the sole capital. Again, as noted above, this may relate to the changes in spatial organization at Aguateca. Almost a third of the partial and whole vessels (n=13 of 38) were recovered from Unit 1, which was located in the open area. The sherds that comprise the reconstructible vessels are relatively large pieces, which is important to note because if objects were tossed in from the surface site about 30 meters above, then one would expect the vessels to have smashed into small sherds and dispersed. Moreover,

the multiple concentrated areas of charcoal also suggests *in situ* activities rather than materials being tossed in from above.

The Hidden Jar Area was significant at the beginning of the Late Classic. The discovery of a Saxche Orange Polychrome bowl shows stylistic similarities to vessels commissioned by a Tikal ruler who may have been the father of the founding ruler of Dos Pilas, reigning from the end of the 6th century through the early 7th century. The bowl could have been deposited here shortly after the Aguateca-Dos Pilas dynasty arrived in the area. Given evidence of use of the altar-platform area at the chamber entrance during the Late Preclassic and Early Classic, the placement of this bowl here may not only represent an act of veneration in an already ritually active and important space but also a pronouncement of the appropriation of the space by the new dynasty. During the Late Classic, the focus of ritual activities centered on the space in front of the stalagmite, as indicated by the interment of a partial skeleton, evidence of burning activities, and caching of a Pantano Impressed jar fragment with a kill hole had been cached behind the cave formation in a crevice.

In the Southern Entrance Area, the Upper Chamber and the lower Passage 8 were loci of activities during the Late Classic. Almost all the sherds from this area date to the Late Classic including a few types from post-AD760. Given the overall low frequency of ceramics from this area, the discovery of several partial or whole vessels was surprising.

The *grieta* portion of Grieta Rincón was used intensively during the Late Classic, as all the strata except for the lowest probably date to this time period, based on the almost exclusive presence of Late Classic types. The low frequency of Late Classic sherds inside the cave suggests that use was limited in the cave at this time.

The Tepeu 2 phase of the Late Classic marks the last period of use both in the Grieta

Principal and Grieta Rincón. No Terminal Classic or Postclassic ceramics were recovered, a pattern that follows the period of occupation on the surface site at Aguateca.

Performative Dimensions of Ritual Practices

Feasting Activities

The excellent state of preservation of cultural material in the Grieta Principal allows for a closer examination of the types of activities that might have taken place. In this section, feasting is taken up as a possible activity in the *grieta* as part of ritual performances. Three types of feasting activities have been identified based on analogy with ethnographic accounts and archaeological studies. The three differ from one another in scale of event, number of participants, function, types of serving vessels used, and quality and quantity of foods consumed. However, they are similar in the sense that they all involve negotiating processes of power relations, and in particular contexts, they may have expressed political strategies.

In modern Maya ceremonies, feasting constitutes one of the essential activities in addition to praying and making offerings to the gods (Vogt 1993:30). I refer to the concept of feasting to mean “the communal consumption of food and drink in a context that differs from that of daily household food consumption practices” (Brown 2001:370; see also Dietler and Hayden 2001:3). Ethnohistoric and ethnographic accounts and archaeological studies have provided data to suggest that feasting occurred as part of ceremonies during the Late Postclassic and Classic periods (e.g., Brown 2001; LeCount 2001; Redfield and Villa Rojas 1934:137, 144; Tozzer 1941; Vogt 1976:111, 118, 183, 184). Because ceremonies most always included feasts, it is proposed that feasting activities took place as part of the rituals that were performed in the Aguateca *grietas*.

It should be noted, however, that feasts are oftentimes carried out in different places other than where the ceremony took place, such as in a cave. In addition, feasting inside caves has

not been documented ethnographically. Nonetheless, the abundance of faunal material recovered from the *grietas* due to the good state of preservation has prompted me to archaeologically consider whether feasting may have taken place. The following analysis is tentative and preliminary because only a small portion of the faunal assemblage has been analyzed (**Table 8.1**). I should also note that the analysis was conducted by Dr. Kitty Emery and Michelle LeFebvre, but the interpretations are my own. In structuring my analysis, I use, as a starting point, LeCount's (2001) list of three distinct types of feasts in the Maya area: (1) sacramental meals that are private and more religious, focusing on establishing connections with the ancestors and gods; (2) relatively small scale, competitive "diacritical" (Dietler 1996) feasts where select members of society participate; and (3) public, larger scale celebratory festivals with more inclusive participation.

Feasts are, among other roles, opportunities for negotiation over social and political power to play out. In the latter two types, feasts are a display of the leaders' power as the sponsor of the feast, while the first type is a negotiation between the ritual participants and the ancestors and supernatural spirits. The latter types of feasts are particularly important for the consolidation of power and legitimation of authority by emphasizing the unequal social relations. With the competitive, exclusive feasts, the aim of the feast revolves around garnering political allegiance and cementing social ties (Blanton, et al. 1996:5; LeCount 2001:947; Reents-Budet 2000). However, as Houston, Stuart, and Taube (2006:127-128) suggest, based on images from the Classic period, feasts primarily consisted of Dietler's "diacritical" feasts in which the focus was on the king and the court (cf. Reents-Budet 2000). Additionally, spatial constraints, including the relatively small size of any one contiguous space and the difficulty in entering the *grieta*, would have made it unlikely that a large scale, public festival took place. Therefore, the third type of feast outlined above may be eliminated as a potential activity type in the *grietas*.

Feasting activities can be detected archaeologically by similar criteria that define a feast, including qualitative and quantitative differences in the food consumed, spatial segregation, and architectonic modification (Dietler and Hayden 2001:9). Because the spatial context of this study is in the *grietas*, a type of subterranean space that cosmologically and symbolically parallels caves, the criterion of spatial segregation from daily life is already met. As well, the *grieta* bottoms have been architectonically modified. Since feasts “produce copious amounts of distinctive refuse at the locations where they occur” (Dietler and Hayden 2001:8-9), quantity in addition to types of food remains will provide information on whether feasts occurred. Another archaeological correlate of feasting is the abundance of serving ware, such as platters and vases, because of their use in more public domains, their utility in conveying wealth and status, and in the case of the Classic period Maya, hieroglyphic labeling on the ceramic pottery of their functions, and pictorial scenes on vessels showing ritual foods being served in these vessels (LeCount 2001:945).

In this section, I combine faunal data with ceramic analysis in order to assess the question of whether feasting activities were part of the ceremonial activities in the *grietas* at Aguateca. Considering that feasts are arenas in which power negotiations can take place and may be used as political strategies depending on the context, evidence of different types of feasting activities in the *grietas* may reflect political dialogues that constituted part of the political history.

Faunal Assemblages. Two areas of the Grieta Principal, the Outer Chamber (approximately 184 m²) of the Hidden Jar Area and Chamber 5 (approximately 196 m²) of Chill Hill, were suspected to have been used for large social gatherings, such as large-scale feasting, due to the open and spacious area. Unit 9 of the Outer Chamber of the Hidden Jar Area exposed remains of opossum, peccary, scarlet macaw, turtle, dog, white-tailed deer, and brocket deer but the frequency of faunal material was low. Six taxa are represented with a Number of Individual

Specimens (NISP) of 110 and Minimum Number of Individuals (MNI) of 9. All the identified taxa are food sources, except for the macaw. It is possible that the macaw died there naturally, but only a partial femur was found suggesting that a part of the bird was deposited for its symbolic significance (Miller and Taube 1993:131-132). This interpretation is consistent with reports of macaw remains found in caches (Pohl 1983:83). Some carbon lenses were exposed throughout the unit but their thin, ephemeral, and loosely compacted nature suggests that the burning episodes were infrequent and not a result of offering hearths. The faunal material may represent offerings in the form of raw meat.

The limited quantity of animal remains from the Outer Chamber of the Hidden Jar Area parallels that recovered from Unit 1 of the Chill Hill Area. Seven taxa including dog, deer, turkey, freshwater clam, and an unidentified saurian animal were collected from Unit 1. Again, a relatively low frequency of faunal material was collected (NISP = 27, MNI = 9), indicating that these were not the remains of large-scale public feasting activities although they are food sources. In contrast to the Outer Chamber of the Hidden Jar Area, excavations of Unit 1 in the Chill Hill Area exposed evidence of much burning, plausibly as offering hearths (cf. Brown 2004). The animal remains may represent sacrificial offerings to the gods and ancestors, as observed in modern ceremonies (Guerra and Ishihara 2006a). The predominance of long bones suggests that select parts of animals were offered rather than the entire animal. Moreover, the finding of a deer pelvis, tibia, and phalange, all of the right side, may suggest that part of a deer haunch was offered. An offering of the haunch would be appropriate as it was considered the choicest portion for lords and gods as shown in the Madrid and Dresden codices (Coe 1994:157; Pohl 1990:158; Tozzer and Allen 1910:348,350,pl.31). In addition, deer and turkey which were considered “foods of the lords” comprise part of the assemblage of these two units (Yucatan 1898-1900:163). It is likely that fresh meat was offered (Coe 1994:157), as scattering of the blood appears to be of

utmost importance (cf. Brown 2002:103-104), though the possibility of preserved meat or stewed meat should not be ruled out entirely as this cannot be detected archaeologically.

Despite the evidence suggesting ritual hearths, none of the bones appeared to be burnt. This is not necessarily surprising as ethnographic (personal observation at Cuyotenango, Guatemala) and iconographic (e.g., San Bartolo mural; Dresden Codex) instances of animal sacrifices reveal that the animal or parts of the animal were placed *atop* the mound of offerings to be burnt, thus the flesh of the animal would have carbonized but the bone could remain uncharred. In fact, during an ethnoarchaeological study of cave use by Jenny Guerra and the author, uncharred faunal remains were found on an altar with a thick and resinous carbon layer of past burned offerings, in a rockshelter called Cueva del Diablo, Cuyotenango, Suchitepéquez, Guatemala (Guerra and Ishihara 2006a). Alternatively, the lack of burning on the bones may simply be the result of offering raw meat apart from the burned offerings.

In contrast to the more open, spacious areas discussed above, excavation of the Two Owls Area revealed a different pattern of faunal remains. Although faunal analysis has been completed for only two of the six excavation units (Units 11 and 14), the artifact and faunal assemblages of these two units comprise a substantial proportion of that recovered from the entire area (71.2 %; n=1882 of 2644 total frequency of bones and shell). Moreover, very few faunal remains were collected from Chamber 1 of the Two Owls Area (9.3 %; n=246). Thus I believe a comparison of the assemblage from Unit 11, which encompasses the remains of activities that culminated in the middle of the passage, and Unit 14, which is located in a small, flat area south of Passage 1, will be instructive in assessing the types of activities that may have taken place in the Two Owls Area. The contiguity of the spaces in which these two excavation units are located in addition to the finding of refitting sherds in Unit 14 to two fragmented bowls found in Unit 11

suggest that use of these two spaces was not mutually exclusive but rather that the two locales comprised parts of an interrelated activity space.

The most striking characteristic of these two units is the sheer diversity and quantity of fauna compared to the other units. The associated artifact assemblage is just as diverse and abundant. From Unit 11, a total of 28 taxa were identified including the following: opossum, water opossum, armadillo, cottontail rabbit, agouti, porcupine, raccoon, bat, dog, deer, laughing falcon, cardinal, bobwhite, doves/pigeons, barn owl, mud turtle, Mesoamerican river turtle, pond turtle, rattlesnake, toad, freshwater clam, apple snail, tree snail, unidentified rodents, unidentified perching bird, unidentified sauria (lizards), unidentified viper, and unidentified freshwater fish and other bony fish (NISP = 775, MNI = 43).

It should be noted that the depositional processes affecting the material collected from lot AG31B-11-1-1, which exposed twice the number of distinct taxa compared to lot 11-1-3, are not clear. While some of the species from lot 11-1-1 may represent food sources like the dog and rabbit, others could have entered the archaeological record naturally, such as the bat and owl (both of which were personally observed in the Grieta Principal). It is unlikely that the other animals entered on their own accord because this area is enclosed and sheltered from the surface. In addition, similar species are also found in burials and caches (Pohl 1983:84-85). However, based on the comprehensive data from all the excavation units in the passage (see Chapter 6), I suggest that the western part of the passage consists of construction fill that was brought in when creating the confined, dark space. It is also likely, however, that some of the remains are the result of sweeping of previous ritual activities that were conducted in this passage (Scott and Little 2003; Stross 1998).

Lot AG31B-11-1-3, on the other hand, is definitely a cultural deposit that consists of the remains of several ritual activities, including the smashing of a ceramic bowl and much burning.

The carbon and ash lenses were thick, suggesting intense burning events such as of offering hearths. Given the relatively small area excavated (about 1.3 m²), it is noteworthy that lot 11-1-3 yielded a high density of faunal material. The bones were likely deposited as part of the burning of offering hearths as sacrifices, with the possible exception of some rodents. During the June rainy season in 2004, numerous frogs were observed in this area, so it is conceivable that toads enter this space on their own accord as well. Like the other units, only parts of animals, predominantly long bones, were recovered. Additionally, five bone fragments of unidentified mammals of medium to large size, including a tibia shaft, showed evidence of cut marks, one of which was burned. This may indicate that the animals were butchered prior to being brought into this area or the *grieta*. The limited frequency of bones from each animal, despite the diversity of taxa represented, reinforces the notion that parts of animals, not whole animals, were brought in as offerings.

From Unit 14, a total of 12 taxa was identified and consists of the following: opossum, armadillo, cottontail rabbit, pocket gopher, paca, dog, peccary, white-tailed deer, mud turtle, pond turtle, freshwater clam, unidentified rodent, unidentified carnivore, and unidentified bony fish (NISP = 730, MNI = 27). Except for some rodents, all the identified animals from this unit may be considered food sources and most likely did not enter the archaeological record here on their own accord.

The possibility that the bones from Unit 14 represent the remains of large-scale feasting events is evaluated. Feasting evidence may be substantiated by the fact that all the animals represented in the faunal record are food sources, including large numbers of dog long bones and at least one whole peccary, two of the primary meats reserved for public festivals (Brown 2001:379-380). The size of the area in the vicinity of Unit 14, encompassing the area from the south end of Passage 1 to the south end of Unit 14, measures roughly 50 m² based on the plan

map. If the carrying capacity of the area was calculated at 1 m²/person, 50 people would fit, and at 3.6 m²/person, 13 people (Inomata 2006a:Table 1). However, with the majority of the space on a slope littered with unstable limestone rocks and boulders, perhaps only about 20 people would have fit. We do not know if this space had been maintained clean without the rocks or if the area had been terraced at some point.

Alternatively, despite some charcoal being found in this unit, the carbonized material do not seem to represent the remains of offering hearths as in Unit 11, because the carbon was more ephemeral, scattered, and in smaller pieces. In addition, the exposed carbon lenses did not at all maintain the high degree of compaction typical of offering hearths caused by repeated use and the material burned (i.e., burned blood, resins, etc) (Brown 2004:39). However, it is still unclear as to the nature of depositional processes in the Unit 14 area. Even though this area is somewhat exposed, it is unlikely that much material entered from the surface site, as the majority of the artifacts were well preserved and sherds were not water worn and small. A possible explanation, to which I am more inclined, includes a type of midden, where remains from previous rituals performed in Passage 1 (i.e., lot 11-1-3) were swept clean and dumped aside outside of the passage in the Unit 14 area. Similar practices have been observed in modern cave ceremonies, in which old offerings were tossed out of the way to make room for newer ritual performances (Guerra and Ishihara 2006b; Guerra and Ishihara 2006c; Scott and Little 2003). This could explain why the highest number of burned bones was reported from this unit, despite the apparent lack of hearths here. Further support of this interpretation comes from the finding of at least two identified instances in which sherds from the same vessels were recovered in both Unit 14 and Unit 11.

Ceramic Assemblages. In addition to the faunal record, particular ceramic vessels can also be markers for public feasting activities. Classic period Maya painted vessels depict festival

foods such as tamales and chocolate served in status-marking platters and vases (LeCount 1996:261). LeCount (2001:944-945) suggests that such serving wares, because of their use in more public settings, are more likely to convey wealth and status than cooking vessels. Small bowls, as individual food containers, were considered markers for sacramental meals. Platters, which include both plates and dishes as defined by Sabloff (1975:227), were used to serve tamales, and vases were primarily reserved for drinking chocolate. LeCount's analysis at the Late Classic site of Xunantunich, Belize, revealed that vases and small bowls (with a mean rim diameter of 18 cm) were found in relatively higher frequency in elite contexts while platters were found in fairly consistent frequencies across contexts that consisted of a range of social statuses except for small households (LeCount 2001:947). Based on this distribution, LeCount concludes that most elite and large commoner households sponsored lineage-based feasts and some chocolate was consumed (2001:948).

Although LeCount (2001:948) notes difficulty in detecting sacramental meals based on the presence of small bowls alone, due to their ambiguity in function as also daily serving ware, in the ritual context of the *grieta*, we can safely rule out the daily utilitarian function. The bowl form in the *grieta* assemblage cannot be directly compared to LeCount's analysis because not all rim diameters were recorded. Nevertheless, if ceramic ware is taken into consideration, a general association can be postulated between Saxche-Palmar Orange Polychromes and Chablekal Gray types with small to medium bowls (Foias 1996:565, 588), and Subin Red-Chaquiste Impressed types with small to large bowls. Additionally, LeCount (2001:943, 947) found that chocolate drinking was associated with more private or secluded spaces of non-residential structures, suggesting that it was an act more often a part of social and political events rather than religious meals, though this distinction is oftentimes blurred.

It should be noted that LeCount's functional approach to ceramic vessel forms, though helpful in providing hypotheses for the interpretation of the activities that ensued, can be problematic because it presumes that the vessel forms have a single function (cf. Brady and Peterson n.d.). Sherds that are not part of reconstructible vessels are found in abundance in the *grieta*, and it should be cautioned that there are instances in which broken vessels or sherds are used for a different purpose other than its original, such as broken jar sherds as incense burners (Tedlock 1982). In Unit 1 of Chill Hill, red pigment (possibly cinnabar) was found adhered to basal sherds of a Tinaja Red-Pantano Impressed jar. In another example at a cave in Quintana Roo, Mexico, sherds were left in particular locations as offering tokens (Rissolo 2003). However, having said this, for the purpose of the analysis, I proceed to use LeCount's approach while taking into consideration other possible functions.

With regard the Aguateca *grieta* assemblages (**Tables 8.2, 8.3**), for comparative purposes I will only examine the excavation units discussed above for the faunal remains. As shown in the tables, lots adjacent to lot AG31B-11-1-3 from Unit 7 are included so as to consider all the vessels from this central activity area in Passage 1 and because there was some level of mixture between the strata. On the other hand, ceramics from a single level are examined for Unit 1 on Chill Hill, lots AG31D-1-5-1, 1-5-2, and 1-5-3 of level 5, because the well defined strata of this unit indicates that the cultural material from this level represent activities confined within a relatively narrow time span. Overall, vases constitute a small percentage (1 – 3.5 %) of the ceramic vessel forms (only rims are considered here; cf. LeCount 2001:945-946). No vase rims were identified from lots AG31B-11-1-3 and AG31B-14-2-2, though it is plausible that some of the smaller rims classified as “open vessel, unidentified form” represent vases. The frequency of platters varies from 3 % in Unit 11 to nearly 30 % in Unit 14, Two Owls Area.

The ceramic assemblage would suggest, then, that hardly any chocolate drinking occurred in conjunction with the burning events in Passage 1, based on the finding of one vase rim sherd. Additionally, in Passage 1, serving tamales on platters was not a primary activity, as only one platter rim and no body sherds were identified. Almost all of the identified bowls are of the Saxche-Palmar Orange Polychrome type, which were likely individual containers for aqueous foods, such as atole, indicating that sacramental foods may have been offered and perhaps consumed in this area. This ceramic assemblage dominated by bowls, particularly small bowls, and lacking in platters is also found at the front of Structure D-6 at Xunantunich, Belize, a pyramidal ancestor shrine. This distribution is interpreted as representing small-scale household level ceremonies in which small bowls of food were offered to the gods, and later consumed by the participants (LeCount 1996:271). Interestingly, one of the polychrome bowls from lot 11-1-3 had been smashed to small pieces, which were found directly atop an unidentified black organic matrix. Following LeCount's (2001:946) observation that small bowls were found in higher frequencies in elite contexts, the ritual participants that conducted the ceremonies in Passage 1 may have been of higher status, an inference consistent with the associated artifacts, as will be discussed in a later section.

From Unit 14 of the Two Owls Area, few vases and high frequencies of platters and bowls were represented. This may signify that little chocolate drinking took place, and food was served and consumed on the platters and bowls. The finding of one body sherd of a spouted jar or pitcher may suggest that some liquids were served as well. Perhaps some of the ritual participants were of higher status or lineage heads of households, as suggested by the presence of vases (LeCount 2001:947). Some feasting of tamales and liquid foods and political rituals involving drinking chocolate may have taken place here.

The Outer Chamber of the Hidden Jar Area (lot AG31A-9-2-1) and the open chamber of Chill Hill (lots AG31D-1-5-1, 1-5-2, 1-5-3) contained roughly comparable proportions of plates (5 – 10 %), bowls (about 50 %), and vases (less than 4 %). This may reflect similar activities, such as serving solid and aqueous foods as well as some chocolate drinking. The ceramic assemblages of serving ware from these two areas could represent elite feasting activities, as they mirror relative frequencies reported from Group A at Xunantunich, an elite royal service area (LeCount 2001:Table 3).

The assemblages differ, however, in the percentage of jars, 39 % and 14 %, respectively. The Outer Chamber of the Hidden Jar Area shows a considerably higher frequency of polychrome jars compared to any other area. Polychrome jars are not common and were probably reserved for use in rituals or festivals, possibly related to people of higher status. The Chill Hill jar assemblage is notable for its prevalence of red-slipped monochrome jars with small orifices, namely of Tinaja Red and Pantano Impressed types, while the other assemblages discussed show a prevalence in Cambio Unslipped jars which typically have wide orifices. The reason for this difference is not entirely clear. Large jars with restricted orifices may have been closely associated with alcoholic beverages and their fermentation (Dahlin and Litzinger 1986). Similar jars with foaming alcoholic beverages are depicted on pictorial scenes on pottery (Houston, et al. 2006:116-117, Fig.3.11). Although Dahlin and Litzinger (1986:730) were referring to chultuns, parts of the *grieta* may be comparable spaces in that they may have high humidity and temperature, absence of light, and lack of air flow, necessary criteria for fermentation.

Summary. In this section, I have examined two types of material remains, faunal material and ceramic, in order to assess whether feasting events plausibly took place in the *grieta* as part of the ritual activities. Consideration of both the possible feasting food remains and the vessels in which they would have been served proves advantageous as any hypotheses emerging

from one analytical approach can be checked by the other. Ethnohistoric and ethnographic information on festival foods as well as archaeological data (Pohl 1983; 1990) from caves and ceremonial contexts were used as comparative models for the faunal material, while LeCount's study of feasting based on ceramic vessel forms at Xunantunich, Belize, was utilized as a model for the ceramic material (LeCount 2001).

The larger open spaces in the Hidden Jar Area and Chill Hill have the capacity to hold upwards of 200 people in each area (calculated at 1m²/person) or about 50 people with more space per person (3.6m²/person) which could translate into additional space for performances (calculations based on Inomata 2006a:Table 1). The ceramic evidence suggests some level of feasting may have occurred but the faunal material negates any large-scale feasting event. Perhaps prepared foods that did not leave a faunal signature were consumed. Alternatively, in the open chamber of Chill Hill, the animal bones may represent sacrificial offerings burnt in ritual hearths. Thus in the Chill Hill case, the rituals plausibly focused on catering to the supernatural spirits and probably only consisted of a relatively small number of participants.

In Passage 1 of the Two Owls Area, one of the major activities involved burning, plausibly offerings consisting of a diverse array of symbolically important animals or parts of animals, which would parallel modern Maya "burnings," which are offerings "made into or in the presence of fire" (Cook 1986:139) addressed to the ancestors and deities. The predominance of small to medium-sized bowls (mean rim diameter = 18 cm) suggests that the ceremonies included small amounts of liquid food offerings, such as alcoholic beverages and atole (cf. Aguilera 2007). Quite possibly, after the foods were consecrated and consumed by the spirits, small-scale feasting amongst the ritual participants occurred to partake in the communal feast with the ancestors. Subsequently, these remains may have been deposited in the vicinity of Unit 14, outside the central locus of ritual activity. As a final note, this brief study did not incorporate the symbolic

significances of certain animals, which surely had some effect on what animals were brought in to offer the spirits. Some of these meanings are explored in the following section.

Musical Performances and Rain-making

Another performative aspect of rituals involves music. Music is an important aspect of rituals because it is one of the types of food for the ancestral and supernatural spirits. The spirits consume the aroma of incense and flowers in addition to music (Taube 2001:105; 2004:73). Likewise, the burning of incense, blood, and other offerings into smoke renders the offerings into forms appropriate for the deities (Brown 2004:37; Vogt 1981:122). Thus, in conjunction with burning offerings, musical performances were important offerings in themselves.

Musical instruments are represented in the *grieta* assemblage by ceramic drums, flutes, whistles, bone rasps, and turtle carapaces used as drums. Hand-held rattles, conch trumpets, and elongated trumpets, which are also depicted in Classic period pictorial scenes, were not identified in the artifacts. In fact, the elongated trumpets and rattles may have been made of gourds (Houston, et al. 2006:258). Ceramic drums are usually represented by polychrome sherds in the form of portable underarm drums (cf. Houston, et al. 2006:Fig.8.11). Ceramic flutes and whistles comprise the majority of the figurine category of artifacts (see **Figures 7.7, 7.8**). Bone rasps are made of animal or human long bones that have a series of proximally placed incisions so that another object could be used to rub along it, producing a sound (see **Figure 7.40**). Turtle carapace fragments could be remains of either food or drums. One likely case occurred in the lower level of the cave inside Grieta Rincón (lot AG30A-1-0-2), where an intact turtle carapace was found cemented to the *grieta* wall. It was found in association with a number of cranial fragments. The faunal analysis is not yet complete, but with the material identified up to this point, only 1 to 6 turtle carapace fragments were collected from any given species within a lot, so it is unlikely these represent drums unless only a fragment was brought in and deposited. The exception is the

39 bones of Mexican giant musk turtle (*Staurotypus sp.*) found in the Outer Chamber of the Hidden Jar Area (see **Table 8.1**), many of which articulate and likely comprised a single individual.

The spatial distribution of musical instruments provides us with data on where such performances may have taken place (**Table 8.4**). Almost two-thirds of the drum sherds were recovered from the Two Owls Area (n=92 of 142), specifically the two ends of Passage 1 and the area south of it. Chill Hill (n=22 of 142) and the Upper Chamber of the Southern Entrance Area (n=15) both revealed up to 20 % of the drum sherds, respectively. Only 5 % (n=7 of 142) of drum sherds were recovered from the Hidden Jar Area, none of which came from the Outer Chamber. However, the wind instruments do not reflect the same distribution as the percussion instruments, hinting at different meanings or perhaps distinct functions behind various types of musical sounds. Chill Hill had the highest concentration of flutes and whistles (almost 70 %, n=26 of 38), predominantly in the open chamber and in the cave. Some whistles and flutes were found in the Two Owls Area, both in the passage and south of it (15 %, n=6 of 38). Only one possible turtle drum was collected from the Outer Chamber of the Hidden Jar Area. Very few musical instruments were found in the Hidden Jar Area and Windy Valley of Grieta Principal. The turtle carapace represents the only musical instrument collected from inside the cave at Grieta Rincón and the *grieta* portion of Grieta Rincón yielded very little material evidence of music.

Open spaces, with adequate room for movement associated with music and dances, were not necessarily the areas where an abundance of musical instruments were found. On the contrary, it seems that relatively enclosed spaces such as Passage 1 in the Two Owls Area, the Upper Chamber in the Southern Entrance Area, and the cave on Chill Hill were selected for musical performances where enhanced acoustic effects could be achieved. Alternatively, musical performances were conducted elsewhere, such as in the open space, and after use, were deposited

in enclosed spaces. The deposits from Unit 14 of the Two Owls Area may represent such practices, as described in Chapter 6. This scenario is likely the case at Cueva de Los Quetzales, a cave near Dos Pilas, because the chimney-like morphology of the cave suggests that the artifacts were tossed in from above (Brady and Rodas 1995).

Classic period iconography often shows deities playing music inside caves. A prominent example is Copan Sculpture 131, in which four supernatural beings, possibly wind gods, play rattles and drums inside a quatrefoil cave (Baudez 1994:Fig.72; Houston, et al. 2006:264, Fig.8.16). A Late Classic vessel (K530) show three Chaak making music with a stout floor drum, a turtle carapace drum, and a deer antler rasp (Coe 1978:plate 11; Houston, et al. 2006:265, Fig.8.17). These musicians may be inside a cave, as the fourth Chaak who is facing them, and perhaps singing with them, is seated in the maw of a zoomorphic *witz*, or mountain. It is significant that Chaak, the rain and lightning deity, is depicted with the musical instruments, as I will show that there are several indications that rain-making rituals were conducted in the Chill Hill Area. Another vessel (K4824) depicts musicians with rattles and bone rasps and a person dancing in the rain, which suggests the link between playing music and making rain (Kerr 1994:600). The notion of deities playing music in caves has been documented ethnographically by Sergio Garza (Brady, et al. 2005:221) for the Q'eqchi' Maya in Alta Verapaz. Garza's informants state that spirits of the hill, including the owner of the hill and other spirits, get together and play music, some using stalactites and stalagmites as drums and other instruments.

The fact that Chill Hill contained almost all the flutes and a majority of the whistles in addition to one of the two bone rasps merits further attention. Drum sherds were found throughout Chill Hill. The open space of Chill Hill (n=7 drum sherds, n=9 whistles) and the cave (n=5 drum sherds, n=8 whistles) exposed about the same number of drum sherds and whistles, but the cave (n=5 flutes) including the cave entrance (n=3 flutes) contained all the flutes.

Some characteristics of Chill Hill may lend clues to a possible explanation of the relative abundance of musical instruments here. I suggest that there are several indications that rain-making rituals comprised a central focus of the practices at Chill Hill. First, the Chill Hill Area is in fact a large hill with steep slopes along the northern and southern sides. Its overall form, as illustrated in the profile map (**Figure 8.1**), undoubtedly parallels a mountain, and with a cave at the peak of the mountain, it embodies the Maya concept of a mountain-cave. The climb up this hill is one of the most strenuous walks within the *grieta* as one must hike up a 63-meter long (slope distance) and steep, 40-degree slope (**Figures 8.1., 8.2**). The ground is covered with thick mud and rotting tree trunks, making the hike more tedious; it is unclear whether this slope was kept clean or modified with masonry or wooden stairs, as this slope was not tested by excavations. Such a climb up Chill Hill recalls contemporary pilgrimages to mountaintops to visit shrines and perform rituals (Vogt 1981:122). In Zinacantan, the mountaintops are decked with crosses and altars, which serve as the “doorway” to communicate with the deity that resides in the mountain (Vogt 1981:120, 122). In fact, contemporary Nahua in northern Veracruz conduct pilgrimages to the peak of a mountain, where they perform rituals to the rain deities at crevices in the mountain, which are akin conceptually to caves (Sandstrom 2005). During the Late Classic period, ritual participants may have ascended Chill Hill to reach the peak where they would greet the spirits at the cave and perform rituals. Such rituals could have taken place either during the day or at night, as participants could take advantage of sunlight or moonlight shining upon the open chamber.

A second important characteristic of the Chill Hill Area came from a direct observation of a natural phenomenon soon after we began investigations. Every half hour (or even shorter intervals at times), thick clouds would rise up slowly onto this hill from either slope on the south and north (**Figure 8.3**). This likely is associated with the temperature difference between the *grieta* interior and aboveground, causing air currents to travel through the *grieta* (see Chapter 3).

After experiencing this firsthand, I can understand the indigenous belief that clouds originate in caves (Burkitt 1920; Gossen 1974:21; Groark 1997:25). Ethnographic accounts describe rain-related spirits residing in caves (Guiteras-Holmes 1961; Holland 1963:93; Thompson 1970:267-270). To the ancient Maya, the rain god Chaak was closely related to mountains and caves, as this relationship is a widespread association throughout Mesoamerica as well as the American Southwest (Schaafsma and Taube 2006). Chaak is often depicted in caves, illustrated best by a life-sized stone and stucco sculpture of a seated Chaak inside a cave in the Petén (Stuart and Stuart 1977:53). Iconographic representations show Chaak in zoomorphic hill caves and quatrefoil cave motifs (Coe 1978:vessels 4, 11; Graham 1967:Fig.61, Machaquila Stela 10). A depiction of Chaak beating a drum in the Dresden Codex (page 34c), probably signifying thunder, may relate to the drum sherds found in this area. Rain deities are also known to make rain by burning copal, from which emanates a black smoke, which is thought to turn into rain clouds (Cline 1944:113). The abundant evidence of burning episodes in both the open space and inside the cave on Chill Hill may had a similar meaning. Another metaphor for clouds is cotton (Morris 1985:320; 1986:58-59; Thompson 1970:251), which may be why many textile-related tools were recovered from this area (see following section).

In addition to the emergence of clouds, the wind that would blow the clouds up was itself significant. Although a refreshing breeze compared to the blazing heat above surface during the summer months, the wind was consistent enough to necessitate long sleeved shirts, hence the namesake of the area. As caves were considered animate entities, wind issuing from cave entrances provided proof that caves were breathing (Garza 2003a; 2003b; Taube 2001:105). Wind on earth is the breath of the Anhel (*ángel*), the rain deity of the Tzotzil of Larrainzar, who live in caves (Holland 1963:93). Taube (2004:73-74; see also Taube 1992:56-64) has identified the ancient Maya wind god (Schellhas' God H) as the personification of wind, breath, and the breath

spirit. He is typically a young man wearing an earspool with an *ik'* sign and a prominent flower on his brow or on his woven headband. He was also the god of music, as music was often depicted as floral elements. As a windy area, it would seem appropriate that music was offered to the wind deity here, as evidenced by the abundance of wind instruments in the Chill Hill Area.

Taube (2004:74-78) further demonstrates that a mythic episode of Chaak capturing the wind god is illustrated in Late Classic codex-style vessels. The event occurs in standing water, in which Chaak is shown capturing or fishing up the wind god. Taube notes the Classic Maya “fish in hand” glyph is read *tzak*, which means “to fish” or “to conjure clouds and wind” in Colonial Yucatec (see Bolles 1997). During the Classic period, rulers are depicted as fishermen to denote conjuring of ancestral spirits. This mythical episode, in fact, reflects the natural process of surface water turning into rain.

Miniature vessels are associated with rain-making (Schaafsma and Taube 2006:256-258). Of the 28 miniature vessels found in the *grieta* artifact assemblage, over a quarter (n=8) of them were recovered from Unit 1 in the open space of the Chill Hill Area. Six of those are Tinaja Red or Pantano Impressed miniature jars, while the other two consist of Tinaja Red and Infierno Black bowls. Another quarter (n=7) were found in Passage 1 of the Two Owls Area, 3 of which are Tinaja Red or Pantano Impressed jars, 2 Cambio Group candeleros, 1 unidentified Cambio open form, and 1 unidentified form of a Saxche-Palmar Orange Polychrome. Chaak is frequently illustrated with a water jar hanging from his neck as a symbol of his identity (Taube 1992:Fig.8b). Water jars are the containers that rain deities carried to sprinkle water on the land (Holland 1963:93; Schaafsma and Taube 2006:249; Thompson 1970:254). For instance, Zoomorph P of Quirigua (Maudslay 1889-1902: vol.2, plate 57) shows Chaak with water jars in his arms while being exhaled out of the earth crocodile’s mouth, which is metaphorically a cave.

Miniature jars, bowls, and plates in addition to Tlaloc-faced incensarios are reported from Balankanche (Andrews 1970).

In conjunction with diminutive vessels, children are also associated with rain-making in Central Mexico and the American Southwest, whether the rituals focused on children as the central actors or children were sacrificed to Tlaloc (Schaafsma and Taube 2006:256-259). In Highland Guatemala, children marched to a spring outside a cave to be sacrificed to the *madre del agua* (Fuentes y Guzmán 1932), while in Yucatán, little boys and their hearts were thrown into cenotes as sacrifices to Chaak (Tozzer 1941:44, 119-120). The Aguateca *grieta* assemblage of human bone contains a total of 60 minimum number of individuals, of which 13 are identified as subadults (Palomo 2007). Notably 6 of the subadults are from Passage 1 of the Two Owls Area and the only 2 subadults (both are under 6 years of age) from the Chill Hill Area are from inside the cave. One subadult is identified from Passage 2 of the Two Owls Area, one from Windy Valley, and 3 are from the *grieta* portion of Grieta Rincón. Osteological analysis of human remains from Barton Creek Cave, Belize, has revealed a high proportion of children under age 12 (n=12) and young adults (age 18 – 34; n=11 of 31), and are interpreted as sacrificial remains primarily because the relative distribution of children under twelve years of age exceeds that expected from general population mortality rates (Owen 2005). Schaafsma and Taube (2006:258) suggest that “both the diminutive offerings and children may relate to the vitally important process of growth, including the germination and development of plants.”

The high occurrence of drum sherds in the Two Owls Area, particularly in Passage 1, may be related to rain-making, as the relationship of Chaak and drums is noted above. Moreover, the only two snake bones identified so far (Emery, personal communication, 2006) were recovered from Unit 11 of Passage 1, which may relate to Chaak producing lightning by wielding serpent-axes (Taube 1992:19, 22). One of these snake bones is identified as a rattlesnake

(*Crotalus durissus*), and the Madrid Codex (pages 12 to 18) shows Chaak in a scene with flying rattlesnakes and outpouring jars (Schaafsma and Taube 2006:249-250).

In sum, the abundance and variety of musical instruments in the Grieta Principal indicates that the ritual activities conducted were plausibly elaborate events, at which not only the ritual specialist was present but also musical performers. Based on iconographic depictions on Classic period ceramic vessels, musical performers are often depicted with dancers, suggesting that quite possibly dancers also participated in *grieta* ritual performances. Though speculative, the participation of musicians and dancers in elite ritual practices may indicate the status of the performers as elite specialists, not so much for the value of their instruments as for the specialized knowledge required for the occasions, possibly akin to attached craft specialists such as scribes and stela carvers (cf. Inomata 2001b).

The elite status of the ritual participants in these areas may be discerned by comparing the Grieta Principal to another cave in the Petexbatun that contained a high frequency of musical instruments (over 300 drum sherds and 51 whole or fragmentary whistles). Brady and Rodas (1995) suggest that the artifact deposits in Cueva de Los Quetzales represent ritual activities that were conducted by people of a high status, because the small acropolis of Las Pacayas had been built directly over the cave, with the cave entrance near the center of the plaza. Serving an important ritual place for the builders of the site, the cave was likely limited to people of elite status, which may be reflected in the high percentage of polychrome pottery and elaborate incense burners (Brady and Rodas 1995:24). The Grieta Principal parallels the situation in that the political center was built centered around this subterranean feature. As the Grieta Principal was bordered with elite residential and administrative buildings, not to mention the artifactual evidence of high quality goods, it is likely that access to the *grieta* was limited to certain individuals for particular occasions.

As discussed above, if rain-making ceremonies were conducted in the Chill Hill Area and the Two Owls Area, they may have political implications for association with Aguateca elites. As an agriculturally oriented population in the tropics, for the pre-Columbian Maya peoples, water management was crucial to their livelihood, and control over this resource played a key role in the emergence and maintenance of political leadership in the Maya area (e.g., Lucero 2006; Lucero and Fash 2006; Scarborough 2003). Thus command over adequate rainfall was linked with authority and power over the population. Another implication of the rain-making ceremonies relates to the association of the rain deity Chaak with warfare and sacrifice (Taube 1992:24). Chaak is often depicted as a warrior, outfitted with his lightning axe and shield (Taube 1992:Fig.6a; also see Dresden Codex pages 65a, 66a, 37c, Madrid Codex page 33a), and victorious rulers commonly wear Chaak headdresses (Mathews 1980:Fig.7). At a time of political turmoil in the Petexbatun region, the ruler of Dos Pilas and Aguateca may have conducted rain-making rituals in the *grieta*, presenting himself as Chaak, the rain bringer and warrior. In fact, on Aguateca Stela 1 (AD 741), which commemorates the accession of K'awiil Chan K'inich only days after the death of his predecessor, the new ruler dons a Chaak headdress. I speculate that the later rulers, K'awiil Chan K'inich and Tan Te' K'inich, who probably oversaw the ritual events in the Grieta Principal, may have evoked the founding ruler of the dynasty, B'alaj Chan K'awiil, in these rain-making ceremonies. This is because the founding ruler's name signifies "K'awiil Hammers (in) the Sky" and K'awiil is the personified axe carried by Chaak (Guenter 2003:2). Concern with water management may also be detected in the attire of Tan Te' K'inich on Aguateca Stela 7 (AD 790), in which he wears feet garment that represents the Water Lily Serpent, deity of standing water, perhaps symbolizing his control over (or at least ambition to control) the Petexbatun Lake.

Negotiating Gender Relations

The topic of this section was prompted by the recovery of a significant number of well-preserved and intact textile production related implements. Very few studies discuss gender relations with regard to ancient cave use (Adams and Brady 1994; 2005; Rissolo 2001:341, 354-355), and it is hoped that this brief study will provide a stepping stone to advancing studies in social relations such as gender. In this section, I first review some relevant key concepts in gender studies. Then, by taking a closer look at these items and their spatial and temporal contexts in the *grieta*, I explore the symbolism apparently manifested in the ritual activities and critically examine the question of women's participation in cave ritual. In brief, based on our understanding of Maya gender ideology through ethnographic and archaeological examples, I suggest that women of post-menopausal age or of a higher status in the community may have played active roles in ritual negotiations in the Grieta Principal. Additionally, particular spaces in the *grieta* were places where rituals evoking female goddesses and rituals related to themes of birth, rebirth, and fertility may have taken place.

I use the concept of gender as a social construct (Nelson 1997:15) and a dynamic process “that is constructed as a relationship or set of relationships, necessarily embedded within other cultural and historical social institutions and ideologies” (Conkey and Gero 1991:9). As many anthropologists have noted, women cannot be simply added to this social process, because they are the active agents that generate the process (Silverblatt 1991:155). In this sense, we cannot insert “women” into our reconstruction of Maya cave rituals like an added ingredient.

It has been the general consensus among archaeologists studying ancient Maya cave use that women did not engage in cave ritual, based on the widespread ethnographic documentation of the “prohibition” of the use of caves by women (Adams and Brady 2005:315). This assumption is problematic, however, because such “factual” accounts “bear that [colonization] process in

their marrow” and we must be cognizant of the process of the construction of knowledge, recognizing in the documents the conscious and unconscious prejudices stemming from authorship, intent, culture, class, and gender (Silverblatt 1991:161; see also Trigger 1986:257-258). More pointedly, the “male gaze” and the “male tenor of voice” that dominates in ethnohistoric accounts must be confronted (Ashmore 2002b:231; Clendinnen 1982; see also McCafferty and McCafferty 1991:21; Miller 1988:x-xi; Vail and Stone 2002). The limited access of women into caves and rituals are often explained by male ethnographers that women would “contaminate” and “pollute the sanctity” of the ceremonies (e.g., Redfield and Villa Rojas 1934:139; Thompson 1975:xxi-xxii). As Adams and Brady (2005:315) point out, the misunderstanding of the reason for women’s restriction from caves and other sacred spaces, which is that women are *muxuq*, stems from translations based on a Christian worldview. The term *muxuq* had been translated by male linguists (Haeserijn 1979; Sedat 1955) as “to not be worthy of, to profane” (*desmerecer, profanar* in Spanish) whereas Adams found that it is a quality specific to women and actually means “to pass a shadow over people of their personal items and tools.” Aguilera (2004:91) notes that women of childbearing age should not be present during certain rituals, not because of their potential to “pollute” but rather their potential to “become impregnated by invisible beings being summoned by the shamans.”

As one of the most descriptive and oft-cited ethnohistoric sources describing the Late Postclassic and early Colonial period Maya, Julia Hendon (2004) selects Diego de Landa’s account to critically exam gender relations. Not to deny its value as a great source of information, Hendon notes that the most accessible English version of Landa, the translation by Alfred M. Tozzer (1941), brings Landa to us through another filter of biases through interpretations of the text by the translator in the thousands of footnotes (Hendon 2004:312-313). Specifically, Hendon shows that Landa and Tozzer, representative of contemporary European and Catholic views,

ignored or marginalized women, whose “proper” role considered to be “the hard-working, fertile, and submissive wife and mother” (Hendon 2004:314). This perception led to his assumption or conviction that only men held religious and political offices. Although Landa does not explicitly state whether women held offices, Hendon convincingly demonstrates that a woman called *ix mol* (“conductress”), who wore a special feather costume and carried an insignia, did have an institutionalized role in the ceremony that took place in the month of Yaxkin, in which girls and boys were brought to the temple to ensure success in their futures (Hendon 2004:316).

As mentioned above, post-colonial and modern Maya societies were not and are not static, representing effects of transformations forged by centuries of external catalysts, foremost of which is the Spanish colonization and Catholic “spiritual conquest” of the 16th century. Particularly relevant to our discussion, Clendinnen (1982) shows that the status of Maya women in Yucatán diminished as a result of the forced shift in labor obligations, including tribute requirements and domestic services in the Spanish towns, brought on by the conquerors. Moreover, the Catholic institution of marriage tore apart kin-based households and social organizations, dissolving work groups and their associated statuses such as specialized female weaving groups (Clendinnen 1982:435). Thompson (1970:xxvi) also comments on post-colonial changes in social organization, noting that “the beliefs and practices of the ruling class died when the ruling class ceased to think as Maya” as they became “a generation of mission-educated Maya.” He suggests that much of the ethnographic information we see now is largely the religious practices of the peasants that “survived through the Colonial period and even to our day.”

Although we should be aware of generalized assumptions of gender attribution to particular archaeological features (Conkey and Gero 1991:11-12), historically and culturally specific examinations of the Classic period Maya indicate that spinning and weaving were most

often associated with the female gender (e.g., Anawalt 1981; Cordry and Cordry 1968). In particular, I review the iconographic evidence of this relationship for the Classic period Maya. Classic period figurines and ceramics depict women spinning and weaving, among other activities including maize grinding and food serving (Hendon 1997:37; Joyce 1992; 1993; 1996), while monumental art shows figures in female dress holding cloth bundles and vessels which Rosemary Joyce (1996:178) argues represent textiles and food preparation, the products of women's labor. Chak Chel, the aged goddess of curing and childbirth, is often depicted with a spool of cotton, and at times also a weaving pick, in her hair, such as that shown in the Late Classic "Birth Vase" (Taube 1994) and Postclassic murals and codices (Taube 1992:Fig.50g, 51a). Codices show goddesses at various stages of textile production (Ciaramella 1999), and though these date to the Postclassic period, much of the iconography as well as fundamental cosmological concepts recorded in the codices are seen in earlier contexts that span Maya history, indicating a continuity in religious thought (e.g., Saturno, et al. 2005). Gabrielle Vail and Andrea Stone suggest that these images of females in codices "present an idealized view of societal roles and expectations" (2002:204). According to John Clark and Stephen Houston, linguistic evidence points to weavers as referring specifically to females, and they conclude that "weaving was the quintessential female craft" (1998:34). Based on several distinct lines of inquiry, there is mounting evidence that, throughout the Classic, Postclassic, and Colonial periods and up through the present, textile production has been identified as activities related to the female gender (e.g., Anawalt 1981; Cordry and Cordry 1968; Hendon 1992; Joyce 1992; McCafferty and McCafferty 1991; Prechtel and Carlsen 1988:123; Vogt 1969:101).

Femaleness of Weaving

Concepts of fertility, more specifically, procreation and birth/rebirth closely tie activities related to textile production with caves. In the Postclassic codices, Schellhas' Goddess O (Chak

Chel, Ix Chel) and Goddess I are identified with weaving (Taube 1992:68). Chak Chel is depicted seven, possibly nine times, on the Late Classic “Birth Vase” in scenes related to birthing activities and rituals. It should be emphasized that weaving was the domain of female deities. The aged goddess is known for her powers of creation, divination, and childbirth (Taube 1992:99-105). At the time of Spanish contact and well into the Colonial period, pilgrims traveled to the Island of Cozumel and Isla Mujeres, Mexico, to visit shrines dedicated to Ix Chel, as patroness of fertility and pregnancy (Miller and Taube 1993:100-101; Patel 2004).

Goddess I’s name glyph is often accompanied with the prefix *sak* (“white”) which J.E.S. Thompson (1972:47) notes is the root word for the Yucatec verb “to weave” (Taube 1992:68). Taube suggests that Goddess I may be related to the Classic period moon goddess who is associated with the maize god, indicating a link between weaving, the moon, and agricultural fertility. In fact, an ethnographic account of the Tzotzil Maya, Chiapas, describes a wife placing “her comb, her string of beads, her spindle, and a ball of cotton thread in the basket with the [maize] grains that are to be planted” so that, at harvest, the grains will come off the cobs easily (Guiteras-Holmes 1961:43). It is further noted that “[s]ome women twirl their spindle among the grains as if they were spinning” (Guiteras-Holmes 1961:43). Just as thread is transformed into cloth through the weaving process, the cave likewise has transformational properties, as pilgrimage sites facilitated the spiritual transformation of the pilgrims (Stone 1995:37-39).

The symbolic significance of the weaving process has been thoroughly documented ethnographically. The loom is compared to the human body and the weaving process evokes the birthing process as well as the creation of the world. Among other bodily metaphors for weaving tools on the loom, as will be noted below, thread is analogous to hair in that both require combs, and hair is perceived of as a vital life force, which is also reminiscent of the tassels of maize (Cordry and Cordry 1968:42).

The birth of cloth parallels the regeneration of the world, with moon (called “Grandmother” by the Tz’utujiles of Santiago Atitlán) to be the “common thread” of both weaving and birthing (Prechtel and Carlsen 1988:124, Fig.1). The sticks that comprise the backstrap loom embody the powers of the thirteen female deities called the Ixoc Ahaua, and midwives (*iom*) use these sticks during various stages of delivery. Both the warping board or warping sticks and the loom are metaphors for the human body. The stakes are named “foot,” “heart,” and “head,” and in communities where warping boards are used, they are shaped like a human being (Prechtel and Carlsen 1988:126, Fig.2). The loom functions as the maternal body from where the textile is born: it has a head (*rwa kiem*, “the weaving’s head”) at the top, at the bottom is the butt (*r’chaq kiem*, “the butt of the weaving”), and even has ribs (*tkr*) (Prechtel and Carlsen 1988:126). Noteworthy is that the loom is secured by a rope, the umbilical cord (*yujkut*), to a post or tree called R’tie Chie, “Mother Tree,” an aspect of the world tree.

The weaving process, then, consists of the shuttle, that is, sustenance (*r’way kiem*), being fed through the open shed, which is the heart/umbilical (*r’kux*), and subsequently the weaver leans back, slamming down the batten. She leans forward to relieve the tension on the loom and this back and forth motion mirrors a woman in childbirth, while the opening and closing of the shed, the heart, reminisces the beating of the heart (Prechtel and Carlsen 1988:126). Finally, to express that the textile is completed, they say “my weaving came out” (*xe’el nu kiem*), indicative of the Tz’utujil perception that the birth of the cloth parallels that of humans and of the rising sun.

The sexual symbolism of the act of spinning is amply demonstrated by the Nahuatl riddle “What is it that they make pregnant, that they make big with child in the dancing place?” Answer “Spindles” (Sahagun 1950-1969:Bk.6:240, paraphrased in ; Sullivan 1982:14). The combined acts of spinning and weaving were a metaphor for the female life cycle, as spinning

was the domain of young girls and old women, while weaving was the work of a married woman who was responsible for producing the clothing of her family (McCafferty and McCafferty 1991:25). In accordance with the sexual analogy, in the Mixtec village of Jamiltepec, Oaxaca, men make the spindle shaft and women make the whorl called “la frutita,” which are then both painted by women (Cordry and Cordry 1968:31).

Femininity of Caves

Birth and rebirth are also themes that relate to caves. Caves were considered the place of origin where human beings first emerged (eg., at the time of conquest, Chicomoztoc, “the seven caves,” for Nahuatl-speaking groups and Tulan Zuyua, Quiché word meaning “seven caves,” for the Highland Maya groups (Miller and Taube 1993:60)). As caves were conceived of as the inner hollow parts of mountains, caves were also the inside parts of earth, or the womb (e.g., Brady 1989:45-47; Heyden 1975:134; 1991; Hunt 1977:107-109; Laughlin 1975:132; Pasztory 1983:133). Caves are often wet with underground streams, lakes, and water drippage, offering a parallel to the watery environment of the womb. Not only the ancestors but also clouds, rain, lightning, and thunder emerge out of caves, the maw of the zoomorphic earth (Burkitt 1920; Gossen 1974:21; Groark 1997:25). Importantly, the sun enters the cave at sunset to travel through the underworld and exits through the cave at sunrise, a process understood to the Maya as the death and rebirth of the sun (Gossen 1974:33,39; Sosa 1985:423, Figure 11; Stone 1995:36). The same is true for other astronomical bodies such as the moon and stars (Sosa 1985:423).

In addition, caves were pivotal topographic features in the birth of the community. Communities were often established around a central cave feature to create their sacred landscape while other caves marked the outer boundaries; the creation of the community paralleled the gods creating the cosmos, and by extension was an act of re-creation of the universe on a small scale (Brady 1997b; García-Zambrano 1994). Both processes of weaving a textile and establishing the

community around a cave reproduced the cosmos as well as continuity of social life (Ashmore 2002b:241).

Important topographic features, most often mountains, in Mesoamerica were identified as female or male gendered (or wife and husband) places (Burkitt 1920:200, 204; Fernandez, et al. 2000:54; Stone 1995). Similarly, caves were most likely assigned a gender as demonstrated for the Tzotzil Maya of Zinacantan in which waterholes were paired with their corresponding gendered mountains (Hunt 1977:97). Artificial mountains, or pyramids, were likewise gendered. Materials associated with their appropriate gender were often deposited in such gendered spaces as offerings to the female deity of the place. As the principal pyramidal building at Xochitécatl, Serra Puche (2001; see also Serra Puche and Bertelshapcher 1993) argues that the Pyramid of Flowers was a feminine ceremonial place where rituals of a female nature took place. Excavations of the pyramid revealed an assemblage of artifacts that relate to the female gender, consisting of female figurines depicting different stages of a woman's life cycle, almost 500 spindle whorls, metates reused in the stairway construction, burials (some females, mostly children and adolescents), and stone sculptures supposedly depicting female beings. In an Aztec example, during the feast of Tepeilhuitl ("Mountain Celebration"), women were sacrificed on female mountains (Hunt 1977:96).

Women in Religious Life

Women's participation in rituals has been documented, and can only be understood within the ideological framework referred to as gender complementarity. Gender complementarity is the notion that gender relations are not unequal relations between man and woman but rather two parts of a whole. Nothing is complete and cannot function properly without both its female and male aspects (Joyce 1996:185; Tarn and Prechtel 1986:173). Women have specific roles in rituals, which are predominantly related to food preparation, another domain

associated with the female gender. Here we must caution against a blanket statement of women's prohibition from cave rituals.

Additionally, age figures greatly into Mesoamerican gender relations (Ashmore 2002b:233; Vail and Stone 2002:204), an aspect that has been given little attention until recently. Some women did possess formalized ritual status, as evidenced in women holding named positions as ritual assistants and the use of special clothing for particular roles (Joyce 1996:186). Older, post-menopausal women have had special roles as central actors in ceremonies as attested to in ethnohistoric accounts (Guiteras-Holmes 1961:71; Stone 1988; Thompson 1930:62; Tozzer 1907:111; 1941:143, 145, 147, 152; Vail and Stone 2002:224; Vogt 1969:266). Older women are often associated with higher status (Joyce 1996:186) while a young woman can also receive higher status as the wife of an official, such as the cargo holder (Gossen 1974:40-41).

Not only was age a factor in gender composition but status was also an integral element in defining gender roles (Ashmore 2002b:234; McAnany and Plank 2001:95). Indeed, for the Classic Maya, iconographic depictions show royal or elite women involved in ritual actions such as bloodletting rituals on the Yaxchilan lintels and Bonampak murals (Miller 2001:220; Tate 1992). Recent archaeological studies have shown that textile production was more closely associated with women of higher status (for the Aztec see Brumfiel 1991:224; Houston and Stuart 2001:64, n4). McAnany and Plank (2001) suggest that textile production was primarily the domain of royal women whereas food production was the main concern of non-elite women. However, at Copan, non-royal elite households were involved in textile production (Hendon 1992:14; 1997). Thus it may be more accurate to say that women of higher class, not necessarily royalty, were associated with elaborately embroidered textiles and their production. It should be noted that spindle whorls have been reported from non-elite contexts (e.g., Sheets 2002), certainly indicating that non-elite households spun their own threads and wove textiles, though most likely

without the elaborate embroidery. For example, elite women are depicted on Classic period monuments wearing elaborately embroidered huipiles, most certainly not worn by women of lower status (Bruhns 1988; Joyce 1993:261; McAnany and Plank 2001:95; Proskouriakoff 1961). Other examples have already been discussed and include the myriads of textile production tools accompanying the interred individual in the Margarita Tomb and the many weaving picks are name-tagged *u puts' baak* (“the bone needle of”) from the tomb of a royal woman at Naranjo (Dacus 2005; Houston and Stuart 2001:64-65).

Textile Production Toolkit in the Archaeological Record

Codices as well as figurines, ethnohistoric sources, and ethnographic records attest to the continuity in spinning and weaving technology throughout Mesoamerica (Cordry and Cordry 1968:45; cf. Prechtel and Carlsen 1988). Spindle whorls, consisting of a weight (whorl) through which a stick passes (spindle), were used to spin thread and the backstrap loom was used for weaving. The spindle does not usually preserve since it is made of wood (a rarely preserved specimen is reported by Beaudry-Corbett and McCafferty 2002:59), but whorls are found archaeologically. Small bowls may have been used to support the spindle whorl, but either they were made of organic material or they would have to show telltale signs of its use as such; none have been identified to the author's knowledge. Likewise, containers to hold the fiber while spinning would surely be difficult to identify. As for the backstrap loom, the loom itself was made of wood thus would not preserve but the bone implements used during the process are often reported from archaeological contexts.

Here I will briefly describe each artifact type that is related to textile production. The description of the bone tools is especially important because a review of site reports demonstrated the variability in definition and classification of relevant bone artifacts, in particular, pins and picks which are often classified as awls (see Chapter 7 figures).

Spindle whorls were made of a variety of materials, including clay, stone, bone, and organic materials such as nut shell (Sheets 1992:75) and even vegetables like small apples and potatoes (McCafferty and McCafferty 2000:42). The size and shape vary considerably as well, suggesting differences in types of fibers that were spun (Beaudry-Corbett and McCafferty 2002:61; Parsons 1972) and/or the thread quality (McCafferty and McCafferty 2000:43). Spindle whorls can be specially formed whorls made of clay or stone, centrally perforated circular ceramic sherds, and centrally perforated bone disks. Specially made spindle whorls may be decorated with carved or incised designs. Reworked sherds were taken from various ceramic vessels, which were probably broken, and shaped into disks with ground edges. Bone disks are usually slightly convex on one side and flat on the other. The flat surface is usually well polished. Perforated disks, particularly bone disks, have been suggested to be beads or ornamental objects. However, their uniform size and shape indicates a fairly standardized function, and combined with a highly polished side on each specimen suggestive of use-wear, I suggest their probable use as spindle whorls.

McCafferty and McCafferty (2000:43) note that the spindle whorl variables, that is, the diameter, height (thickness), hole diameter, and weight, directly correlate with thread quality based on thread thickness and degree of twist. Thus it is instructive that we compare the combination of variables, as McCafferty and McCafferty do in their analysis of the Cholula spindle whorls (McCafferty and McCafferty 2000:Table 6). However, only three of the *grieta* specimens fit into the Cholula typology, possibly suggesting different techniques and/or materials used.

Sewing and weaving tools found in excavations include needles, weaving picks, and awls (Hendon 1997:38). Needles, in various lengths, are formally similar to pins but have an eyehole at one end, or in rare instances, at both ends. The eyehole may be a drilled perforation or

carved and worked from both sides. Picks are slender, pointed bone objects with a circular to oval cross-section. The non-pointed end may be carved or incised. Although other functions have been proposed, including hair pins and paintbrushes, ethnographic parallels of such picks being used to lift warp threads to create embroidered designs (Cordry and Cordry 1968; O'Neale 1945:34, Illustration 75h; Karl Taube, personal communication, 2006) in addition to epigraphic evidence (Dacus 2005; Houston and Stuart 2001:64, Note 5) support the working interpretation that these archaeological specimens are textile-production tools. As Taube has noted, it is likely that a close examination of the artifact assemblages from various sites will show that many of the bone artifacts are indeed weaving picks (Houston and Stuart 2001:n5). Awls, for lack of a better term, are more robust and thicker than picks and often retain the articular portion of the long bone, the other end tapering to a point. As noted in Chapter 7, I suggest these were also used in the weaving process. It should be noted that a one-to-one correlation of function to artifact type may not have existed. For example, picks could also have functioned as hair pins because ethnographic accounts and codices show that spindles are worn as hair adornments, serving as an “emblem of gender identity” (McCafferty and McCafferty 1991:29; for spool of cotton in Goddess O's hair, see Taube 1994).

Distribution of Textile Production Tools in the Aguateca Grietas

Archaeological investigations of the Main Grieta and Grieta Rincón at Aguateca uncovered a sizable sample of tools related to textile production in an excellent state of preservation, particularly the bone artifacts. Of the 66 modified bone and shell objects (51 bone, 15 shell), 30 are identified as tools related to textile production.

From the Grieta Principal and Grieta Rincón, a total of 34 tools related to textile production were recovered (**Tables 8.5 - 8.7**). These consist of 8 needles (6 complete, 2 fragments), 4 complete picks and 5 possible pick fragments, 2 complete awls and 3 fragments of

possible awls, and 12 spindle whorls (3 specially made stone and ceramic whorls, 4 centrally perforated sherd disks, 5 centrally perforated bone disks). All of these artifacts are from the Grieta Principal, except for one needle fragment from Grieta Rincón. More than half (n=19 of 34) were intact, and their excellent state of preservation gives the impression that they are still functional. This suggests that they were not simply deposited because they had reached the end of their use-life and leads one to question the processes of their deposition.

Regarding the textile production implements from the Aguateca Grieta Principal, they are found in all the investigated areas but their distribution is not uniform (**Table 8.8**). The highest concentration of textile production related tools (n=6 of 33) were recovered from the central area of Passage 1 in the Two Owls Area (Operations AG31B-7 and -11). The Inner Chamber (Ops. AG31A-11 and 12) and the Entrance Slope (Ops. AG31A-2 and -5) of the Hidden Jar Area contained a high frequency but its spatial distribution within the area is scattered. Other areas with some concentration of weaving and spinning implements include the area south of Passage 1 (Op. AG31B-14) and the cave on Chill Hill (Ops. AG31D-2 and AG31D--5). Other tools closely associated with women may reinforce the distribution of textile related implements (**Figure 8.4**).

Gendered Use in the Aguateca Grietas

As the conceptual ties between textile production and caves have been demonstrated above, in this section I explore possible significances of the textile production tools found in the Aguateca *grietas*. It should be cautioned that the archaeological deposits in the *grietas* represent a palimpsest of ceremonies that may not have had a singular function but varied functions, as ethnographic examples of ceremonies reveal that, at different occasions, one locale can become the setting for ceremonies with varying purposes (Guerra and Ishihara 2006a). However, it is unclear whether distinct ancestors or deities are addressed for different rituals. It is my contention that patterned distributions point to similar practices with possibly paralleling significances.

Given the numerous examples of associations between female gendered spaces and similarly identified objects, the particularly high concentration of weaving related tools in Passage 1 of the *grieta* may have been brought in as offerings to some female deity, with the ritual participants, which may have been women, identifying the passage as a female gendered place. In addition, it may be that the various areas within the *grieta* were imbued with differing shades of meanings. They may not have recognized the Grieta Principal as a single, contiguous place, but rather accessed from different points and were perceived of as separate places with different significances. This would parallel a mountain range in which the separate mountains have distinct names and identities (Burkitt 1920). Distinct spaces in the Grieta Principal, such as the Two Owls Area, the Inner Chamber of the Hidden Jar Area, and the cave on Chill Hill, may have been considered as female gendered places based on a higher concentration of weaving related tools in addition to the enclosed and dark morphology of the spaces with limited access points, suggestive of the womb.

Concentrations of weaving related tools have been found in royal women's burials, such as at Copan in the Margarita Tomb and in a tomb of a royal Naranjo woman, and these have been interpreted as identifying the buried individuals as skilled weavers or possibly the head of an esteemed weaving group in regal or elite households (Bell 2002; Dacus 2005:38). Although the contexts in the *grietas* at Aguateca are not of tombs, nonetheless they are similarly distinct spaces in which one venerates the ancestors and deities. Therefore, the deposition of weaving tools in the Aguateca *grietas* may signify evocation of female goddesses or the presence of women, that is, women carried in and deposited the textile tools themselves. Moreover, as was discussed above, textile production was more closely associated with women of higher status. Thus the finding of textile production tools in the *grieta* may relate to women with higher status. This assessment is reinforced by the recovery of artifacts often associated with elites, including a pyrite mirror

mosaic piece, and ground stone made of imported material (Kazuo Aoyama, personal communication, 2006) from Passage 1 and an incised alabaster vessel sherd from Chill Hill.

The unequal spatial distribution of the textile production tools suggests that ritual participants selected particular areas for use over others. Moreover, there appears to be transformations in the use of space during the Late Classic that correlate with politically significant events. Aguateca was established as the twin capital of Dos Pilas around AD 730 by a non-native dynasty and only flourished for about 100 years, when they were attacked and were forced to abandon the center at around AD 810. During the occupation of the area, it is clear that the Grieta Principal was an important ritual center. In addition, given this unstable political climate, it is plausible that the abundance of weaving tools during this period reflects the elite's propensity to sponsor fertility rituals, both agricultural and procreative, in the chasm to petition for victories and the continued success of the dynasty. It is important to note that this study suggests that women probably played a prominent role in the ritual practices. Based on the associated ceramic assemblages, use of the *grieta* immediately after the establishment of the Aguateca – Dos Pilas polity was limited to the Two Owls Area and Hidden Jar Area. After AD 761 when Dos Pilas Ruler 4 was captured and Aguateca became the primary capital, use of the *grieta* ceased in the Hidden Jar Area and expanded to Chill Hill.

Summary

With the goal of contributing to the “engendering” of Mesoamerican cave archaeology, to borrow Joan Gero and Margaret Conkey's words (Gero and Conkey 1991), I have attempted to examine the issue of gender relations in cave rituals because this topic has been discussed only rarely in the archaeological literature of caves (Adams and Brady 2005; Brady 1989:417-420; Rissolo 2003). A critical examination of ethnohistoric accounts as well as an understanding of Maya gender ideology provides us with comparative data to suggest that we cannot easily rule out

the possibility that women participated actively in cave rituals. Of course, I am not negating male participation, but rather suggesting that considering “women” as a blanket category obscures our understanding of indigenous gender relations. Women who participated in cave rituals were more likely to be of post-menopausal age or of a higher status in the community. Furthermore, particular areas of the Grieta Principal, based on the findings of a high frequency of textile production tools and the areas’ resemblance to the womb, may have been loci of rituals possibly evoking female goddesses and were related to themes of birth, rebirth, and fertility.

Differential Use of Space

The discussion thus far has revealed that spaces in the Grieta Principal and Grieta Rincón were not used uniformly across locations or through time. Particularly of interest is the shift in spatial use seems to coincide with key political events. In this section, I will examine the various artifact assemblages of each distinct space, from areas south to north of the Grieta Principal followed by the Grieta Rincón, in conjunction with contextual data in order to try to reconstruct the ritual practices in the *grietas*.

Southern Entrance Area

The overall low frequency of cultural material in the Southern Entrance Area indicates low intensity of usage. Two niches contained partial vessels, including an intact miniature jar and a rare polychrome vessel in the form of a calabash. One of the niches may have been intentionally closed off in antiquity because no easy access way was found. Such closing off of passages or chambers probably occurred more frequently than reported (2003a; Ishihara 2003b), though the reasons for this practice, which may include termination and desecration of a sacred place due to warfare (cf. Brady and Colas 2005:154-155), are not well understood. The small charcoal lens in the southern part of the chamber suggests very limited burning activity. The northern end of the Upper Chamber contained a larger quantity of cultural material along with an abundance of

charcoal scatter possibly suggesting uses of torches in this area. No human remains were found in this chamber, one of the few areas with cultural activity not associated with any human interments. Some drum sherds and whistles were found in the Upper Chamber, but only account for 10 % each of the total found throughout the *grietas*.

Immediately north of this chamber at the top of the continuing passage (Nasal Passage), the steep and wet slope has been reinforced by a well-constructed retaining wall. It cannot be confirmed at this point whether there was any other function for the placement of this wall, such as blocking up another passage or chamber. If reinforcement and prevention of erosion were one of the functions, this would suggest frequent passage through the area, or at least, that heavy traffic had been anticipated at the time of construction.

At the base of the Nasal Passage, in a low and wet side passage, one partially articulated masculine adult individual and bones from another individual were recovered. The unexpected recovery of two partially reconstructible polychrome bowls indicates that the individual had been interred here. This narrow passage has a low ceiling, suggestive of a tomb-like space, and the watery environment may have added significance to this space, as areas with dripping water are common foci of ritual activities (Ishihara and Griffith 2004; Rissolo 2003).

Two Owls Area

Space in the Two Owls Area was organized by building architectural features to demarcate space or delineate a pathway for the visitors. The Two Owls Chamber measures about 54 m², and the *grieta* walls on either side lean inward partially enclosing the chamber. Although the plan map of Passage 1 shows the area to be comparable to the chamber, measuring about 48 m², the low ceiling and sloping floor along the west side of Passage 1 give the impression that the passage is much more narrower. In fact, the placement of Wall 1 at the northern end of Passage 1 indicates that its purpose was to partially restrict and separate the passage from the more spacious

chamber. In conducting ritual activities, the burning of offerings in the passage would have limited the number of people able to be present at any given time inside the passage.

Very little cultural material was found in the Two Owls Chamber, except for the space adjacent to Wall 2. Excavation exposed a cache, under a wide carbon lens containing a complete, long bone needle, 2 greenstone pendants, and 2 perforated peccary canines. This may have been intended as a dedicatory cache prior to constructing the wall. Though the wall's function remains elusive, it was built on top of a large cube-like boulder, which had a flat face suggestive of cut, facing stone. Flowstone was exposed at the base of the excavation and stalactites remained active, suggesting that the watery quality of this area lent some import to the area.

Passage 1 was the primary activity area, with the bulk of activities culminating in the center of the passage, demarcated in the north and south by two rock alignments. The selection of the passage over the chamber for the enactment of ritual practices may be due in part to the enclosed and darker morphology of the space. This space may have resembled the womb to the ritual practitioners, as suggested by the presence of the highest concentration of textile production tools in this passage, possibly a result of fertility rituals (Ishihara 2006a). The high concentration of drum sherds may relate to rain-making rituals, as beating on the drums were metaphors for thunder. Toward the end of use in this passage, a young child was interred at the north end of the passage in front of the altar-like modified ledge in the *grieta* wall.

The visitors to this area were likely of a higher status, based on the presence of several artifacts. These include: the pyrite mirror mosaic piece, as mirrors were worn by nobles and used for divination (Miller and Taube 1993:114-115); needles perhaps for embroidery (Hendon 1992:14; Hendon 1997; Houston and Stuart 2001:64, n4; McAnany and Plank 2001); an arch-shaped carved pendant and carved ring (cf. Dacus 2005) made of conch which must have been imported; a greenstone celt which was used for carving stelae (Kazuo Aoyama, personal

communication, 2006); and a Delirio Plano-relief vessel for its rarity at Aguateca and in the Petén.

The high status of the ritual participants in the Two Owls Area can also be observed in the location of the area in relation to the surface site. The Two Owls Area is adjacent to the Main Plaza, or rather the Main Plaza was constructed adjacent to this area of the Grieta Principal (**Figure 8.5**). I suspect this is not coincidental but was due to intentional planning on the part of the ruling elite who commissioned the building of Aguateca. The finding of a small cave that continues directly under Structure L8-6 parallels cases discussed by Brady (1997b), in which a site or a group of buildings were built on top of a cave feature.

I further suggest that the Two Owls Area and access to it was comparable to the pyramid tops of Structures L8-5 and L8-6. The large, public plaza provided space for the majority, if not all, of the Aguateca community members to gather for special occasions. With the general populace in the plaza, the ruler and the elites conducted ritual performances and other ceremonies. As Inomata (2001a-345) notes, such spectacles were important means for the ruler to publicly legitimate and maintain his power and authority. Visibility of the ruler at the top of the pyramid, literally and metaphorically, provides a visual reification of the ruler's powers. However, I suggest that the public display of power can also occur when only particular people are allowed access into religiously important or sacred places. If the common Aguatecans could witness the privileged few entering the Grieta Principal to communicate with the supernatural spirits (but not see the actual rituals), this *invisibility* would provide supernatural sanction of the ruling elite's powers. In fact, a ladder could provide access from the area in between Structures L8-6 and L8-7 that leads toward the Cave Under the Bridge (which is itself below Str. L8-6) directly to the Two Owls Passage, the exposed passage west of Passage 1. If this was the case, the Two Owls Area

would have been an integral part of these public ceremonies as a strategy to maintain and consolidate the ruler's power.

Hidden Jar Area

In the Hidden Jar Area, the alcove at the entrance of the Inner Chamber was the primary locus of ritual activity during the Late Preclassic and Early Classic. Objects were left as offerings on the altar, as several clusters of artifacts were found on top of the low platform feature that had been constructed. None of the earlier ceramics are reconstructible, so it appears that curated sherds were deposited. Only some unmodified shell was found in association with the Late Preclassic deposits and a human bone with the Early Classic. Other non-ceramic materials were recovered in Late Classic contexts.

It is unknown when Wall 4 was constructed in the Inner Chamber. The niche adjacent to this wall was an activity area, possibly as early as the Early Classic. The Saxche-Palmar Orange Polychrome bowl that may be associated with a Tikal ruler signifies its owner as someone of high status, and its deposition here may indicate use of this area shortly after the establishment of the Aguateca – Dos Pilas dynasty in the early 7th century.

In the Late Classic, the focus of ritual activity centered on the wet area in front of the stalagmite in the Inner Chamber. This area was possibly modified to form a platform and with the low, naturally flat ceiling, the area feels like a partially enclosed room. Much burning took place here, perhaps of ritual hearths. The caching of a “killed” partial water jar behind one of the few stalagmites in the wet area may allude to rain-making rituals. Of particular interest is the recovery of a torso of an adult (35 – 50 years) individual of unidentified sex (Palomo 2005) that had been deposited directly in front of the stalagmite. Palomo (personal communication, 2006) suggests that this individual may have been decapitated. The ratio of jar forms was high (almost 75 % of the rim counts) reinforcing the idea of rain-making rituals.

Different cultural practices took place in the Outer Chamber of the Hidden Jar Area compared to the Inner Chamber. It appears that most of the activities in this area were carried out in the lower, flat area (where Units 9 and 14 were located) because very little cultural material was found from Unit 10 in the slightly higher area along the western *grieta* wall. Only a small quantity of Preclassic and Early Classic sherds were found. The Late Classic ceramic assemblage shows an almost equal frequency between jars and open forms like bowls and plates. The large quantity of disarticulated human bone, and in particular, the absence of long bones, in addition to cut marks suggestive of cutting apart the skeleton and the skin, may suggest that the disarticulation of bodies was carried out here and the long bones were taken elsewhere, leaving the smaller bones such as foot bones. No musical instruments were found in the Outer Chamber, suggesting that no musical performances were conducted in this area unlike the similarly open and wide space on Chill Hill.

Windy Valley

From the unit in Windy Valley was recovered the earliest interment in the *grietas* from a stratigraphically secure deposit. The interment consists of one partially articulated individual and disarticulated bone from at least two other individuals. Few artifacts were deposited during the Early Classic as well, suggesting minimal activity in this area at this time. Use of this area increased during the Late Classic, as the corresponding strata (levels 1 through 3) contained a higher frequency of artifacts. Overall, the sparse distribution of the majority of these artifacts throughout the unit makes it difficult to interpret their depositional processes. The relatively low volume of cultural material recovered negates the possibility of a household midden deposit, which may have entered from the surface site above. The finding of a quartz crystal may indicate ritual use, but the identification of the activities based on one artifact deems unreliable, and additional test pits would be needed before anything conclusive can be said of the use of this area.

Chill Hill Area

The proximate location to a royal elite residence and the wide and open nature of the space were reasons to suspect that the Chill Hill Area was used for non-religious functions, such as a place to dump daily trash or quickly dispose of the dead bodies after the burning of the epicenter. On the contrary, no evidence for middens or burial grounds was found; data from excavations suggest that this area was likewise transformed by a series of ritual practices.

Two primary activity areas were identified on this hill: the open flat space and the small cave. In the open chamber, the combined evidence of much burning, a high frequency of polychrome vessels, the presence of killed vessels, the highest frequency of partial or reconstructible vessels, the highest frequency of miniature vessels, and the paucity of faunal material do not point to a daily household midden. In addition, a thin layer of red pigment, probably cinnabar, which is often associated with burials and other ritual contexts, was found adhering to the interior of Tinaja Red or Pantano Impressed jar basal sherds. As the carbon lenses suggest, events consisting of burning took place in the open chamber. It should be noted that the numerous reconstructible vessels indicate that these deposits were not dropped from the surface, since a 30-meter fall would cause the artifacts to smash into very small pieces and the fragments would be dispersed. This was not the case here.

The cave at the peak of this hill, despite its small size of about 11 m², contained a higher density of artifacts than the aforementioned unit. Much carbon was found, likely from torches, but no hearths were uncovered. One of the highest frequencies of musical instruments is reported from this cave. Also of interest are the disarticulated remains of possibly 2 children and at least 1 adult found inside the cave.

Sherds that are probably of the same vessel were found from the two areas (Units 1 and 2), suggesting that the ritual practitioners moved through these areas as part of one contiguous

space (**Figure B.5d**: 804744, 905064). This practice of a dynamic and fluid movement of the practitioners is seen in various areas including Chill Hill, the Two Owls Area, and the Hidden Jar Area. The presence of a white stone vessel fragment with incised glyphs and an incised Fine Black sherd which may have been imported from the Usumacinta Valley, combined with the abundance of polychromes suggest that the participants of the activities were of elite status (Inomata, personal communication, 2005; Luke n.d.). Overall, a high frequency of weaving related implements were found on Chill Hill, possibly relating to fertility rituals (Ishihara 2006a). Based on the ceramics recovered, this hill was used primarily after AD 760. The large number of weaving tools deposited here, perhaps by women, may have been part of fertility rituals asking for the continued success of the Aguateca dynasty, particularly after Ruler 4 was captured and Aguateca became the primary capital. Moreover, the high concentration of wind instruments combined with the observation of clouds emerging and winds blowing, rain-making rituals may have been performed.

At a time of crisis when the political climate became more unstable for Aguateca, after ca. AD 761, the ruling elite apparently decided to focus their rituals on Chill Hill, shifting away from the Two Owls Area which seems to have been the primary area of rituals up until this point. As discussed in detail in an earlier section, associations of the wind god and Chaak, rain-making rituals, and warfare indicate that such rituals would have been appropriate in not only asking for rain and fertility to show the prowess of the ruler, but also in the context of a politically unstable climate in which Dos Pilas was largely abandoned and Aguateca was the primary capital.

Paralleling the hypothetical ritual reconstruction of the Two Owls Area, the Chill Hill ritual practices may have been part of larger ceremonial activities that occurred at the surface site. Chill Hill's location (**Figure 8.6**) adjacent to the Palace Group where the royal family resided suggests that the rituals performed on Chill Hill were related to the activities and residents of the

Palace Group. As discussed for the Two Owls Area with regard the Main Plaza, “invisibility” of power may have served the ruler again. In this case, the audience would be more exclusive as the Palace Group is much smaller than the Main Plaza, possibly allowing access only to the elites (cf. Inomata 2006a:814). This privileged access would help garner the elites’ political support of the ruler while they would witness the public display of the ruler’s authority and power. Theatrical performances conducted on the low and open platform Structure M7-33 (Inomata 2006a:814) may have been complemented by the dramatic disappearance of the privileged few into the *grieta*. Acoustical effects of the area may have been taken advantage of as well. Working on Chill Hill, we could clearly hear guides talking to their tourists on the surface site, probably standing somewhere on the *grieta*-side (west) of Structure M7-32 or M7-33. However, as much as we yelled, we were not heard by the people on the surface site. A more rigorous experimental study is necessary but it may be that the acoustic and visual seclusion from the people in the Palace Group area may have played in to the “invisibility” of power.

With Chill Hill at a depth of about 25 m below the surface site, a ladder could have easily allowed direct access from the Palace Group to Chill Hill. In fact, there is space seemingly protected by Defense Wall 14, which would appear to be an ideal place for a ladder. Alternatively, a longer ladder could have extended down to the base of the slope leading up to Chill Hill, if the hike up it was of particular significance. Wherever the access way, Chill Hill was clearly an important ritual space, possibly used by the inhabitants of the Palace Group.

Grieta Rincón

Not surprisingly due to its proximity to the Aguateca site core, the Grieta Rincón was also intensively used but with distinct spatial patterns. A platform was constructed inside the cave on the first level, probably during the Late Preclassic or Early Classic, possibly contemporaneous with use of the Barranca Escondida area and the cave there. Very little use of the interior of the

cave is apparent for the Late Classic, though it is unknown when the disarticulated human bone found throughout the cave on the surface was deposited. The observation that no bones were recovered from the less accessible, upper chamber of the first level and the haphazard spatial distribution of the bones suggests that fragments of bone or body parts may have been thrown in from the cave entrance. The lack of stratigraphic information associated with the bone precludes placement in a temporal context.

Immediately outside the cave in the Grieta Rincón, stalagmites along the western *grieta* wall had been broken off. A surprisingly high frequency of artifacts was recovered in the area by the cave entrance. This area may have been a central place where ritual activities were conducted because two cosmologically important materials are located together: the cave and water. The floor was covered with rimstone dams, indicating that at one time the alcove had small pools of water. Additionally, during the hottest times during the day, we could observe the cave “breathing” out cool air. This wind is precisely earth’s breath and soul (Taube 2001:105), which may have been a primary reason for the significance of this space in front of the cave entrance (where Unit 4 was located). Disarticulated human bone had also been deposited outside the cave, one of the highest concentrations of cranial elements, including a cranium with a postmortem perforation at the crown of the head. The fine craftsmanship of the intricately carved bone depicting a serpent with an ancestral head in its mouth, emerging from the brow of a zoomorphic *witz* suggests that the visitors to the Grieta Rincón, like the Grieta Principal, were of high status.

Table 8.1. Identified faunal material by lot. Note lots AG31D-1-4-1 and 1-7-1 are not included due to their very low frequency of material. All faunal identification was conducted by Dr. Kitty Emery and Michelle LeFebvre. Unidentified vertebrae are not included in the counts.

		31A- 9-2-1	31B- 11-1-1	31B- 11-1-3	31B- 14-2-1	31B- 14-2-2	31D- 1-4-1	31D- 1-5-1	31D- 1-6-1	31D- 1-7-1
Mammals	Opossum, <i>Didelphis sp.</i>	1(1)	61(5)	4(1)		4(1)				
	Water opossum, <i>Chironectes minimus</i>		2(1)							
	Armadillo, <i>Dasyus novemcinctus</i>		1(1)		1(1)					
	Cottontail rabbit, <i>Sylvilagus sp.</i>		3(2)			1(1)				
	Pocket gopher, <i>Orthogeomys hispidus</i>				1(1)					
	Paca, <i>Agouti paca</i>				2(1)					
	Agouti, <i>Dasyprocta sp.</i>		2(1)							
	Porcupine, <i>Coendu sp.</i>			1(1)						
	Rodent, unidentified		22	68	5					
	Northern racoon, <i>Procyon lotor</i>		2(1)							
	New World leaf-nosed bat, <i>Phyllostomidae</i>		1(1)							
	Domestic dog, <i>Canis familiaris</i>	1(1)	6(1)	3(2)	3(1)	22(4)		1(1)		
	Carnivore, unidentified				1(1)					
	Peccary, unidentified	7(2)			161(3)					
	White-tailed deer, <i>Odocoileus virginianus</i>	9(2)		4(1)	2(1)	9(2)		5(1)		
	Brocket deer, <i>Mazama americana</i>	2(1)								
	Deer, <i>Cervidae</i> , unidentified		1(1)							
	Mammal, unidentified	10	175		242	22				
	Mammal-large, unid	10	13							
	Mammal-large/med, unid		166	17	220	6		1		
Mammal-medium, unid		4			1					
Mammal-med/small, unid		33		5						
Mammal-small, unid		18	7							
Birds	Laughing falcon, <i>Herpetotheres cachinnans</i>		11(1)							
	Turkey, <i>Meleagris sp.</i>							4(1)		
	Scarlet macaw, <i>Ara macao</i>	2(1)								
	Cardinal, <i>Cardinalis sp.</i>			1(1)						
	Perching bird, <i>Passeriformes</i>		1(1)							
	Bobwhite, <i>Colinus sp.</i>		11(2)							
	Doves/pigeons, <i>Columbidae</i>		1(1)							
	Barn owl, <i>Tyto alba</i>		3(1)							
Bird, unidentified	4	34	4							
Reptiles	Mexican giant musk turtle, <i>Staurotypus sp.</i>	39(1)							1(1)	
	Mud turtle, <i>Kinosternon sp.</i>			2(1)	2(1)	1(1)				

Table 8.1. Continued.

	31A-9-2-1	31B-11-1-1	31B-11-1-3	31B-14-2-1	31B-14-2-2	31D-1-4-1	31D-1-5-1	31D-1-6-1	31D-1-7-1
Mesoamerican river turtle, <i>Dermatemys mawii</i>		6(1)						2(1)	
Pond turtle, <i>Trachemys scripta</i>			1(1)	2(1)	1(1)				
Turtle, <i>Testudines</i> , unid	18	3	2		1			8	
Lizard, <i>Sauria</i> , unid		3(1)	1(1)				1(1)		
Rattlesnake, <i>Crotalus durissus</i>		1(1)							
Viper, <i>Viperidae</i> , unid		1							
Reptiles, unidentified		3							
Amph									
Toad, <i>Bufo sp.</i>			5(1)						
Toad/frog, <i>Anura</i> , unid		9(2)							
Fish									
Freshwater fish, <i>Cichlidae</i>		2(1)							
Bony fish, <i>Osteichthyes</i>		3			14				
Molluscs									
Freshwater mussel, <i>Unionidae</i>		30(1)	9(1)	1(1)			1(1)	2(2)	
Freshwater clam, <i>Nephronaias sp.</i>		1(1)	1(1)			1(1)			
Apple snail, <i>Pomacea flagellata</i>		1(1)	9(1)						
Univalve, <i>Gastropoda</i> , unid		1(1)							
Tree snail, <i>Orthalicus sp.</i>		1(1)	1(1)						
Vertebrate, <i>Vertebrata</i> , unid	110	72	29	52	6		3		1
TOTAL IDENTIFIED NISP(MNI)	103(9)	636(31)	140(14)	648(12)	82(10)	1(1)	13(5)	13(3)	0

Table 8.2. Frequencies of vessel forms for the units with analyzed faunal data.

	Outer Chamber, Hidden Jar		Chamber 5, Chill Hill		Passage 1, Two Owls Area		South of Passage 1	
	31A-9-2-1		31D-1-5-1, 1-5-2, 1-5-3		31B-11-1-3, 31B-7East		31B-14-2-1, 14-2-2	
	wt (freq)	%wt (%freq)	wt (freq)	%wt (%freq)	wt (freq)	%wt (%freq)	wt (freq)	%wt (%freq)
Cambio Unslipped jar	5549 (283)	28.9 (25.7)	811 (48)	9.1 (10.1)	4633 (183)	57.0 (38.3)	18483 (805)	45.4 (5.8)
Tinaja Red jar	4745 (243)	24.7 (22.1)	3409 (190)	38.2 (40.1)	1919 (106)	23.6 (22.2)	5108 (9412)	12.5 (68.1)
Polychrome jar	761 (36)	4.0 (3.3)	0 (0)	0 (0)	16 (1)	0.2 (0.2)	159 (8)	0.4 (0.1)
Subin/Chaquiste bowl	2556 (101)	13.3 (9.2)	3102 (106)	34.8 (22.4)	56 (2)	0.7 (0.4)	6486 (3021)	15.9 (21.8)
Small-medium bowl	1605 (140)	8.4 (12.7)	625 (33)	7.0 (10.6)	866 (115)	10.6 (24.1)	1585 (98)	3.9 (0.7)
Platter	1618 (59)	8.4 (5.4)	316 (15)	3.2 (0.1)	10 (1)	0.1 (0.2)	5232 (234)	12.8 (1.7)
Vase	117 (12)	0.6 (1.1)	83 (8)	1.7 (0.8)	67 (14)	0.8 (2.9)	423 (35)	1.0 (0.3)
Other/Unidentified	2236 (227)	11.7 (20.6)	573 (74)	15.6 (6.9)	565 (56)	6.9 (11.7)	3261 (218)	8.0 (1.6)
TOTAL	19187 (1101)	100 (100)	8919 (474)	100 (100)	8132 (478)	100 (100)	40737 (13831)	100 (100)

Table 8.3. Frequencies of rim sherds by vessel form.

	Outer Chamber, Hidden Jar		Chamber 5, Chill Hill		Passage 1, Two Owls Area		South of Passage 1	
	31A-9-2-1		31D-1-5-1, 1-5-2, 1-5-3		31B-11-1-3, 31B-7East		31B-14-2-1, 14-2-2	
	freq	%	freq	%	freq	%	freq	%
Cambio Unslipped jar	31	21.5%	0	0.0%	15	45.5%	48	13.1%
Tinaja Red jar	22	15.3%	8	14.0%	2	6.1%	20	5.5%
Polychrome jar	3	2.1%	0	0.0%	1	3.0%	1	0.3%
Subin/Chaquiste bowl	30	20.8%	18	31.6%	1	3.0%	105	28.7%
Small-medium bowl	41	28.5%	9	15.8%	9	27.3%	37	10.1%
Platter	14	9.7%	3	5.3%	1	3.0%	103	28.1%
Vase	2	1.4%	2	3.5%	1	3.0%	7	1.9%
Other/Unidentified	1	0.7%	17	29.8%	3	9.1%	45	12.3%
TOTAL	144	100.0%	57	100.0%	33	100.0%	366	100.0%

Table 8.4. Spatial distribution of musical instruments: ceramic drums, flutes, whistles, and bone rasps. The frequencies of the latter three represent number of instruments.

	Drum		Flute	Whistle	Rasp	
	wt (g)	freq				
Grieta Principal	Hidden Jar Area (Op. 31A)	155	7	0	0	1
	Slope between Inner/Outer Chambers (Units 2, 5)	34	1	0	0	0
	Inner Chamber (Units 1, 3, 4, 11, 12)	77	5	0	0	1
	Outer Chamber (Units 9, 10, 14)	0	0	0	0	0
	Altar-platform at entrance to Inner Chamber (Units 6, 13)	44	1	0	0	0
	Two Owls Area (Op. 31B)	1176	92	1	5	0
	Two Owls Chamber, general (Units 2, 3, 5, 13)	0	0	0	0	0
	Two Owls Chamber, Step 1 (Unit 8)	0	0	0	0	0
	Two Owls Chamber, Wall 2 (Unit 9)	0	0	0	0	0
	Rocky Passage (Unit 4)	47	1	0	0	0
	Passage 1, general (Unit 1)	9	1	0	0	0
	Passage 1, north end (Units 6, 10)	429	38	0	0	0
	Passage 1, central activity area (Units 7, 11)	0	0	0	1	0
	Passage 1, south end (Unit 12)	161	13	0	2	0
	South of Passage 1 (Unit 14)	530	39	1	2	0
	Cave Under the Bridge (Unit 15)	0	0	0	0	0
	Southern Entrance Area (Op. 31C)	301	15	0	3	0
	Entrance Passage (Unit 1, 11)	0	0	0	0	0
	Crawlway below Pozo (Unit 2)	0	0	0	0	0
	Upper Chamber (Units 3, 6, 8, 9, 10)	301	15	0	3	0
	Nasal Passage (Unit 4)	0	0	0	0	0
	Passage 8 (Unit 5, 7)	0	0	0	0	0
	Chill Hill (Op. 31D)	351	22	8	18	1
Chamber 5 (Unit 1)	117	7	0	9	0	
Inside cave (Units 2, 5)	107	5	5	8	1	
Entrance to cave (Unit 6)	0	0	3	0	0	
West of cave (Units 3, 4)	109	9	0	0	0	
Possibly terraced hill (Units 8, 9)	18	1	0	1	0	
Northwest of cave, by Hobbit Alcove (Unit 7)	0	0	0	0	0	
Windy Valley (Op. 31E)	57	4	0	1	0	
Grieta Rincón	The Cave (Op. 30A)	0	0	0	0	0
	Inside cave, general (Units 1, 2, 3)	0	0	0	0	0
	Inside cave, platform fill (Unit 5)	0	0	0	0	0
	The Grieta (Op. 30B)	23	2	1	1	0
	Outside cave, southwest of entrance (30B-1)	23	2	0	0	0
	Outside cave, front of entrance (30B-4)	0	0	0	1	0
Outside cave, north of cave entrance (30B-2)	0	0	1	0	0	
TOTAL	2063	142	10	28	2	

Table 8.5. Frequency of textile production tools.

Tool type	Complete	Fragment	Total freq
Needle	6	2	8
Pin	4	6	10
Weaving pick	2	2	4
Spindle whorl, specially made	2	1	3
Spindle whorl, sherd disk	3	1	4
Spindle whorl, bone disk	2	3	5
Total	19	15	34

Table 8.6. Spinning tools recovered from the Grieta Principal. (C/F = Complete or Fragment). (All dimensions are in mm).

Artifact type	Provenience	Artif #	Diam	Thick	Hole diam	Wt (g)	C/F	Material	Decoration
Bone disk	AG31A-2-0-1	115	40	6	6.0	3.0	F	bone	plain
Bone disk	AG31A-5-0-1	186-01	40	7	6.0	6.5	C	bone	plain
Bone disk	AG31A-5-0-1	186-02	41	5	6.5	5.0	F	bone	plain
Bone disk	AG31A-5-0-1	186-03	48	4	5.5	3.5	F	bone	plain
Bone disk	AG31B-7-5-4	246	42	5	6.0	n/a	C	turtle carapace?	plain
Sherd disk	AG31A-12-2-2	166	25 - 29	8	5.0	7.5	C	ceramic	polychrome
Sherd disk	AG31A-9-2-1	128	44- 46	4	9.0	10.5	C	ceramic	black slip
Sherd disk	AG31B-10-1-1	302	28 - 32	4	4.0	5.0	C	ceramic	cream/ black slip
Sherd disk	AG31D-1-5-1	132	67	9	7.0	33.0	F	ceramic	red slip
Spindle whorl	AG31A-11-2-1	194	30	17	6.0	21.5	C	limestone	plain
Spindle whorl	AG31B-8-1-1	258	24	9.5	5.5	7.0	C	limestone	plain
Spindle whorl	AG31D-8-2-1	311	28	19	5-10	7.0	F	ceramic	incisions, geometric

Table 8.7. Weaving tools recovered from the Grieta Principal and Grieta Rincón. (C/F = Complete or Fragment. L=length, Th=thickness, Wt=weight).

Tool type	Provenience	Artif No.	L (cm)	Th (cm)	Wt (g)	C/F	Material	Décor
Awl	AG31A-11-2-1	193	10.3	1.3	7.0	C	bone	None
Awl	AG31C-9-1-1	125	12.0	2.6	16.0	C	bone	None
Awl?	AG31B-7-4-4	194	9.7	1.4	N/a	C	bone	None
Awl?	AG31D-5-2-3	192	6.2	1.8	5.5	F	bone	None
Awl?	AG31E-1-2-1	105	6.2	2.7	n/a	F	bone	None
Needle	AG30B-4-2-16	183	4.0	0.35	< 0.5	F	bone	None
Needle	AG31A-12-2-1	228	11.4	0.2	1.0	C	bone	None
Needle	AG31A-12-2-1	148	7.7	0.3	1.0	C	bone	None
Needle	AG31B-11-1-1	313	6.0	0.4	0.5	C	bone	None
Needle	AG31B-11-1-3	335	15.4	0.6	4.0	C	bone	None
Needle	AG31B-11-1-3	335	5.5	0.3	0.5	C	bone	None
Needle	AG31B-9-5-2	312	13.9	0.5	2.5	C	bone	None
Needle	AG31D-5-2-1	174	3.5	0.3	< 0.5	F	bone	None
Pick	AG31B-12-1-1	286	3.7	0.5	0.5	F	bone	None
Pick	AG31B-14-2-1	357	15.0	0.55	5.5	C	bone	Carving
Pick	AG31B-14-2-2	360	16.8	0.5	4.5	C	bone	Carving
Pick	AG31B-14-2-2	359	28.7	0.8	19.5	C	bone	Carving
Pick	AG31D-5-2-1	174	4.9	0.55	1.5	F	bone	None
Pick?	AG31A-13-3-1	151	4.4	1.1	2.5	F	bone	Carving
Pick?	AG31B-12-1-1	286	6.2	0.45	1.5	F	bone	None
Pick?	AG31B-7-5-5	218	6.4	0.5	n/a	F	bone	none
Pick?	AG31E-1-3-1	111	15.2	1.5	n/a	F	bone	none

Table 8.8. Distribution of textile production tools by Unit.

Unit No.	Grieta Principal															Grieta Rincón		
	Hidden Jar Area				S Ent	Two Owls Area						Chill Hill Area			Wind y Valle y	Outside cave		
	Entrance slope	Outer Chamber	Inner Chamber	Entrance Alcove	Upper Chamber	Step 1	Chamber 1, S of Wall 2	N part of Passage 1	Middle of Passage 1	South end of Passage 1	South of Passage 1	Flat, open area	Inside Cave	Peak of modified (?) hill	Passage 9	Front of Cave Entrance		
	31A-2&5	31A-9	31A-11	31A-12	31A-13	31C-9	31B-8	31B-9	31B-10	31B-7&11	31B-12	31B-14	31D-1	31D-2&5	31D-8	31E-1	30B-4	TOTAL
Needle	0	0	0	2	0	0	0	1	0	3	0	0	0	1	0	0	1	8
Pick	0	0	0	0	1	0	0	0	0	1	2	3	0	1	0	1	0	9
Awl	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	4
Spindle whorl	4	1	1	1	0	0	1	0	1	1	0	0	1	0	1	0	0	12
TOTAL	4	1	2	3	1	1	1	1	1	5	2	3	1	3	1	2	1	33

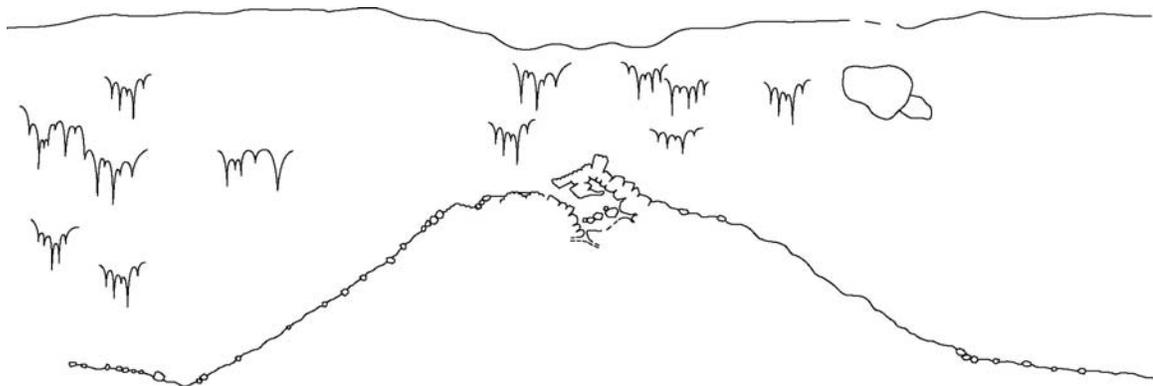


Figure 8.1. Profile of the Chill Hill Area. Note its form embodies the Maya conception of mountain-cave. Right of figure points northerly.

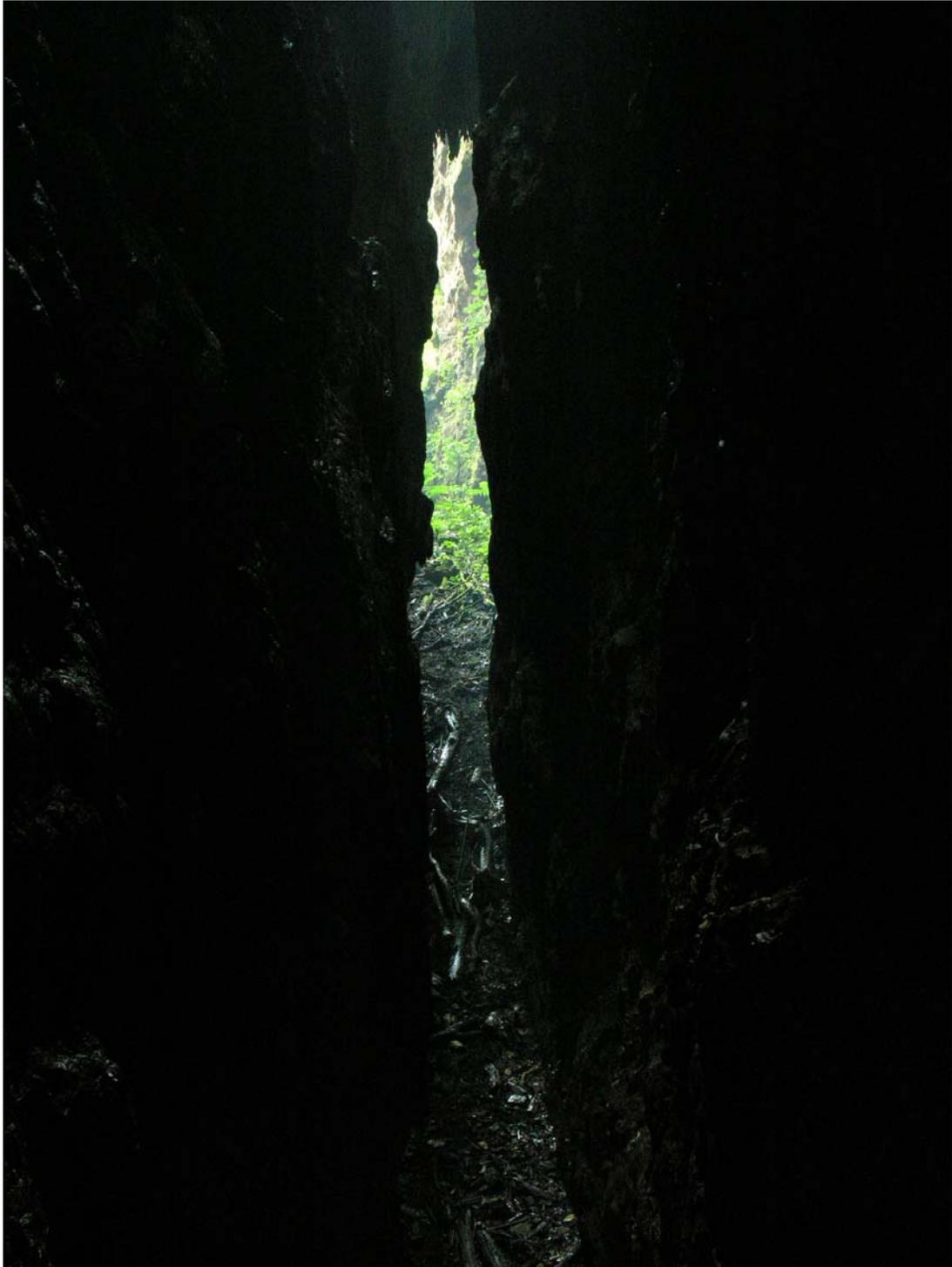


Figure 8.2. The long, steep slope up to the Chill Hill Area. Facing north. The light area at the top of the photo is the exposed Chill Hill Area.



Figure 8.3. Thick clouds rising from the southern slope onto Chill Hill.

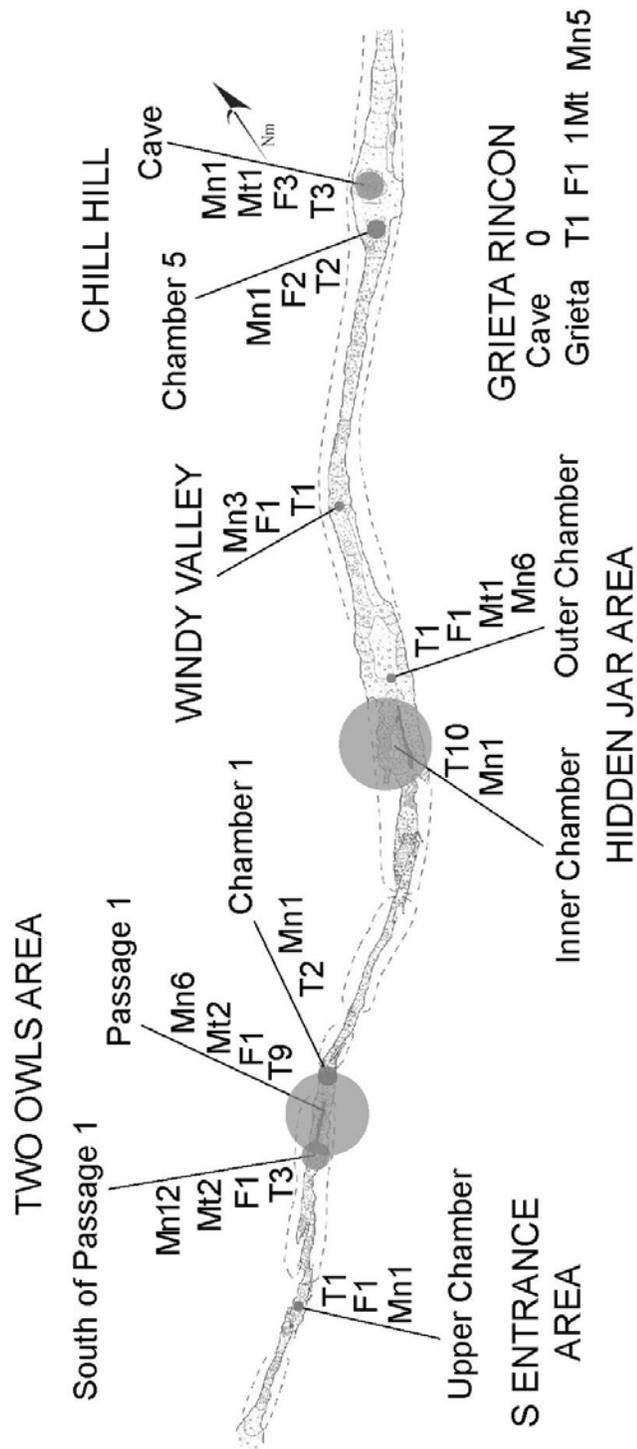


Figure 8.4. Distribution of textile production tools (T), figurines depicting females (F), manos (Mn), and metates (Mt). The colored circles are proportionate to the relative frequency of textile production tools.

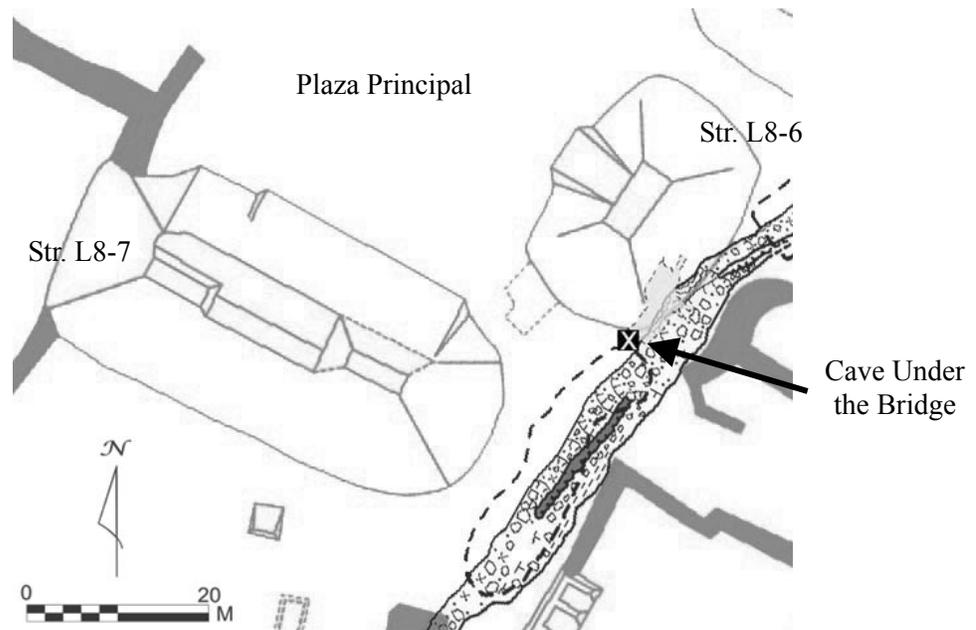


Figure 8.5. Relative location of the Two Owls Area to the Main Plaza. Note the entrance to the Cave Under the Bridge that runs below Str. L8-6 as shown in the light gray and its entrance is marked with a white X in a black square. The dotted line, which outlines the top surface of the grieta, roughly encircles the Two Owls Area.

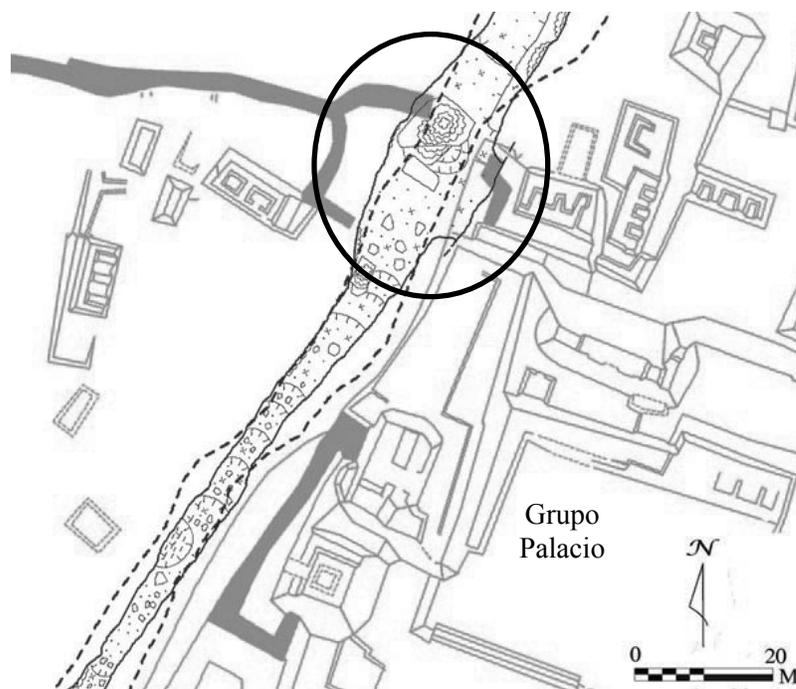


Figure 8.6. Relative location of the Chill Hill Area (circled) to the Palace Group.

CHAPTER 9

CONCLUSION

At the most basic level, this dissertation research on the Grieta Principal that runs through the center of the Late Classic Maya political site of Aguateca archaeologically expands the current field's understanding of the definition of a "cave" in Maya cosmological terms. The large scale and unique geomorphology of the narrow and deep chasm, or *grieta*, diverges from other known type of cave systems, cavern, cenote, or rockshelter. An extensive excavation program tested a variety of spaces throughout the length of the *grieta* in order to examine any cultural materials present, and if so, what the nature of the activities the materials might represent. From within this "break in the earth's surface," an abundance of well-preserved artifacts and bone material in addition to architectural modifications were documented. The materials typified a cave artifact assemblage, including unslipped jars, monochrome water jars and other vessel forms, polychrome vessels, obsidian blades and cores, chert tools, ground stone tools, figurines, worked bone objects, unmodified faunal material, and human remains. Much evidence of burning characterized the areas with high concentrations of cultural materials. No evidence of non-religious use of the *grieta* was encountered, such as disposal of daily trash or mass burials of the Aguatecans that supposedly died in a battle when they were attacked during the early 9th century. Thus I suggest that the *grieta* represented a place of central importance to the religious lives of the people.

Indeed, the Grieta Principal may have served a focal position in establishing the "sacred landscape" that agreed with a cosmologically significant spatial configuration. With the *grieta* as the *axis mundi* of the community, the political center was built around this topographic feature. Moreover, the royal residential area stood at the higher end of the site, flanked to the east where

the rising sun would emerge from the waters of the Petexbatun Lake, and to the west where the dying sun would sink into the underworld through the *grieta*.

Ascertaining conformity to this spatial layout does not tell much about how the people lived with this landscape feature, and in turn how the *grieta* affected their lives. More pointedly, who were the ones entering the *grieta*, what kind of practices took place, with what sorts of meanings, and in which spaces? How did these practices transform over time, and why? As an arena where people entered to negotiate with the “dead” ancestral spirits for good harvest, successful hunting, victorious war, justice for a wrongdoing, love, or whatever the objective may be, what kind of negotiations can we unravel of social relations between the living people who enter into these negotiations? Given its central location, was access into the earth restricted and what were the social and political implications? How did the politics of the region and the dynasty’s role in it articulate with social practices in the *grieta*? These are but some of the questions that I have tried to consider.

The data from excavations suggest that, prior to the arrival of the Dos Pilas – Aguateca dynasty to the area, the Grieta Principal was of limited importance to the local residents. It seems both the Grieta Principal and Grieta Rincón were visited during the Late Preclassic and Early Classic but mainly for small scale rituals. Therefore, when B’alaj Chan K’awiil and company arrived to Dos Pilas around AD 632, and later to Aguateca, to establish a Tikal outpost in an effort to gain control over the western river route, the elites had a relatively clean slate on which to construct their new political capitals. By AD 650, which is the date of the earliest known record of Aguateca’s toponym, K’inich Pa’ Witz, the Grieta Principal was already recognized as an integral part of the landscape that defined the community. Although it is not clear when construction at Aguateca initiated, it is thought that by AD 731 when the first stela, Stela 3, was commemorated at Aguateca, many of the structures were already standing. Perhaps it can be

suggested that by around this time, with the civic center growing around the *grieta*, the “sacred landscape” of Aguateca had been established.

The question lies in the discrepancy between the newly built city with the “sacred” *grieta* and the possible lack of significance attached to it by the local population. I suggest the ruling elite incorporated the Grieta Principal into a series of ceremonies that may have taken place in the Main Plaza where most if not all the community members could attend. The proximity of the Two Owls Area, located adjacent to the Main Plaza, may reinforce the notion that rituals in these two areas were linked. Certainly, only a handful of people could have entered the *grieta*, but the public display of exclusion to the privileged few would have provided a source of power. In this study, I have suggested that fertility rituals involving women of post-menopausal age or high status may have taken place in the passage, as signified by the concentration of weaving related implements that are associated with high status females. In addition, rain-making rituals may have also been performed, playing drums to mimic thunder. It is unknown whether the beating of drums in the *grieta* could be heard in the Main Plaza, but if they could, this would tend to reinforce the power stemming from being audible but invisible.

The high concentration of artifacts and charcoal in the passage suggest that these rituals were performed on multiple occasions. It was during this time that the architectural modifications in the Two Owls Area were undertaken. Though we cannot be for sure, it is likely the modifications took place over time to accommodate the ritual practices. The ruler at this time, “Ruler 3,” governed for about 14 years from AD 727 to 741, with his main accomplishment the capture of a Seibal lord.

Perhaps the Seibal victory by K’awiil Chan K’inich and the several other captures that followed comprised the “good times” of the Dos Pilas – Aguateca reign. Within a few decades, however, in AD 761, K’awiil Chan K’inich’s ambitious political game comes to a close. He was

captured by Tamarindito and possibly killed. This event triggered social reorganization at both sites, as Dos Pilas was largely abandoned and Aguateca became the primary capital, with Tan Te' K'inich assuming office in AD 770. Following his accession, new construction programs arose, and use of the Grieta Principal followed a path of radical transformation as well. The building of a system of defensive walls throughout the site transformed spatial organization and the inhabitants' lives, which likely had an effect on ritual practices as well, such as changes in *grieta* access points and possibly procession routes. Although the precise extent to which the political context affected ritual practitioners and their use of space cannot be known, the observation that elites were involved in the ritual practices lends support to the idea that the shift in *grieta* practices occurred with political associations.

The Two Owls Area, which was the primary area of ritual activities until this point, seemingly became obsolete, and Chill Hill rises as the focal point of religious life, at least for the upper echelon of Aguateca society. If proximity is any indication of related spaces, then activities on Chill Hill may have formed part of events that were carried out in the Palace Group. The Palace Group was the royal residential and administrative center, and the plaza is much smaller than the Main Plaza. If ceremonies on Chill Hill were performed in conjunction with activities in the Palace Group, then this smaller scale suggests that the ruling elites were more concerned about consolidating power with their support base, the lesser elites, rather than conducting rituals on a larger scale to promote the dominant ideology, which was possibly the case in the Two Owls Area earlier. The archaeology shows a shift in practices, as I have argued that rain-making rituals became the main focus of practices, appealing to the rain god and the wind god with flowery music from whistles and flutes. The political implications of control over the vital resource of water as well as success in warfare render these rituals fitting to the social conditions at the time. As an incised white stone vessel sherd and an incised Fine Black ware that may have originated

from the Palenque area indicate that the ritual participants of Chill Hill were most likely very high status people. Again, I suspect some level of participation by elite women took place.

The current study has attempted to use practice theory to examine how social negotiations played out on the ground in ritual contexts. The Aguateca *grieta* data, combined with the relatively brief and well-known political history, provided the opportunity to articulate elite ritual practices and social relations (such as gender relations) with dynastic politics. The majority of Maya sites, however, have a much longer and more complicated political history. The challenge for future studies will be to diachronically dissect and reconstruct social and historical processes in the context of macroscale practices comprised of politics, religion, and ideology among other factors.

REFERENCES CITED

- Adams, Abigail, and James E. Brady
1994 Etnografía Q'eqchi' de los Ritos en Cuevas: Implicaciones para la Interpretación Arqueológica. *In* VII Simposio de Arqueología Guatemalteca. J.P. Laporte and H.L. Escobedo A., eds. Pp. 205-211: Ministerio de Cultura y Deportes, Instituto de Antropología e Historia y Asociación Tikal, Guatemala.
- 2005 Ethnographic Notes on Maya Q'eqchi' Cave Rites: Implications for Archaeological Interpretation. *In* In the Maw of the Earth Monster: Mesoamerican Ritual Cave Use. J.E. Brady and K.M. Prufer, eds. Pp. 301-327. Austin: University of Texas Press.
- Adams, Richard E. W.
1971 The Ceramics of Altar de Sacrificios. Cambridge, Mass.: Peabody Museum.
- Agrinier, Pierre
1975 Mounds 9 and 10 at Mirador, Chiapas, Mexico. New World Archaeological Foundation Paper No. 39. Provo: Brigham Young University.
- Aguilera, Miguel
2004 Unshrouding the Communicating Cross: The Iconology of a Maya Quadripartite Symbol. Ph.D. dissertation, Department of Anthropology, State University of New York, Albany.
- 2007 Maya Skeletal Semen: Emerging from the White-Bone Snake. Paper presented at the 72nd Annual Meeting for the Society for American Archaeology, Austin, TX.
- Althusser, Louis
1971 Ideology and Ideological State Apparatuses. *In* Lenin and Philosophy and Other Essays. L. Althusser, ed. London: New Left Books.
- 1984 Essays on Ideology. London: Verso.
- Anawalt, Patricia R.
1981 Indian Clothing before Cortes: Mesoamerican Costumes from the Codices. Norman: University of Oklahoma Press.
- Anderson, A. H.
1962 Cave Sites in British Honduras. Akten des XXXIV Internationalen Amerikanistenkongresses, Wien, 1962, pp. 326-331. Verlag Ernest Berger, Horn.
- Andrews, E. Wyllys, IV
1961 Excavations at the Gruta de Balankanche, 1959. Appendix to: Preliminary Report to the 1959-1960 Field Season, National Geographic Society - Tulane University Dzibilchaltun Program. Pp. 28-40, Miscellaneous Series No.11. New Orleans: Middle American Research Institute, Tulane University.

1965 Explorations in the Gruta de Chac. Publication 31. New Orleans: Middle American Research Institute, Tulane University.

1970 Balankanche, Throne of the Tiger Priest. Publication 32. New Orleans: Middle American Research Institute, Tulane University.

Anonymous

1998 Kumatzim Wuj Tun. Codice de Dresde. Guatemala City: Cholsamaj.

Aoyama, Kazuo

1995 Microwear Analysis in the Southeast Maya Lowlands: Two Case Studies at Copan, Honduras. *Latin American Antiquity* 6(2):129-144.

1999 Ancient Maya State, Urbanism, Exchange, and Craft Specialization: Chipped Stone Evidence from the Copan Valley and the La Entrada Region, Honduras. *University of Pittsburgh Memoirs in Latin American Archaeology* No.12. Pittsburgh: University of Pittsburgh.

2001 Ritos de Plebeyos Mayas en la Cueva Gordon No.3 de Copan (Honduras) Durante el Periodo Clasico: Analisis de las Microhuellas de Uso Sobre la Lítica Menor de Obsidiana. *Mayab* 14:5-16.

2004 Analisis de Lítica. *In* Informe del Proyecto Arqueologico Aguateca Segunda Fase: La Temporada de Campo de 2004. E. Ponciano, D. Triadan, and T. Inomata, eds. Pp. 19.1-19.13. Report submitted to the Instituto de Antropología e Historia de Guatemala.

2005 Analisis de Lítica. *In* Informe del Proyecto Arqueologico Aguateca, La Temporada de Campo 2005. E.M. Ponciano, D. Triadan, and T. Inomata, eds. Pp. 20.1-20.35. Report submitted to the Instituto de Antropología e Historia de Guatemala.

Ashmore, Wendy

1989 Construction and Cosmology: Politics and Ideology in Lowland Maya Settlement Patterns. *In* Word and Image in Maya Culture: Explorations in Language, Writing, and Representation. W.F. Hanks and D.S. Rice, eds. Pp. 272-286. Salt Lake City: University of Utah Press.

1991 Site-planning Principles and Concepts of Directionality among the Ancient Maya. *Latin American Antiquity* 2(3):199-226.

1992 Deciphering Maya Site Plans. *In* New Theories on the Ancient Maya. E. Danien and R.J. Sharer, eds. Pp. 173-184, *Museum Monographs* 77. Philadelphia: University of Pennsylvania.

2002a "Decisions and Dispositions": Socializing Spatial Archaeology. *Archaeology Division Distinguished Lecture. American Anthropologist* 104(4):1172-1183.

2002b Encountering Maya Women. *In* Ancient Maya Women. T. Ardren, ed. Pp. 229-245. Walnut Creek: Altamira Press.

- Ashmore, Wendy, and Jeremy A. Sabloff
 2002 Spatial Orders in Maya Civic Plans. *Latin American Antiquity* 13:201-215.
- 2003 Interpreting Ancient Maya Civic Plans: Reply to Smith. *Latin American Antiquity* 14:229-236.
- Awe, Jaime J., ed.
 1998a The Western Belize Regional Cave Project: A Report of the 1997 Field Season. Department of Anthropology, Occasional Paper No.1. Durham: University of New Hampshire.
- 1998b The Western Belize Regional Cave Project: Objectives, Context, and Problem Orientation. *In* The Western Belize Regional Cave Project: A Report of the 1997 Field Season. J.J. Awe, ed. Pp. 1-21, Department of Anthropology, Occasional Paper No.1. Durham: University of New Hampshire.
- Awe, Jaime J., ed.
 1999 The Western Belize Regional Cave Project: A Report of the 1998 Field Season. Department of Anthropology, Occasional Paper No. 2. Durham: Department of Anthropology, University of New Hampshire.
- Awe, Jaime J., and Carolyn M. Audet, eds.
 2003 The Belize Valley Archaeological Reconnaissance Project: A Field Report of the 2002 Field Season. Belmopan: Belize Institute of Archaeology, National Institute of Culture and History.
- Awe, Jaime J., Cameron Griffith, and Sherry Gibbs
 2005 Cave Stelae and Megalithic Monuments in Western Belize. *In* In the Maw of the Earth Monster: Mesoamerican Ritual Cave Use. J.E. Brady and K.M. Prufer, eds. Pp. 223-248. Austin: University of Texas Press.
- Awe, Jaime J., and Cameron S. Griffith, eds.
 2002 The Belize Valley Archaeological Reconnaissance Project: A Report of the 2001 Field Season - Volume 1. Belmopan: Belize Department of Archaeology, Ministry of Tourism.
- Awe, Jaime J., Christophe G. B. Helmke, and Cameron S. Griffith
 1998 Archaeological Reconnaissance in the Roaring Creek Valley: Caves, Rockshelters, and Settlements. *In* The Western Belize Regional Cave Project: A Report of the 1997 Field Season. J.J. Awe, ed. Pp. 216-236, Occasional Paper No.1. Durham: Department of Anthropology, University of New Hampshire.
- Bachand, Bruce R.
 2006 Preclassic Excavations at Punta de Chimino, Petén, Guatemala: Investigating Social Emplacement on an Early Maya Landscape. Ph.D. dissertation. Department of Anthropology, University of Arizona, Tucson.

- Ball, Joseph W.
1977 The Archaeological Ceramics of Becan, Campeche, Mexico. New Orleans: Middle American Research Institute, Tulane University.
- Barrera Rivera, José Alvaro, Maria de Lourdes Gallardo Parrodi, and Aurora Montufar Lopez
2001 La Ofrenda 102 del Templo Mayor. *Arqueologia Mexicana* 8(48):70-77.
- Barrera Vasquez, Alfredo
1970 The Ceremony of Tsikul T'an Ti' Yuntsiloob at Balankanche. *In* Appendix to: Balankanche, Throne of the Tiger Priest. E.W.I. Andrews, ed. Pp. 72-78. Publication 32. New Orleans: Middle American Research Institute, Tulane University.
- Barrett, John C.
1999 Mythical Landscapes of the British Iron Age. *In* *Archaeologies of Landscape*. W. Ashmore and A.B. Knapp, eds. Pp. 253-265. Oxford: Blackwell.
- Bassie-Sweet, Karen
1991 From the Mouth of the Dark Cave: Commemorative Sculpture of the Late Classic Maya. Norman: University of Oklahoma Press.

1996 At the Edge of the World: Caves and Late Classic Maya World View. Norman: University of Oklahoma Press.

2002 The Jolja' Cave Project. Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc, Crystal River, FL.
- Baudez, Claude F.
1994 Maya Sculpture of Copan: The Iconography. Norman: University of Oklahoma Press.
- Beals, Ralph
1945 Ethnology of the Western Mixe. Volume KLII, University of California Publications in American Archaeology and Ethnology. Berkeley: University of California Press.
- Beaudry-Corbett, Marilyn, and Sharisse McCafferty
2002 Spindle Whorls: Household Specialization at Ceren. *In* *Ancient Maya Women*. T. Ardren, ed. Pp. 52-67. Walnut Creek: AltaMira.
- Bell, Catherine
1997 Ritual: Perspective and Dimensions. New York: Oxford University Press.
- Bell, Ellen E.
2002 Engendering a Dynasty: A Royal Woman in the Margarita Tomb, Copan. *In* *Ancient Maya Women*. T. Ardren, ed. Pp. 89-104. Walnut Creek, CA: AltaMira Press.

- Bender, Barbara
 1993 Introduction: Landscape--Meaning and Action. *In* Landscape: Politics and Perspectives. B. Bender, ed. Pp. 1-17. Oxford: Berg.
- 2001 Introduction. *In* Contested Landscapes: Movement, Exile and Place. B. Bender and M. Winer, eds. Pp. 1-18. Oxford: Berg.
- Bender, Barbara, and Margot Winer, eds.
 2001 Contested Landscapes: Movement, Exile and Place. Oxford: Berg.
- Benson, Elizabeth P.
 1985 Architecture as Metaphor. *In* Fifth Palenque Round Table, 1983. M.G. Robertson and V. Fields, eds. Pp. 183-188. San Francisco: Pre-Columbian Art Research Institute.
- Beyer, Hermann
 1934 Mexican Bone Rattles. *Middle American Research Series* 5(7):321-349.
- Bill, Cassandra R.
 1997 Patterns of Variation and Change in Dynastic Period Ceramics and Ceramic Production at Copán, Honduras. Ph.D. dissertation, Tulane University, New Orleans.
- Binford, Lewis R.
 1962 Archaeology as Anthropology. *American Antiquity* 28(2):217-225.
- 1965 Archaeological Systematics and the Study of Culture Process. *American Anitquity* 31:203-210.
- Binford, Sally R., and Lewis R. Binford, eds.
 1968 New Perspectives in Archeology. Chicago: Aldine Publishing Co.
- Blackmore, Chelsea, and Reiko Ishihara
 2003 Elite Propaganda and State Ideology: Manipulation of Sacred Maya Landscapes. Paper presented at the 102nd Annual Meeting for the American Anthropological Association. Chicago, IL.
- Blanton, Richard E., Gary M. Feinman, Stephen A. Kowalewski and Peter N. Peregrine
 1996 A Dual-Processual Theory for the Evolution of Mesoamerican Civilization. *Current Anthropology* 37(1):1-14.
- Blom, Frans
 1954 Ossuaries, Cremation and Secondary Burials among the Maya of Chiapas, Mexico. *Journal de la Societe des Americanistes* 43:123-135.
- Bolles, David
 1997 Combined Dictionary-Concordance of the Yucatecan Mayan Language. Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc. , Crystal River, FL. Accessed online at <http://www.famsi.org/reports/96072/index.html>, May 2007.

Bonor Villarejo, Juan Luis

1987a Exploraciones en las Grutas de Calcehtok y Oxkintok, Yucatan, Mexico. Mayab 3:24-32.

1987b Exploraciones en las Grutas de Calcehtok, Yucatán, Mexico. Mayab 3:34-41.

1989a El Complejo Cueva-pirámide en la Cultura Maya Antigua. Boletín de la Escuela de Ciencias Antropológicas de la Universidad de Yucatan 16(99):3-16.

1989b Las Cuevas Mayas: Simbolismo y Ritual. Madrid: Universidad Complutense de Madrid.

1995a Archaeological Investigations at the Caves Branch Area, Cayo District, Belize. San Ignacio, Belize: First International Symposium of Maya Archaeology.

1995b Excavación de Salvamento en "Caves Branch Rock Shelter," Cayo District, Belize. IV Encuentro Internacional Investigadores de la Cultura Maya 1:46-70.

2002 Caves Branch Caves: Archaeological Field Report. Crystal River, FL: Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc., Crystal River, FL.

Bonor Villarejo, Juan Luis, and Ismael Sanchez y Pinto

1991 Las Cavernas del Municipio de Oxkutzcab, Yucatan, Mexico: Nuevas Aportaciones. Mayab 7:36-52.

Boot, Erik

2002 The Life and Times of B'alah Chan K'awil of Mutal (Do Pilas), According to Dos Pilas Hieroglyphic Stairway 2. Mesoweb: <http://www.mesoweb.com/features/boot/DPLHS2.pdf>.

Bourdieu, Pierre

1977 Outline of a Theory of Practice. Cambridge: Cambridge University Press.

Brady, James E.

1988 The Sexual Connotation of Caves in Mesoamerican Ideology. Mexican 1(93):51-55.

1989 An Investigation of Maya Ritual Cave Use with Special Reference to Naj Tunich, Peten, Guatemala. Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.

1997a A History of Mesoamerican Cave Archaeology. Paper presented at the 62nd Annual Meeting of the Society for American Archaeology, Nashville.

1997b Settlement Configuration and Cosmology: The Role of Caves at Dos Pilas. American Anthropologist 99(3):602-618.

- 2001 Caves as Ancient Maya Pilgrimage Centers: Archaeological Evidence of a Multifaceted Role. *In Pilgrimage and the Ritual Landscape in Pre-Columbian America*. J. Carlson, ed. Washington, D.C.: Dumbarton Oaks.
- 2004 Constructed Landscapes - Exploring the Meaning and Significance of Recent Discoveries of Artificial Caves. *Ketzalcalli* 1:2-17.
- 2005 The Impact of Ritual on Ancient Maya Economy. *In Stone Houses and Earth Lords: Maya Religion in the Cave Context*. K.M. Prufer and J.E. Brady, eds. Pp. 115-134. Boulder: University Press of Colorado.
- 2006 Leaving No Stone Unturned: The Identification and Interpretation of Unmodified or Minimally Modified Stone Manuports in Caves. Paper presented at the 71st Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico.
- Brady, James E., and Wendy Ashmore
 1999 Mountains, Caves, Water: Ideational Landscapes of the Ancient Maya. *In Archaeologies of Landscape: Contemporary Perspectives*. W. Ashmore and A.B. Knapp, eds. Pp. 124-145. Malden, MA: Blackwell Publishers.
- Brady, James E., Allan Cobb, Sergio Garza, Cesar Espinosa, and Robert Burnett
 2005 An Analysis of Ancient Maya Stalactite Breakage at Balam Na Cave, Guatemala. *In Stone Houses and Earth Lords: Maya Religion in the Cave Context*. K.M. Prufer and J.E. Brady, eds. Pp. 213-225. Boulder: University Press of Colorado.
- Brady, James E., and Pierre R. Colas
 2005 Nikte Mo' Scattered Fire in the Cave of K'ab Chante': Epigraphic and Archaeological Evidence for Cave Desecration in Ancient Maya Warfare. *In Stone Houses and Earth Lords: Maya Religion in the Cave Context*. K.M. Prufer and J.E. Brady, eds. Pp. 149-166. Boulder: University Press of Colorado.
- Brady, James E., and Polly A. Peterson
 n.d. Re-envisioning Ancient Maya Ritual Assemblages. Manuscript in possession of the author.
- Brady, James E., and Keith M. Prufer
 1999 Caves and Crystalmancy: Evidence for the Use of Crystals in Ancient Maya Religion. *Journal of Anthropological Research* 55:129-144.
- 2005 Introduction: A History of Mesoamerican Cave Interpretation. *In In the Maw of the Earth Monster: Mesoamerican Ritual Cave Use*. J.E. Brady and K.M. Prufer, eds. Pp. 1-17. Austin: University of Texas Press.
- Brady, James E., and Irma Rodas
 1995 Maya Ritual Cave Deposits: Recent Insights from the Cueva de Los Quetzales. *Institute of Maya Studies Journal* 1(1):17-25.

- Brady, James E., Ann Scott, Allan Cobb, Irma Rhodas, John Fogarty, Monica Urquiza Sanchez
 1997a Glimpses of the Dark Side of the Petexbatun Project. *Ancient Mesoamerica* 8:353-364.
- 1997b Speleothem Breakage, Movement, Removal, and Caching: An Unreported Aspect of Ancient Maya Cave Modification. *Geoarchaeology* 12(6):725-750.
- Brady, James E., Laura Stiver, and Velinda Appolinario
 1994 Petexbatún Regional Cave Survey Artifacts. *In Proyecto Arqueológico Regional Petexbatún, Informe Preliminar #6, Volumen 2*. A.A. Demarest, J.A. Valdés, and H. Escobedo, eds. Pp. 571-641. Nashville: Department of Anthropology, Vanderbilt University.
- Brady, James E., and Andrea Stone
 1986 Naj Tunich: Entrance to the Maya Underworld. *Archaeology* 39(6):18-25.
- Brady, James E., and George Veni
 1992 Man-made and Pseudo-karst Caves: The Implications of Subsurface Features within Maya Centers. *Geoarchaeology* 7(2):149-167.
- Bronk Ramsey, C.
 2001 Development of the Radiocarbon Calibration Program OxCal. *Radiocarbon* 43(2A):355-363.
- Bronk Ramsey, C.
 1995 Radiocarbon Calibration and Analysis of Stratigraphy: The OxCal Program. *Radiocarbon* 37(2):425-430.
- Brown, Linda A.
 2001 Feasting on the Periphery: The Production of Ritual Feasting and Village Festivals at the Ceren Site, El Salvador. *In Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*. M. Deitler and B. Hayden, eds. Pp. 368-390. Washington, D.C.: Smithsonian Institution Press.
- 2002 The Structure of Ritual Practice: An Ethnoarchaeological Exploration of Activity Areas at Rural Community Shrines in the Maya Highlands (Guatemala). Ph.D. dissertation, Department of Anthropology, University of Colorado, Boulder.
- 2004 Dangerous Places and Wild Spaces: Creating Meaning with Materials and Space at Contemporary Maya Shrines on El Duende Mountain. *Journal of Archaeological Method and Theory* 11(1):31-58.
- Bruhns, Karen Olsen
 1988 Yesterday the Queen Wore...An Analysis of Women Costume in the Public Art of the Late Classic Maya. *In The Role of Gender in Precolumbian Art and Architecture*. V.E. Miller, ed. Pp. 105-134. Lanham, MD: University Press of America.

- Brumfiel, Elizabeth M.
 1991 Weaving and Cooking: Women's Production in Aztec Mexico. *In* *Engendering Archaeology: Women and Prehistory*. J.M. Gero and M.W. Conkey, eds. Pp. 224-251. Oxford: Basil Blackwell.
- Buechler, Jeff, et al.
 2005 Recorrido y Hallazgos en Transecto Norte. *In* *Informe del Proyecto Arqueológico Aguateca, La Temporada de Campo 2005*. E.M. Ponciano, D. Triadan, and T. Inomata, eds. Pp. 13.1-13.39.
- Bullard, William R., Jr., and Mary R. Bullard
 1965 Late Classic Finds at Baking Pot, British Honduras. Toronto: Royal Ontario Museum.
- Bunch, Roland, and Roger Bunch
 1977 The Highland Maya: Patterns of Life and Clothing in Indian Guatemala. Visalia, CA: Josten's Publications.
- Burkitt, Robert
 1920 The Hills and the Corn. Anthropological Publication, University of Pennsylvania, University Museum, Philadelphia 8(2):183-227.
- Carlson, John B.
 1981 A Geomantic Model for the Interpretation of Mesoamerican Sites: An Essay in Cross-cultural Comparison. *In* *Mesoamerican Sites and World-views*. E.P. Benson, ed. Pp. 143-215. Washington, D.C.: Dumbarton Oaks.
- Carot, Patricia
 1989 Arqueología de las Cuevas del Norte de Alta Verapaz. L.M. Santamaria, transl. Mexico City: Centre d'etudes Mexicaines et Centramericaines.
- Christensen, Bodil
 1953 Los Otomoies del Estado de Puebla. *Revista Mexicana de Estudios Antropológicos* 13:259-268.
- Christenson, Allen J.
 2001 Art and Society in a Highland Maya Community: The Altarpiece of Santiago Atitlan. Austin: University of Texas Press.
- Ciaramella, Mary
 1999 The Weavers in the Codices. Research Reports on Ancient Maya Writing No. 44. Washington, D.C.: Center for Maya Research.
- Clark, John E., and Stephen D. Houston
 1998 Craft Specialization, Gender, and Personhood among the Post-conquest Maya of Yucatan, Mexico. *In* *Craft and Social Identity*. Pp. 31-46: Washington, D.C.: American Anthropological Association.

- Clendinnen, Inga
 1982 Yucatec Maya Women and the Spanish Conquest: Role and Ritual in Historical Reconstruction. *Journal of Social History* 15:427-442.
- Cline, Howard F.
 1944 Lore and Deities of the Lacandon Indians. *Journal of American Folklore* 57:107-115.
- Coe, Michael D.
 1973 *The Maya Scribe and his World*. New York: Grolier Club.
 1978 *Lords of the Underworld: Masterpieces of Classic Maya Ceramics*. Princeton: Princeton University Press.
- Coe, Sophie D.
 1994 *America's First Cuisines*. Austin: University of Texas Press.
- Coe, William R.
 1959 *Piedras Negras Archaeology: Artifacts, Caches, and Burials*. University Museum Monographs No.18. Philadelphia: The University Museum, University of Pennsylvania.
 1967 *Tikal: A Handbook of the Ancient Maya Ruins*. Philadelphia: The University Museum of the University of Pennsylvania.
- Coggins, Clemency
 1967 *Palaces and the Planning of Ceremonial Centers in the Southern Maya Lowlands*. Unpublished manuscript, Tozzer Library, Peabody Museum, Harvard University.
 1980 *The Shape of Time: Some Political Implications of a Four-Part Figure*. *American Antiquity* 45:727-739.
- Coggins, Clemency Chase , and Orrin C. Shane, III
 1984 *Cenote of Sacrifice: Maya Treasures from the Sacred Well at Chichen Itza*. Austin: University of Texas Press.
- Comaroff, John, and Jean Comaroff
 1992 *Ethnography and the Historical Imagination*. Boulder: Westview Press.
- Conkey, Margaret W., and Joan M. Gero
 1991 *Tensions, Pluralities, and Engendering Archaeology: An Introduction to Women and Prehistory*. In *Engendering Archaeology: Women and Prehistory*. J.M. Gero and M.W. Conkey, eds. Pp. 3-30. Oxford: Basil Blackwell.

- Cook, Garrett
 1986 Quichean Folk Theology and Southern Maya Supernaturalism. *In* Symbol and Meaning Beyond the Closed Community: Essays in Mesoamerican Ideas. G.H. Gossen, ed. Pp. 139-153. Albany: Institute of Mesoamerican Studies, State University of New York.
- Cordry, Donald B., and Dorothy Cordry
 1968 Mexican Indian Costumes. Austin: University of Texas Press.
- Cottier, John W.
 1967 Preliminary Archaeological Investigations at X'kukican, Yucatan, Mexico. Manuscript on file at the Department of Sociology and Anthropology, University of Alabama.
- Culbert, T. Patrick
 1993 The Ceramics of Tikal: Vessels from the Burials, Caches and Problematical Deposits. Philadelphia: The University Museum, University of Pennsylvania.
- Dacus, Chelsea
 2005 Weaving the Past: An Examination of Bones Buried with an Elite Maya Woman. M.A. thesis, Dallas: Southern Methodist University.
- Dahlin, Bruce H., and William J. Litzinger
 1986 Old Bottle, New Wine: The Function of Chultuns in the Maya Lowlands. *American Antiquity* 51(4):721-736.
- Dasher, George R.
 1997 On Station: A Comprehensive Handbook for Surveying and Mapping Caves. Huntsville, AL: National Speleological Society.
- de Jongh Osborne, Lilly
 1965 Indian Crafts of Guatemala and El Salvador. Norman: University of Oklahoma Press.
- Deal, Michael
 1988 Recognition of Ritual Pottery in Residential Units: An Ethnohistorical Model of the Maya Family Altar Tradition. *In* Ethnoarchaeology Among the Highland Maya of Chiapas. T.A. Lee, Jr. and B. Hayden, eds. Pp. 61-89, Papers of the New World Archaeological Foundation, No.56. Provo: Brigham Young University.
- Demarest, Arthur A.
 1992a Ideology in ancient Maya cultural evolution: the dynamics of galactic polities. *In* Ideology and Pre-Columbian Civilizations. A.A. Demarest and G.W. Conrad, eds. Pp. 135-157. Santa Fe: School of American Research Press.
 1992b Ideology in Ancient Maya Cultural Evolution: The Dynamics of Galactic Polities. *In* Ideology and Pre-Columbian Civilizations. A.A. Demarest and G.W. Conrad, eds. Pp. 135-158. Santa Fe: School of American Research.

- 1997 The Vanderbilt Petexbatun Regional Archaeological Project 1989-1994. *Ancient Mesoamerica* 8:209-227.
- Dietler, Michael
 1996 Feasts and Commensal Politics in the Political Economy: Food, Power, and Status in Prehistoric Europe. *In* *Food and the Status Quest: An Interdisciplinary Perspective*. P. Wiessner and W. Schiefenhovel, eds. Pp. 86-126. Providence, RI: Berghahn Books.
- Dietler, Michael, and Brian Hayden
 2001 Digesting the Feast: Good to Eat, Good to Drink, Good to Think. *In* *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*. M. Dietler and B. Hayden, eds. Pp. 1-20. Washington, D.C.: Smithsonian Institution Press.
- Digby, Adrian
 1958 A New Maya City Discovered in British Honduras: First Excavations at Las Cuevas and an Underground Necropolis Revealed. *Illustrated London News* 232:274-275.
- Dillon, Brian D., Lynda Bruner, and Kevin O. Pope
 1985 Ancient Maya Autoamputation? A Possible Case from Salinas de los Nueve Cerros, Guatemala. *Journal of New World Archaeology* 5(4):24-38.
- Durán, Diego
 1967 Historia de las Indias de Nueva España e Islas de la Tierra Firme. Volume 2. Mexico City: Editorial Porrúa.
- Durkheim, Emile
 1915 The Elementary Forms of the Religious Life. J.W. Swain, transl. New York: The Free Press.
- Eade, John , and Michael J. Sallnow, eds.
 1991 Contesting the Sacred: The Anthropology of Christian Pilgrimage. London: Routledge.
- Eagleton, Terry
 1991 Ideology: An Introduction. London: Verso.
- Eberl, Markus
 2000a Descubrimiento de Nuevas Estelas en Aguateca, Petexbatun. *In* XIII Simposio de Investigaciones Arqueológicas en Guatemala, 1999. J.P. Laporte, H.L. Escobedo, A.C. de Suasnavar, and B. Arroyo, eds. Pp. 531-543. Guatemala City: Museo Nacional de Arqueología y Etnología.
- 2000b Rescate y Excavaciones en el Área de las Nuevas Estelas: Operación 24. *In* Informe del Proyecto Arqueológico Aguateca: la temporada de campo 1999 E. Ponciano, T. Inomata, and D. Triadan, eds. Pp. 68-80. Report submitted to the Instituto de Antropología e Historia de Guatemala.

- 2003 Excavaciones en el Area de la Barranca Escondida de Aguateca. *In* XVI Simposio de Investigaciones Arqueologicas en Guatemala, 2002. J.P. Laporte, B. Arroyo, H.L. Escobedo, and H.E. Mejia, eds. Pp. 185-195. Guatemala City: Museo Nacional de Arqueologia y Etnologia.
- Ekholm, Gordon F.
1944 Excavations at Tampico and Pánuco in the Huasteca, Mexico. *American Museum of Natural History, Anthropological Papers* 38:321-509.
- Ekholm, Susanna M.
1979 The Lagartero Figurines. *In* *Maya Archaeology and Ethnohistory*. N. Hammond and G.R. Willey, eds. Pp. 172-186. Austin: University of Texas Press.

1985 The Lagartero Ceramic "Pendants". *In* *The Fourth Palenque Round Table, 1980, Vol. VII*. M.G. Robertson and E.P. Benson, eds. Pp. 211-219. San Francisco: Pre-Columbian Art Research Institute.
- Eliade, Mircea
1959 *The Sacred and the Profane: The Nature of Religion*. W.R. Trask, transl. New York: Harcourt Brace.
- Epperson, Terrence W.
1990 Race and the Disciplines of the Plantation. *Historical Archeology* 24(4):29-36.
- Fahsen, Frederico
2003 Rescuing the Origins of Dos Pilas Dynasty: A Salvage of Hieroglyphic Stairway #2, Structure L5-49. Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc., Crystal River, FL.
- Ferguson, Josalyn
1998 A Marker in Time: The North Ball Court at the Maya Civic Centre of Baking Pot. *In* *The Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1997 Field Season*. J.M. Conlon and J.J. Awe, eds. Pp. 17-34. London: Institute of Archaeology, University College London.

1999 Report on the 1998 Excavations at Actun Uayazba Kab, Roaring Creek Valley, Belize. *In* *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*. J.J. Awe, ed. Pp. 112-136. Occasional Paper No. 2. Durham: Department of Anthropology, University of New Hampshire.
- Ferguson, Josalyn M., and Sherry Gibbs
1999 Report on the 1998 Excavations at Actun Uayazba Kab, Roaring Creek Valley, Belize *In* *The Western Belize Regional Cave Project: A Report of the 1998 Field Season*. J.J. Awe, ed. Pp. 112-145, Occasional Paper No. 2. Durham: Department of Anthropology, University of New Hampshire.

- Fernandez, Aurelio, et al.
2000 Los Volcanes y Los Hombres. *In* Los Volcanes y Los Hombres. Pp. 10-16, 54-59. Cuadernos de Extension, Vol. 3. Puebla: Universidad Autonoma de Puebla.
- Fischer, Edward F.
2001 Cultural Logics and Global Economics: Maya Identity in Thought and Practice. Austin: University of Texas Press.
- Foias, Antonia E.
1996 Changing Ceramic Production and Exchange Systems and the Classic Maya Collapse in the Petexbatun Region. Ph.D. dissertation, Department of Anthropology, Vanderbilt University.
- Foias, Antonia E., and Ronald L. Bishop
1997 Changing Ceramic Production and Exchange in the Petexbatun Region, Guatemala: Reconsidering the Classic Maya Collapse. *Ancient Mesoamerica* 8:275-291.
- Foias, Antonia E., Ronald L. Bishop, and Melissa Hagstrum
1991 Analisis de la Cerámica de la Region de Petexbatun. *In* Proyecto Arqueologico Regional Petexbatun: Informe Preliminar 3, Tercera Temporada. A. Demarest, T. Inomata, H. Escobedo, and J. Palka, eds. Pp. 749-756. Report submitted to the Instituto de Antropología e Historia de Guatemala.
- Freidel, David A.
1992 The Trees of Life: Ahau as Idea and Artifact in Classic Lowland Maya Civilization. *In* Ideology and Pre-Columbian Civilizations. A.A. Demarest and G.W. Conrad, eds. Pp. 115-133. Santa Fe: School of American Research Press.
- Freidel, David A., and Linda Schele
1988 Kingship in the Late Preclassic Maya Lowlands: The Instruments and Places of Ritual Power. *American Anthropologist* 90(3):547-567.
- Freidel, David A., Linda Schele, and Joy Parker
1993 Maya Cosmos: Two Thousand Years along the Shaman's Path. New York: Morrow.
- Fritz, John M.
1986 Vijayanagara: Authority and Meaning of a South Indian Imperial Capital. *American Anthropologist* 88(44-55).
- Fuentes y Guzmán, Francisco Antonio de
1932 Recordación Florida: Discurso Historical y Demostración Natural, Material, Militar y Política del Reyno de Goathemala. Volume 6-8. Guatemala: Biblioteca Guatemala.
- Gann, Thomas W. F.
1918 The Maya Indians of Southern Yucatan and Northern British Honduras. Washington, D.C.: Smithsonian Institution.

- 1925 *Mystery Cities: Exploration and Adventure in Lubaantun*. London: Duckworth.
- 1929 *Discoveries and Adventures in Central America*. New York: Charles Scribner's Sons.
- Garber, James F.
1989 *Archaeology at Cerros, Belize, Central America, Volume 2: The Artifacts*. Dallas: Southern Methodist University Press.
- García-Bárcena, Joaquín, and Diana Santamaría
1982 *La Cueva de Santa Marta Ocozocoautla, Chiapas: Estratigrafía, Cronología y Cerámica*. Mexico: Instituto Nacional de Antropología e Historia.
- García-Zambrano, Angel J.
1994 *Early Colonial Evidence of Pre-Columbian Rituals of Foundation*. In *Seventh Palenque Round Table, 1989*. M.G. Robertson and V. Fields, eds. Pp. 217-227. San Francisco: Pre-Columbian Art Research Institute.
- Garza, Sergio
2003a *An Ethnoarchaeological Approach to Maya Caves*. Paper presented at the 68th Annual Meeting of the Society for American Archaeology, Milwaukee, WI.
- 2003b *Indigenous vs. Western Perspectives on Landscape*. Paper presented at the Pacific Coast Council on Latin American Studies (PCCLAS), Whittier College, Whittier, CA.
- Garza, Sergio, James E. Brady, and Christian Christensen
2001 *Balam Na Cave 4: Implications for Understanding Preclassic Cave Mortuary Practices*. *California Anthropologist* 28(1):15-21.
- Geertz, Clifford
1980 *Negara: The Theatre State in Nineteenth-century Bali*. Princeton: Princeton University Press.
- Gero, Joan M., and Margaret W. Conkey, eds.
1991 *Engendering Archaeology: Women and Prehistory*. Oxford: Basil Blackwell.
- Gifford, James C.
1960 *The Type-Variety Method of Ceramic Classification as an Indicator of Cultural Phenomena*. *American Antiquity* 25(3):341-347.
- 1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Volume 18. Cambridge, MA: Harvard University.
- González Licón, Ernesto
1986 *Los Mayas de la Gruta de Loltún, Yucatán, a Través de sus Materiales Arqueológicos*. México: Instituto Nacional de Antropología e Historia.

- Gordon, George Byron
1898 Caverns of Copan, Honduras. Pp. 137-148, Peabody Museum of Archaeology and Ethnology Memoir 1. Cambridge: Peabody Museum of Archaeology and Ethnology.
- Gossen, Gary H.
1974 Chamulas in the World of the Sun. Cambridge: Harvard University Press.
- Graham, Ian
1967 Archaeological Explorations in El Peten, Guatemala. Publication 33. New Orleans: Middle American Research Institute, Tulane University.
- Griffith, Cameron S.
1998 Excavations and Salvage Operations in Actun Tunichil Muknal and Actun Uayazba Kab, Roaring Creek Valley, Belize. *In* The Western Belize Regional Cave Project: A Report of the 1997 Field Season. J.J. Awe, ed. Pp. 37-69. Occasional Paper No. 1. Durham: Department of Anthropology, University of New Hampshire.
- Griffith, Cameron S., Reiko Ishihara, and Jaime J. Awe, eds.
2000 The Western Belize Regional Cave Project: A Report of the 1999 Field Season. Occasional Paper No.3. Durham: Department of Anthropology, University of New Hampshire.
- Griffith, Cameron S., and Sarah M. P. Jack
2005 Monumental Modified Speleothem Sculpture: New Patterns in a Class of Ancient Maya Cave Art. *In* Making Marks: Graduate Studies in Rock Art Research at the New Millennium. J.K.K. Huang and E.V. Culley, eds. Pp. 1-16: American Rock Art Research Association.
- Groark, Kevin P.
1997 To Warm the Blood, To Warm the Flesh: The Role of the Steambath in Highland Maya (Tzeltal-Tzotzil) Ethnomedicine. *Journal of Latin American Lore* 20(1):3-95.
- Gruning, E.L.
1930 Report on the British Museum Expedition to British Honduras, 1930. *Journal of the Royal Anthropological Institute* 60:477-483.
- Guenter, Stanley Paul
2003 The Inscriptions of Dos Pilas Associated with B'ajlaj Chan K'awiil. Mesoweb: www.mesoweb.com/features/guenter/DosPilas.pdf.
- Guerra, Jenny
2006 Representación Arquitectónica Ritual Maya en Cuevas. Licenciatura thesis, Department of Archaeology, Universidad del Valle, Guatemala City.

- Guerra, Jenny and Reiko Ishihara
 2006a Reconocimiento Etnoarqueológico de las Cuevas, Chocola, Suchitepequez: Primera Temporada, 2005. Report submitted to the Instituto de Antropología e Historia de Guatemala.
- 2006b Entering the Sacred Windows: An Ethnoarchaeological Study on the Beliefs and Rituals related to Caves at Chocóla, Suchitepequez, Guatemala. Paper presented at the 71st Annual Meeting of the Society for American Archaeology, San Juan, Puerto Rico.
- 2006c Reconocimiento Etnoarqueológico de Cuevas, Chocola, Suchitepequez: Primera Temporada, 2005. Paper presented at the XX Simposio de Investigaciones Arqueológicas en Guatemala, Guatemala City.
- Guiteras-Holmes, Calixta
 1961 Perils of the Soul: The World View of a Tzotzil Indian. New York: Free Press.
- Haeserijn, Esteban
 1979 Diccionario K'ekchi'-Español. Guatemala City: Editorial Piedra Santa.
- Halperin, Christina
 2000 Archaeological Investigations on Ledges 5 and 6 of Actun Yaxteel Ahau, Roaring Creek Valley, Cayo District, Belize *In* The Western Belize Regional Cave Project: A Report of the 1999 Field Season. C.S. Griffith, R. Ishihara, and J.J. Awe, eds. Pp. 281-286, Occasional Paper No. 3. Durham: Department of Anthropology, University of New Hampshire.
- 2002 Caves, Ritual, and Power: Investigations at Actun Nak Beh, Cayo District, Belize. M.A. thesis, Department of Anthropology, Florida State University, Tallahassee.
- Hammond, Norman
 1972 Classic Maya Music Part II: Rattles, Shakers, Rasps, Wind and String Instruments. *Archaeology* 25(3):222-228.
- 1982 Ancient Maya Civilization. New Brunswick, NJ: Rutgers University Press.
- Hanks, William F.
 1990 Referential Practice: Language and Lived Space Among the Maya. Chicago: University of Chicago Press.
- Hayden, Brian
 1987 Past to Present Uses of Stone Tools in the Maya Highlands. *In* *Lithic Studies Among the Contemporary Highland Maya*. B. Hayden, ed. Pp. 160-234. Tucson: University of Arizona Press.

- Helmke, Christophe G. B., and Reiko Ishihara
 2002 Archaeological Reconnaissance of Cueva Migdalia, Barton Creek Valley, Cayo District, Belize. *In* The Belize Valley Archaeological Reconnaissance Project: A Report of the 2001 Field Season - Volume 1. J.J. Awe and C.S. Griffith, eds. Pp. 111-151. Belmopan: Belize Department of Archaeology, Ministry of Tourism.
- Hendon, Julia A.
 1992 Hilado y Tejido en la Epoca Prehispanica: Tecnología y Relaciones de la Producción Textil. *In* La Indumentaria y el Tejido Mayas a través del Tiempo. L.A.d. Barrios and D. García, eds. Pp. 7-16. Monograph 8. Guatemala City: Museo Ixchel del Traje Indígena.
 1997 Women's Work, Women's Space, and Women's Status among the Classic Period Maya Elite of the Copan Valley, Honduras. *In* Women in Prehistory: North American and Mesoamerica. C. Claassen and R.A. Joyce, eds. Pp. 33-46. Philadelphia: Pennsylvania Press.
 2004 Postclassic and Colonial Period Sources on Maya Society and History. *In* Mesoamerican Archaeology. J.A. Hendon and R.A. Joyce, eds. Pp. 296-322. Malden, MA: Blackwell.
- Hermitte, M. Esther
 1964 Supernatural Power and Social Control in a Modern Maya Village. Ph.D. dissertation, University of Chicago.
- Heyden, Doris
 1973 ¿Un Chicomoztoc en Teotihuacan? La Cueva Bajo la Pirámide del Sol. *Boletín del Instituto Nacional de Antropología e Historia* 2(6):3-18.
 1975 An Interpretation of the Cave Underneath the Pyramid of the Sun in Teotihuacan, Mexico. *American Antiquity* 40:131-147.
 1981 Caves, Gods, and Myths: World-views and Planning in Teotihuacan. *In* Mesoamerican Sites and World-views. E.P. Benson, ed. Pp. 1-39. Washington, D.C.: Dumbarton Oaks.
 1991 La Matriz de la Tierra. *In* Arqueoastronomía y Etnoastronomía en Mesoamérica. J. Broda, S. Iwaniszewski, and L. Maupone, eds. Pp. 501-515. Mexico City: Universidad Nacional Autónoma de México.
 2000 From Teotihuacan to Tenochtitlan: City Planning, Caves, and Streams of Red and Blue Waters. *In* Mesoamerica's Heritage: From Teotihuacan to the Aztecs. D. Carrasco, L. Jones, and S. Sessions, eds. Pp. 165-184. Boulder: University Press of Colorado.

Historia Tolteca-Chichimeca

1947 Historia Tolteca-Chichimeca, Anales de Quauhtinchan. Annotated by Heinrich Berlin and Silvia Rendon; prologue by Paul Kirchhoff. Mexico: Antigua Libreria Robredo, de Jose Porrua e Hijos.

Holland, William R.

1963 Medicina Maya en los Altos de Chiapas. Mexico City: Instituto Nacional Indigenista.

Houk, Brett

1996 The Archaeology of Site Planning: An Example from the Maya Site of Dos Hombres, Belize. Ph.D. dissertation, University of Texas, Austin.

Houston, Stephen D.

1987 The Inscriptions and Monumental Art of Dos Pilas, Guatemala: A Study of Classic Maya History and Politics. Ph.D. dissertation, Yale University.

1992 Classic Maya History and Politics at Dos Pilas, Guatemala. *In* Epigraphy. V.R. Bricker, ed. Pp. 110-127, Vol. Supplement to the Handbook of Middle American Indians, Vol. 5. Austin: University of Texas Press.

1993 Hieroglyphs and History at Dos Pilas: Dynastic Politics of the Classic Maya. Austin: University of Texas Press.

Houston, Stephen D. and Peter Mathews

1985 The Dynastic Sequence of Dos Pilas, Guatemala. Volume Monograph 1. San Francisco: Pre-Columbian Art Research Institute.

Houston, Stephen D. and David Stuart

1989 The Way Glyph: Evidence for "Co-essences" Among the Classic Maya. Washington, D.C.: Center for Maya Research.

1996 Of Gods, Glyphs, and Kings: Divinity and Rulership among the Classic Maya. *Antiquity* 70:289-312.

2001 Peopling the Classic Maya Court. *In* Royal Courts of the Ancient Maya, Volume 1, Theory, Comparison, and Synthesis. T. Inomata and S.D. Houston, eds. Pp. 54-83. Boulder: Westview.

Houston, Stephen D., David Stuart, and Karl Taube

1989 Folk Classification of Classic Maya Pottery. *American Anthropologist* 91:720-726.

2006 The Memory of Bones: Body, Being, and Experience among the Classic Maya. Austin: University of Texas Press.

- Hull, Kerry
 2005 An Abbreviated Dictionary of Ch'orti' Maya. Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc. Accessed online at <http://www.famsi.org/reports/03031/section09.htm>, May 2007.
- Hunt, Eva
 1977 The Transformation of the Hummingbird: the Cultural Roots of a Zinacantan Mythical Poem. Ithaca: Cornell University Press.
- Ingold, Tim
 1993 The Temporality of the Landscape. *World Archaeology* 25(2):152-174.
 2000 The Perception of the Environment: Eessays on Livelihood, Dwelling and Skill. London: Routledge.
- Inomata, Takeshi
 1995 Archaeological Investigations at the Fortified Center of Aguateca, El Peten, Guatemala: Implications for the Study of the Classic Maya Collapse. Ph.D. dissertation, Department of Anthropology, Vanderbilt University, Nashville.
 1997 The Last Day of a Fortified Classic Maya Center: Archaeological Investigations at Aguateca, Guatemala. *Ancient Mesoamerica* 8:337-351.
 2001a The Classic Maya Palace as a Political Theater. *In* *Reconstruyendo la Ciudad Maya: El Urbanismo en las Sociedades Antiguas*. A. Ciudad Ruiz, M.J. Iglesias Ponce de Leon, and M.C. Martinez Martinez, eds. Pp. 341-361. Madrid: Sociedad Española de Estudios Mayas.
 2001b The Power and Ideology of Artistic Creation. *Current Anthropology* 42(3):321-349.
 2006a Plazas, Performers, and Spectators. *Current Anthropology* 47(5):805-842.
 2006b Politics and Theatricality in Mayan Society. *In* *Archaeology of Performance: Theaters of Power, Community, and Politics*. T. Inomata and L.S. Coben, eds. Pp. 187-221. Lanham, MD: AltaMira Press.
- Inomata, Takeshi , Daniela Triadan, Erick Ponciano, Richard E. Terry, Harriet F. Beaubien, Estela Pinto, Shannon Coyston
 1998 Residencias de la Familia Real y de la Elite en Aguateca, Guatemala. *Mayab* 11:23-39.
- Inomata, Takeshi, Erick Ponciano, Oswaldo Chinchilla, Otto Román, Veronique Breuil-Martinez, Oscar Santos
 2004 An Unfinished Temple at the Classic Maya Centre of Aguateca, Guatemala. *Antiquity*:798-811.

- 2001 In the Palace of the Fallen King: The Excavation of the Royal Residential Complex at the Classic Maya Center of Aguateca, Guatemala. *Journal of Field Archaeology* 28(287-306).
- Inomata, Takeshi, and Laura Stiver R.
 1998 Floor Assemblages from Burned Structures at Aguateca, Guatemala: A Study of Classic Maya Households. *Journal of Field Archaeology* 25:431-452.
- Ishihara, Reiko
 2000 Ceramics from the Darkness: An Investigation of the Cave Ceramics from Actun Chechem Ha, Belize. B.A. thesis, University of Tsukuba.
- 2003a Are There Any Holes Around Here?: A Preliminary Report on the Caracol Regional Cave Survey. *In* The Belize Valley Archaeological Reconnaissance: A Report of the 2002 Field Season. J.J. Awe and C. Audet, eds. Pp. 64-82. Belmopan: Belize Department of Archaeology.
- 2003b Are There Any Holes Around Here?: A Preliminary Report on the Caracol Regional Cave Survey. 68th Annual Meeting of the Society for American Archaeology, Milwaukee, WI.
- 2005 Kodai-Maya ni okeru Doukutsu-riyou to Sono Seiji-teki Igi (Ancient Maya Cave Use and Its Political Significance) (paper written in Japanese) *In* Maya to Inka: Ouken no Seiritsu to Tenkai (The Maya and the Inca: Formation and Development of Kingship). T. Sadasue, ed. Pp. 169-190. Tokyo: Douseisha.
- 2006a Crossing Sacred Boundaries: Social Implications of Ritual Activities in the Chasms and Caves of the Ancient Maya Political Center of Aguateca, Guatemala. *In* Paper presented at the 26th Annual James C. Young Colloquium, February 11, 2006, Riverside, CA.
- 2006b Unraveling Gender Relations in the Ritual Uses of the Chasms at Aguateca, Guatemala. Paper presented at the UC Mexus Seminar Series, October 23, 2006, Riverside, CA.
- Ishihara, Reiko, and Cameron S. Griffith
 2004 Construction of Sacred Spaces in Stela Cave, Cayo District, Belize. Paper presented at the 69th Annual Meeting of the Society for American Archaeology, Montreal, Canada.
- Ishihara, Reiko, Cameron S. Griffith, and Jaime J. Awe, eds.
 2001 Belize Valley Archaeological Reconnaissance Project: A Report of the 2000 Field Season. Occasional Paper No.4. Durham: Department of Anthropology, University of New Hampshire.

- Ishihara, Reiko, Jenny Guerra, Beverly Shade, Nicholas Johnson, Douglas Weinberg, Ana Cristina Morales, María de los Angeles, Michael Mirro
 2004 Levantamiento de Mapa de la Grieta. *In* Informe del Proyecto Arqueológico Aguateca Segunda Fase: La Temporada de Campo de 2004. E. Ponciano, D. Triadan, and T. Inomata, eds. Pp. 6.1-6.36. Report submitted to the Instituto de Antropología e Historia de Guatemala.
- Jennings, Joseph N.
 1985 Cave and Karst Terminology. *In* Australian Karst Index 1985. P.G. Matthews, ed. Pp. Section 14, 1-13. Broadway, New South Wales, Australia: Australian Speleological Federation. Accessed at <http://wasg.iinet.net.au/terminol.html> on May 3, 2007.
- Jones, Christopher
 1977 Inauguration Dates of Three Late Classic Rulers of Tikal, Guatemala. *American Antiquity* 42(1):28-60.
- Josserand, J. Kathryn, and Nicholas A. Hopkins
 1996 Appendix I. The Lexicon of Ritual Activity in Tila Chol, of Chol Ritual Language, with Terrence Lee Folmar, Heidi Altman, Ausencio Cruz Guzmán, and Bernardo Pérez Martínez. Report submitted to the Foundation for the Advancement of Mesoamerican Studies, Inc.
- Joyce, Arthur
 2000 The Founding of Monte Alban: Sacred Propositions and Social Practices. *In* Agency and Archaeology. M.-A. Dobres and J. Robb, eds. Pp. 71-91. London: Routledge.
- Joyce, Arthur A., and Marcus Winter
 1996 Ideology, Power, and Urban Society in Pre-Hispanic Oaxaca. *Current Anthropology* 37(1):33-86.
- Joyce, Rosemary A.
 1992 Images of Gender and Labor Organization in Classic Maya Society. *In* Exploring Gender through Archaeology: Selected Papers from the 1991 Boone Conference. C. Claassen, ed. Pp. 63-70. Madison: Prehistory Press.
 1993 Women's Work: Images of Production and Reproduction in Pre-Hispanic Southern Central America. *Current Anthropology* 34(3):255-274.
 1996 The Construction of Gender in Classic Maya Monuments. *In* Gender in Archaeology. R.P. Wright, ed. Pp. 167-195. Philadelphia: University of Pennsylvania Press.
- Joyce, Thomas A.
 1929 Report on the British Museum Expedition to British Honduras, 1929. *Journal of the Royal Anthropological Institute* 59:439-459.

- 1933 The Pottery Whistle-figurines of Lubaantun. *Journal of the Royal Anthropological Institute* LXIII:xv-xxv.
- Joyce, Thomas A., Thomas Gann, E. L. Gruning, and R. C. E. Long
1928 Report on the British Museum Expedition to British Honduras, 1928. *Journal of the Royal Anthropological Institute* 58:323-349.
- Kerr, Justin, ed.
1992 The Maya Vase Book, Vol.3: A Corpus of Rollout Photographs of Maya Vases. New York: Kerr Associates.
1994 The Maya Vase Book, Vol.4: A Corpus of Rollout Photographs of Maya Vases. New York: Kerr Associates.
2004 A Precolumbian Portfolio. Accessible online at www.famsi.org.
2007 A Precolumbian Portfolio. Accessible online at www.famsi.org.
- Kidder, Alfred V.
1947 The Artifacts of Uaxactun, Guatemala. Publication 576. Washington, D.C.: Carnegie Institution of Washington.
- Kidder, Alfred V., Jesse D. Jennings, and Edwin M. Shook
1946 Excavations at Kaminaljuyu, Guatemala. Publication 561. Washington, D.C.: Carnegie Institution of Washington.
- Knapp, Bernard A., and Wendy Ashmore
1999 Archaeological Landscapes: Constructed, Conceptualized, Ideational. *In* Archaeologies of Landscape: Contemporary Perspectives. B.A. Knapp and W. Ashmore, eds. Pp. 1-30. Oxford, UK: Blackwell.
- La Farge, Oliver
1947 Santa Eulalia: The Religion of a Cuchumatan Indian Town. Chicago: University of Chicago Press.
- Laporte, Juan Pedro
1995a ¿Despoblamiento o Problema Analítico?: El Clásico Temprano en el Sureste de Petén. *In* VIII Simposio de Investigaciones Arqueológicas en Guatemala, 1994, Vol.2. J.P. Laporte and H.L. Escobedo, eds. Pp. 729-761. Guatemala City: Museo Nacional de Arqueología y Etnología.
1995b Una Actualización a la Secuencia Cerámica del Area de Dolores, Petén. *Atlas Arqueológico de Guatemala* 3:35-64.
- Laporte, Juan Pedro, and Vilma Fialko
1987 La Cerámica del Clásico Temprano desde Mundo Perdido, Tikal: Una Reevaluación *In* Maya Ceramics: Papers from the 1985 Maya Ceramic Conference. P.M. Rice and R.J. Sharer, eds. Pp. 123-181. Oxford: BAR International Series 345.

- Laporte, Juan Pedro, and Mara A. Reyes
 2004 Catalogo de Objetos de Hueso del Atlas Arqueológico de Guatemala (S-001-S-060). *In* Reporte 18: Reconocimientos y Excavaciones Arqueológicas en los Municipios de la Libertad, Dolores y Poptun, Petén Pp. 282-294. Guatemala City: IDAEH-USAC.
- Larrain, Jorge
 1979 The Concept of Ideology. London: Hutchinson.
- Las Casas, Bartolomé
 1967 Apologénetica Historia SUMaria. Mexico City: Universidad Nacional Autónoma de México.
- Laughlin, Robert M.
 1975 The Great Tzotzil Dictionary of San Lorenzo Zinacantan. Washington D.C.: Smithsonian Institute Press.
- Leach, Edmund R.
 1954 Political Systems of Highland Burma: A Study of Kachin Social Structure. London: Bell.
- LeCount, Lisa J.
 1996 Pottery and Power: Feasting, Gifting, and Displaying Wealth among the Late and Terminal Classic Lowland Maya. Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.
 2001 Like Water for Chocolate: Feasting and Political Ritual among the Late Classic Maya at Xunantunich, Belize. *American Anthropologist* 103(4):935-953.
- Lee, Thomas A., Jr.
 1967 Excavation of a Rock Shelter in Chiapas. *Katunob* 6(3):4.
 1969 The Artifacts of Chiapa de Corzo, Chiapas, Mexico. Provo: Brigham Young University.
 1985 Cuevas Secas del Río La Venta, Chiapas: Informe Preliminar. *Revista de la Universidad Autónoma de Chiapas Segunda Epoca*, No.1:30-42.
- Lee, Thomas A., Jr., and Brian Hayden
 1988 San Pablo Cave and El Cayo on the Usumacinta River, Chiapas, Mexico. Provo: New World Archaeological Foundation, Brigham Young University.
- Lincoln, Charles
 1985 Ceramics and Ceramic Chronology. *In* A Consideration of the Early Classic Period in the Maya Lowlands. G.R. Willey and P. Mathews, eds. Pp. 55-94, Publication No. 10. Albany: Institute for Mesoamerican Studies, State University of New York.

- Linne, Sigvald
2003 [1934] Archaeological Researches at Teotihuacan, Mexico. Tuscaloosa: University of Alabama Press.
- Longyear, John M., III
1952 Copan Ceramics: A Study of Southeastern Maya Pottery. Washington, D.C.: Carnegie Institution of Washington.
- Lorenzen, Karl James
2002 Postclassic Yucatec Water Shrines and Ritual Cave Use. *In* Precolumbian Water Management: Ideology, Ritual and Power. L.J. Lucero and B.W. Fash, eds.
2003 Miniature Masonry Shrines of the Yucatan Peninsula: Ancestor Deification in Late Postclassic Maya Ritual and Religion. Ph.D. dissertation, Department of Anthropology, University of California, Riverside.
- Loten, H. Stanley, and David M. Pendergast
1984 A Lexicon for Maya Architecture. Archaeology Monograph 8. Ontario: Royal Ontario Museum.
- Lothrop, Samuel K.
1936 Zacualpa: A Study of Ancient Quiche Artifacts. Volume Publication No.335. Washington, D.C.: Carnegie Institution of Washington.
- Lounsbury, Floyd G.
1982 Astronomical Knowledge and Its Uses at Bonampak, Mexico. *In* Archaeoastronomy in the New World: American Primitive Astronomy. A.F. Aveni, ed. Pp. 143-168. Cambridge: Cambridge University Press.
- Low, Setha M., and Denise Lawrence-Zúñiga
2003 Locating Culture. *In* The Anthropology of Space and Place: Locating Culture. S.M. Low and D. Lawrence-Zuniga, eds. Pp. 1-47. Malden, MA: Blackwell.
- Lubbock, John (Lord Avebury)
1865 Pre-historic Times, as Illustrated by Ancient Remains, and the Manners and Customs of Modern Savages. London: Williams and Norgate.
1869 Pre-historic Times. London: Williams and Norgate.
1870 The Origin of Civilisation and the Primitive Condition of Man. London: Longmans, Green.
- Lucero, Lisa J.
2006 Water and Ritual: The Rise and Fall of Classic Maya Rulers. Austin: University of Texas Press.

- Lucero, Lisa J., and Barbara W. Fash, eds.
2006 Precolumbian Water Management: Ideology, Ritual, and Power Tucson:
University of Arizona Press.
- Luke, Christina
In press Creation in Ulúa Marble Vases: Memorializing Ideology, Landscape, and
Space. *RES: Aesthetics and Anthropology*
- n.d. White Prestige in the Late Classic Maya World: Maya, Mexican and Ulua
Stone Vases.
- Luke, Christina, and R. H. Tykot
In press Asserting Regional Preeminence through Luxury Production: Travesia and
Ulua Style Marble Vases Ancient Mesoamerica.
- MacLeod, Barbara, and Dennis Puleston
1979 Pathways into Darkness: The Search for the Road to Xibalba. *In* Third
Palenque Round Table, 1978, Part 1. M.G. Robertson and D.C. Jeffers, eds. Pp. 71-78,
Vol. Palenque Round Table Series 4. Palenque/Monterey: Pre-Columbian Art Research
Institute/Herald Printers.
- Martin, Simon, and Nikolai Grube
2000 Chronicle of the Maya Kings and Queens: Deciphering the Dynasties of the
Ancient Maya. London: Thames & Hudson.
- Marx, Karl, and Fredrick Engels
1970 The German Ideology. New York: International Publishers.
- Mason, Gregory
1928 Pottery and Other Artifacts from Caves in British Honduras and Guatemala.
New York: Museum of the American Indian Heye Foundation.
- Mathews, Jennifer P., and James F. Garber
2004 Models of Cosmic Order: The Physical Expression of Sacred Space Among
the Ancient Maya. *Ancient Mesoamerica* 15:49-59.
- Mathews, Peter
1980 Notes on the Dynastic Sequence of Bonampak, Part 1. *In* Third Palenque
Round Table, 1978, Part 2. M.G. Robertson, ed. Pp. 60-73. Austin: University of Texas
Press.
- Mathiowetz, Michael
2007 The Ceremonial Significance of Solar Ladders in Mesoamerica and the
Greater Southwest. Paper presented at the 72nd Annual Meeting of the Society for
American Archaeology, Austin, TX.

- Maudslay, Alfred Percival
1889-1902 *Archaeology*. Volume 1-4. London.
- McAnany, Patricia A.
1998 Caves and Settlements of the Sibun River Valley, Belize: 1997 Archaeological Survey and Excavation. Boston: Department of Archaeology, Boston University.
- McAnany, Patricia, ed.
2002 Sacred Landscape and Settlement in the Sibun River Valley: XARP 1999 Archaeological Survey and Excavation. Occasional Publication No.8. Albany, NY: Institute for Mesoamerican Studies, University at Albany, State University of New York.
- McAnany, Patricia A., Eleanor Harrison, Polly A. Peterson, Steven Morandi, Satoru Murata, Ben S. Thomas, Sandra L. López Varela, Daniel Finamore, and David G. Buck
2004 The Deep History of the Sibun River Valley. *In* *Archaeological Investigations in the Eastern Maya Lowlands: Papers of the 2003 Belize Archaeology Symposium*. J.J. Awe, J. Morris, and S. Jones, eds. Pp. 295-310. Research Reports in Belizean Archaeology Volume I. Belmopan, Belize: Institute of Archaeology, National Institute of Culture and History.
- McAnany, Patricia A., and Shannon. Plank
2001 Perspectives on Actors, Gender Roles, and Architecture at Classic Maya Courts and Households. *In* *Royal Courts of the Ancient Maya, Volume 1: Theory, Comparison, and Synthesis*. Pp. 84-129: Boulder: Westview.
- McAnany, Patricia A., and Ben S. Thomas, eds.
2003 Between the Gorge and the Estuary: Archaeological Investigations of the 2001 Season of the Xibun Archaeological Research Project: Manuscript on file, Department of Archaeology, Belmopan, Belize, and Boston University Department of Archaeology, Boston.
- McCafferty, Sharisse D., and Geoffrey G. McCafferty
1991 Spinning and Weaving as Female Gender Identity in Post-Classic Mexico. *In* *Textile Traditions of Mesoamerica and the Andes: An Anthology*. M.B. Schevil, J.C. Berlo, and E.B. Dwyer, eds. Pp. 19-44. New York: Garland.
- McCafferty, Sharisse D., and Geoffrey G. McCafferty
2000 Textile Production in Ancient Cholula, Mexico. *Ancient Mesoamerica* 11:39-54.
- McNatt, Logan
1986 1986 Chiquibul Expedition: Preliminary Archaeologic Report. Report submitted to the Department of Archaeology, Belize.
- McVicker, Donald
2005 Notched Human Bones from Mesoamerica. *Mesoamerican Voices* 2:1-31.

- Mercer, Henry C.
 1896 Hill-Caves of Yucatan. Philadelphia: J. B. Lippincott.
 1975(1896) Hill-Caves of Yucatan. Philadelphia: J. B. Lippincott.
- Miller, Daniel, and Christopher Tilley
 1984 Ideology, Power and Prehistory: An Introduction. *In* Ideology, Power and Prehistory. D. Miller and C. Tilley, eds. Pp. 1-15. Cambridge: Cambridge University Press.
- Miller, Mary
 1999 Maya Art and Architecture. London: Thames & Hudson.
 2001 Life at Court: The View from Bonampak. *In* Royal Courts of the Ancient Maya, Volume 2: Data and Case Studies. T. Inomata and S.D. Houston, eds. Pp. 201-222. Boulder: Westview.
- Miller, Mary, and Karl Taube
 1993 An Illustrated Dictionary of the Gods and Symbols of Ancient Mexico and the Maya. London: Thames & Hudson.
- Miller, Virginia E.
 1988 Introduction. *In* The Role of Gender in Precolumbian Art and Architecture. V.E. Miller, ed. Pp. vii-xviii. Lanham, MD: University Press of America.
- Mirro, Michael., and Jaime J. Awe
 1999 Preliminary Report of Investigation on Ledge 1 at Actun Yaxteel Ahau. *In* The Western Belize Regional Cave Project: A Report of the 1998 Field Season. J.J. Awe, ed. Pp. 166-185. Occasional Paper No. 2. Durham: Department of Anthropology, University of New Hampshire.
- Mirro, Michael, and Christina Halperin
 2000 Archaeological Investigations on Ledge 1 of Actun Yaxteel Ahau, Roaring Creek Valley, Cayo District, Belize. *In* The Western Belize Regional Cave Project: A Report of the 1999 Field Season. C.S. Griffith, R. Ishihara, and J.J. Awe, eds. Pp. 263-279, Vol. Occasional Paper No. 3. Durham: Department of Anthropology, , University of New Hampshire.
- Moholy-Nagy, Hattula
 2003 The Artifacts of Tikal: Utilitarian Artifacts and Unworked Material. Philadelphia: University of Pennsylvania Museum.
- Moholy-Nagy, Hattula, and John M. Ladd
 1992 Objects of Stone, Shell, and Bone. *In* Artifacts from the Cenote of Sacrifice, Chichen Itza, Yucatan. C.C. Coggins, ed. Pp. 99-152. Memoirs of the Peabody Museum of Archaeology and Ethnology 10(3). Cambridge: Harvard University Press.

- Monaghan, John
 1998 Dedication: Ritual or Production? *In* The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica. S.B. Mock, ed. Pp. 47-52. Albuquerque: University of New Mexico Press.
- Montero García, Ismael Arturo
 2000 Las Formaciones Subterráneas Naturales en la Historia de México. M.A. thesis, Universidad Nacional Autónoma de México, Mexico City.
- Morehart, Christopher
 2002 Ancient Maya Ritual Cave Utilization: A Paleoethnobotanical Perspective. M.A. thesis, Department of Anthropology, Florida State University, Tallahassee.
- Morgan, Lewis Henry
 1985 [1877] Ancient Society. Tucson: University of Arizona Press.
- Morris, Walter F.
 1985 Warped Glyphs: A Reading of Maya Textiles. *In* Fourth Palenque Round Table, 1980. E.P. Benson, ed. Pp. 317-323. San Francisco: Pre-Columbian Art Research Institute.
 1986 Maya Time Warps. *Archaeology* 39(3):52-59.
- Morris, Zoe, and Heather McKillop
 2007 Demographics of Two Coastal Maya Sites: The Burials from Moho Cay and Wild Cane Cay, Belize. Paper presented at the 72nd Annual Meeting of the Society for American Archaeology, Austin, TX.
- Moscoso Moller, Fernando
 1991a Operacion AG7: Terraza que Sirve de Basamento a las Estructuras L6-18 y L6-19. *In* Proyecto Arqueológico Regional Petexbatun: Informe Preliminar #3, Tercera Temporada. A.A. Demarest, T. Inomata, H. Escobedo, and J. Palka, eds. Pp. 538-545. Report submitted to the Instituto de Antropología e Historia de Guatemala.
 1991b Operacion AG8: Grupo L6-1 y Estructura L6-1. *In* Proyecto Arqueológico Regional Petexbatun: Informe Preliminar #3, Tercera Temporada. A.A. Demarest, T. Inomata, H. Escobedo, and J. Palka, eds. Pp. 546-549. Report submitted to the Instituto de Antropología e Historia de Guatemala.
- Moyes, Holley
 1998 The Cave as a Cosmogram: Function and Meaning of Maya Speleothem Use at Actun Tunichil Muknal, Belize. *In* Paper presented at the 3rd Annual European Conference, Hanburg, Germany.
 2001 The Cave as a Cosmogram: The Use of GIS in an Intrasite Spatial Analysis of the Main Chamber of Actun Tunichil Muknal, a Ceremonial Cave in Western Belize. M.A. thesis, Florida Atlantic University.

- 2006 The Sacred Landscape as a Political Resource: A Case Study of Ancient Maya Cave Use at Chechem Ha Cave, Belize, Central America. Ph.D. dissertation, Department of Anthropology, State University of New York, Buffalo.
- Navarrete, Carlos
 1957 El Material Arqueológico de la Cueva de Calucan. *Tlatoani* 11:14-18.
- 1960 Archaeological Explorations in the Region of the Frailisa, Chiapas, Mexico. *New World Archaeological Foundation Reports No.7*. Provo: New World Archaeological Foundation.
- Navarrete, Carlos, and Luis Lujan Munoz
 1963 Reconocimiento Arqueológico del Sitio de "Dos Pilas," Petexbatun, Guatemala. Guatemala: Facultad de Humanidades, Universidad de San Carlos.
- Navarrete, Carlos, and Eduardo Martinez
 1977 Exploraciones Arqueológicas en la Cueva de los Andasolos, Chiapas: Universidad Autónoma de Chiapas, Mexico.
- Nelson, Sarah
 1997 *Gender in Archaeology: Analyzing Power and Prestige*. Walnut Creek: Altamira Press.
- Núñez Chinchilla, Jesús
 1972 Reconocimiento y Exploración de una "Cueva Votiva" en la Zona Arqueológica de las Ruinas de Copán. *Anales de la Sociedad de Geografía e Historia de Guatemala* 45:102-105.
- O'Neale, Lila M.
 1945 *Textiles of Highland Guatemala*. Washington, D.C.: Carnegie Institution.
- Owen, Vanessa
 2002 An Investigation of Classic Maya Cave Mortuary Practices at Barton Creek Cave, Belize. M.A. thesis, Department of Anthropology, Colorado State University.
- 2005 A Question of Sacrifice: Classic Maya Cave Mortuary Practices at Barton Creek Cave, Belize. *In Stone Houses and Earth Lords: Maya Religion in the Cave Context*. K.M. Prufer and J.E. Brady, eds. Pp. 323-340. Boulder: University Press of Colorado.
- Owen, Vanessa A., and Sherry A. Gibbs
 1999 Preliminary Report of Investigations on Ledge 2 at Actun Yaxteel Ahau. *In The Western Belize Regional Cave Project: A Report of the 1998 Field Season*. J.J. Awe, ed. Pp. 186-204. Occasional Paper No. 2. Durham: Department of Anthropology, University of New Hampshire.

- Palacio, Joseph O.
 1973 Excavations in Three Cave Sites in the Sibun River Valley. Manuscript on file, Department of New World Archaeology, Royal Ontario Museum, Toronto.
- Palomo, Juan Manuel
 2005 Los Restos Oseos Humanos de las Grietas en Aguateca. *In* Informe del Proyecto Arqueológico Aguateca Segunda Fase: La Temporada de Campo de 2005. E.M. Ponciano, D. Triadan, and T. Inomata, eds. Pp. 22.1-22.8: Report submitted to the Instituto de Antropología e Historia de Guatemala, Guatemala City.
 2007 Muerte, Cerro y Cueva: La Bioarqueología de las Grietas en Aguateca. Licenciatura thesis, Universidad de San Carlos, Guatemala City.
- Parsons, Elsie Clews
 1936 Mitla, Town of Souls. Chicago: University of Chicago Press.
- Parsons, Mary H.
 1972 Spindle Whorls from the Teotihuacan Valley. *In* Miscellaneous Studies in Mexican Prehistory. M.W. Spence, J.R. Parsons, and M.H. Parsons, eds. Museum of Anthropology Paper 45. Ann Arbor: University of Michigan.
- Pasztor, Esther
 1983 Aztec Art. New York: Harry N. Abrams, Inc.
- Patel, Shankari
 2004 Pre-Columbian Pilgrimage on Cozumel Island. M.S. thesis, California State University, Los Angeles.
- Pauketat, Timothy R.
 2001 Practice and Theory in Archaeology: An Emerging Paradigm. *Anthropological Theory* 1(1):73-98.
- Pendergast, David
 1969a Altun Ha, British Honduras (Belize): The Sun God's Tomb. Volume Occasional Paper 19. Toronto: Royal Ontario Museum.
- Pendergast, David M.
 1962 Breve Reconocimiento Arqueológico en Honduras Británica. *Estudios de Cultura Maya* 2:197-203.
 1969b The Prehistory of Actun Balam, British Honduras. Toronto: Royal Ontario Museum.
 1970 A.H. Anderson's Excavations at Rio Frio Cave E, British Honduras (Belize). Toronto: Royal Ontario Museum.

- 1971 Excavations at Eduardo Quiroz Cave, British Honduras (Belize). Volume No. 21. Toronto.
- 1974 Excavations at Actun Polbilche, Belize. Volume Monograph 1. Toronto: Royal Ontario Museum.
- Peterson, Polly A., Patricia A. McAnany, and Allan B. Cobb
 2005 De-fanging the Earth Monster: Speleothem Transport to Surface Sites in the Sibun Valley. *In* Stone Houses and Earth Lords: Maya Religion in the Cave Context. K.M. Prufer and J.E. Brady, eds. Pp. 227-248. Boulder: University Press of Colorado.
- Peterson, Polly Ann
 2006 Ancient Maya Ritual Cave Use in the Sibun River Valley, Belize. Ph.D. dissertation, Department of Archaeology, Boston University.
- Phillips, David A., Jr.
 1979 Material Culture and Trade of the Postclassic Maya. Ph.D. dissertation, University of Arizona.
- Pohl, Mary
 1983 Maya Ritual Faunas: Vertebrate Remains from Burials, Caches, Caves, and Cenotes in the Maya Lowlands. *In* Civilization in the Ancient Americas: essays in honor of Gordon R. Willey. R.M. Leventhal and A.L. Kolata, eds. Pp. 55-103. Albuquerque: University of New Mexico Press.
- 1990 The Ethnozoology of the Maya: Faunal Remains from Five Sites in the Peten, Guatemala. *In* Excavations at Seibal, Guatemala. G.R. Willey, ed. Peabody Museum Monographs, Vol. 18, No.3. Cambridge, Mass.: Harvard University.
- Pohl, Mary, and John Pohl
 1983 Ancient Maya Cave Ritual. *Archaeology* 36(3):28-32,50-51.
- Ponciano, Erick, María de los Angeles Corado, Paola Duarte, and Ana Cristina Morales
 2004a Excavaciones en la Estructura M7-22: Operacion 22C. *In* Informe del Proyecto Arqueologico Aguateca, Segunda Fase: La Temporada de Campo de 2004. E.M. Ponciano, D. Triadan, and T. Inomata, eds. Pp. 2.1-2.10. Guatemala City: Report submitted to the Instituto de Antropologia e Historia de Guatemala.
- Ponciano, Erick M., and Marco A. Monroy
 2005 Plaza Principal: Estructura L8-6: Operacion 32A. *In* Informe del Proyecto Arqueologico Aguateca, La Temporada de Campo 2005. E.M. Ponciano, D. Triadan, and T. Inomata, eds. Pp. 2.1-2.19. Report submitted to the Instituto de Antropologia e Historia de Guatemala.
- Ponciano, Erick M., Daniela Triadan, and Takeshi Inomata, eds.
 2004b Informe del Proyecto Arqueológico Aguateca, Segunda Fase: La Temporada

- de Campo de 2004. Report submitted to the Instituto de Antropología e Historia de Guatemala.
- 2005 Informe del Proyecto Arqueológico Aguateca, La Temporada de Campo 2005. Report submitted to the Instituto de Antropología e Historia de Guatemala.
- Pope, Kevin O., and Malcolm B. Sibberensen
 1981 In Search of Tzultacaj: Cave Explorations in the Maya Lowlands of Alta Verapaz, Guatemala. *Journal of New World Archaeology* IV(3):16-87.
- Prechtel, Martin, and Robert S. Carlsen
 1988 Weaving and Cosmos Amongst the Tzutujil Maya. *RES* 15:122-132.
- Proskouriakoff, Tatiana
 1961 Portraits of Women in Maya Art. *In* *Essays in Pre-Columbian Art and Archaeology*. S.K. Lothrop, ed. Cambridge: Harvard University Press.
- 1962 The Artifacts of Mayapan. *In* *Mayapan, Yucatan, Mexico*. H.E.D. Pollock, R.L. Roys, T. Proskouriakoff, and A.L. Smith, eds. Pp. 321-432, Publication 619, Part 4. Washington, D.C.: Carnegie Institution of Washington.
- 1973 The Hand-grasping-fish and Associated Glyphs on Classic Maya Monuments. *In* *Mesoamerican Writing Systems*. E.P. Benson, ed. Pp. 165-178. Washington, D.C.: Dumbarton Oaks.
- 1974 Jades from the Cenote of Sacrifice, Chichen Itza. Volume 10(1). Cambridge: Harvard University.
- Prufer, Keith M.
 2002 Communities, Caves, and Ritual Specialists: A Study of Sacred Space in the Maya Mountains of Southern Belize. Ph.D. dissertation, Southern Illinois University.
- Redfield, Robert
 1941 The Folk Culture of Yucatan. Chicago: University of Chicago Press.
- Redfield, Robert, and Alfonso Villa Rojas
 1934 Chan Kom: A Maya Village. Chicago: University of Chicago Press.
- Reents-Budet, Dorie
 1980 The Prehistoric Pottery from Petroglyph Cave, Caves Branch Valley, El Cayo District, Belize, Central America. M.A. thesis, University of Texas, Austin.
- 2000 Feasting among the Classic Maya: Evidence from the Pictorial Ceramics. *In* *The Maya Vase Book: A Corpus of Rollout Photographs of Maya Vases*, 6. J. Kerr, ed. Pp. 1022-1037. New York: Kerr Associates.
- Reents-Budet, Doris, and Barbara MacLeod
 1997 The Archaeology of Petroglyph Cave, Cayo District, Belize. Manuscript on file in the Department of Archaeology, Belmopan, Belize.

Reimer, P.J., M.G.L. Baillie, E. Bard, A. Bayliss, J.W. Beck, C.J.H. Bertrand, P.G. Blackwell, C.E. Buck, G.S. Burr, K.B. Cutler, P.E. Damon, R.L. Edwards, R.G. Fairbanks, M. Friedrich, T.P. Guilderson, A.G. Hogg, K.A. Hughen, B. Kromer, G. McCormac, S. Manning, C. Bronk Ramsey, R.W. Reimer, S. Remmele, J.R. Southon, M. Stuiver, S. Talamo, F.W. Taylor, J. van der Plicht, C.E. Weyhenmeyer

2004 IntCal04 Terrestrial Radiocarbon Age Calibration, 0-26 cal kyr BP.
Radiocarbon 46(3):1029-1058.

Relaciones de Yucatan

1898-1900 Relaciones de Yucatan. *In* Coleccion de Documentos Ineditos Relativos al Descubrimiento, Conquista y Organizacion de las Antiguas Posesiones Espanolas de Ultramar. Madrid.

Ricketson, Oliver G.

1929 Excavations at Baking Pot, British Honduras. Washington, D.C.: Carnegie Institution of Washington.

Ricketson, Oliver G., and Edith Bayles Ricketson

1937 Uaxactun, Guatemala, Group E 1926-1931. Volume No.477. Washington, D.C.: Carnegie Institution of Washington.

Rissolo, Dominique

1995 An Archaeological Investigation of Tacbi Ha Cave. *In* The Yalahau Regional Human Ecology Project: Research Orientation and Overview of 1993 Investigations. S.L. Fedick and K. Taube, eds. Pp. 115-120. Riverside: University of California.

2001 Ancient Maya Cave Use in the Yalahau Region, Northern Quintana Roo, Mexico. Ph.D. dissertation, University of California, Riverside.

2003 Ancient Maya Cave Use in the Yalahau Region, Northern Quintana Roo, Mexico. Austin: Association for Mexican Cave Studies.

Robicsek, Francis, and Donald M. Hales

1981 The Maya Book of the Dead: The Ceramic Codex. Charlottesville: University of Virginia Art Museum.

Roys, Ralph L.

1957 The Political Geography of the Yucatan Maya. Publication 613. Washington, D.C.: Carnegie Institution of Washington.

1967 The Chilam Balam of Chumayel. Norman: University of Oklahoma Press.

Ruz Lhuillier, Alberto

1958 Exploraciones Arqueologicas en Palenque, 1953-1956. *In* Anales Instituto Nacional de Antropología e Historia. Pp. 69-299, Vol. 10. Mexico: Secretaria de Educación Pública.

- Sabloff, Jeremy A.
 1975 Excavations at Seibal, Department of Peten, Guatemala, Part 2: Ceramics.
 Volume 13. Cambridge, MA: Harvard University.
- Sahagún, Fray Bernardino de
 1950-1969 Florentine Codex: General History of the Things of New Spain. A.O.
 Anderson and C.E. Dibble, transl. Santa Fe/Salt Lake City: School of American
 Research/University of Utah.
- Sandstrom, Alan R.
 2005 The Cave-Pyramid Complex among the Contemporary Nahua of Northern
 Veracruz. *In* In the Maw of the Earth Monster: Studies of Mesoamerican Ritual Cave Use.
 J.E. Brady and K.M. Prufer, eds. Pp. 35-68. Austin: University of Texas Press.
- Sandstrom, Alan R., and Pamela E. Sandstrom
 1986 Traditional Papermaking and Paper Cult Figures of Mexico. Norman:
 University of Oklahoma Press.
- Sanmiguel, Ines
 1994 A Ceremony in the 'Cave of Idolatry': An Eighteenth-Century Document from
 the Diocesan Historic Archive, Chiapas, Mexico. *In* Sacred Sites, Sacred Places. D.L.
 Carmichael, J. Hubert, B. Reeves, and A. Schanche, eds. Pp. 163-171. London:
 Routledge.
- Saturno, William A., Karl A. Taube, David Stuart, and Heather Hurst
 2005 The Murals of San Bartolo, El Peten, Guatemala, Part 1: The North Wall.
 Volume 7. Barnardsville, NC: Center for Ancient American Studies.
- Scarborough, Vernon L.
 2003 The Flow of Power: Ancient Water Systems and Landscapes. Santa Fe: School
 for Advanced Research Press.
- Schaafsma, Polly, and Karl A. Taube
 2006 Bringing the Rain: An Ideology of Rain Making in the Pueblo Southwest and
 Mesoamerica. *In* A Pre-Columbian World: Searching for a Unitary Vision of Ancient
 America. J. Quilter, ed. Pp. 231-285. Washington, D.C.: Dumbarton Oaks.
- Schele, Linda, and David Freidel
 1990 A Forest of Kings: The Untold Story of the Ancient Maya. New York: William
 and Morrow.
- Schele, Linda, and Mary E. Miller
 1986 The Blood of Kings: Dynasty and Ritual in Maya Art. New York, Fort Worth:
 George Braziller, Inc. and Kimbell Art Museum.
- Schmidt, Peter
 1977 Post Classic Finds in the Cayo District, Belize. *Estudios de Cultura Maya*
 10:103-114.

- Scott, Ann M.
 2007a The Historical Context of the Founding of Maya Cave Archaeology. Manuscript submitted to the Journal of Cave and Karst Studies.
- 2007b The Role of the Nashville Cave Session in the Development of a Self-Conscious Subdiscipline. Paper presented at the 72nd Annual Meetings of the Society for American Archaeology, Austin, TX.
- Scott, Ann M., and Walter Little
 2003 Contemporary Maya Beliefs and Cave Utilization: Implications for Archaeological Interpretation. Paper presented at the Annual Meeting for the Society for American Archaeology, Milwaukee, WI.
- Sedat, William
 1955 Nuevo Diccionario Kekchi-Español. Guatemala City: Instituto Lingüístico de Verano.
- Seler, Eduard
 1901 Die Alten Ansiedlungen von Chacula, im Distrikte Nenton des Departments Huehuetenango der Republik Guatemala. Berlin: Dietrich Reiner Verlag.
- 1990-98 Collected Works in Mesoamerican Linguistics and Archaeology. 6 vols. Culver City, CA: Labyrinthos.
- 1992 Ancient Mexican Bone Rattles. *In* Collected Works in Mesoamerican Linguistics and Archaeology, Vol.III. F.E. Comparato, ed. Pp. 62-73. Culver City: Labyrinthos.
- Serra Puche, Mari Carmen
 2001 The Concept of Feminine Places in Mesoamerica: The Case of Xochitecatl, Tlaxcala, Mexico. *In* Gender in Pre-Hispanic America. C.F. Klein, and Jeffrey Quilter, ed. Pp. 255-283. Washington, D.C.: Dumbarton Oaks.
- Serra Puche, Mari Carmen and Ludwig Beutelspacher
 1993 Xochitécatl, Tlaxcala. *In* Arqueología: Imagen e Identidad. Pp. 48-67. Mexico City: Azabache.
- Shade, Beverley L., Philip Rykwald, Nicholas Johnson, Reiko Ishihara, and Jenny Guerra
 2005 Exploración y Mapeo de la Grieta Principal de Aguateca y las Grietas y Cuevas del Transecto Norte. *In* Informe del Proyecto Arqueológico Aguateca, La Temporada de Campo 2005. E.M. Ponciano, D. Triadan, and T. Inomata, eds. Pp. 8.1-8.8. Report submitted to the Instituto de Antropología e Historia de Guatemala.
- Sharer, Robert J.
 1978 Special Deposits. *In* The Prehistory of Chalchuapa, El Salvador, Vol.1. R.J. Sharer, ed. Pp. 181-194. Philadelphia: University of Pennsylvania Press.

- Sheets, Payson, ed.
2002 Before the Volcano Erupted: The Ancient Cerén Village in Central America. Austin: University of Texas Press.
- Sheets, Payson D.
1992 The Ceren Site: A Prehistoric Village Buried by Volcanic Ash in Central America. Fort Worth: Harcourt Brace College Publishers.
- Shennan, S.
1993 After Social Evolution: A New Archaeological Agenda? *In* Archaeological Theory: Who Sets the Agenda? N. Yoffee and A. Sherratt, eds. Pp. 53-59. Cambridge: Cambridge University Press.
- Shook, Edwin M.
1949 Guatemala Highlands. *Carnegie Institution of Washington Yearbook* 48:219-224.
- Shook, Edwin M., and Alfred V. Kidder
1952 Mound E-III-3, Kaminaljuyu, Guatemala. Washington, D.C.: Carnegie Institution of Washington.
- Silverblatt, Irene
1991 Interpreting Women in States: New Feminist Ethnohistories. *In* Gender at the Crossroads of Knowledge: Feminist Anthropology in the Postmodern Era. M. di Leonardo, ed. Pp. 140-171. Berkeley: University of California Press.
- Smith, A. Ledyard, and Alfred V. Kidder
1943 Explorations in the Motagua Valley, Guatemala. Publication 546, Contributions to American Anthropology and History No.41. Washington, D.C.: Carnegie Institute of Washington.

1951 Excavations at Nebaj, Guatemala. Publication 594. Washington, D.C.: Carnegie Institution.
- Smith, Adam T.
2003 The Political Landscape: Constellations of Authority in Early Complex Polities. Berkeley: University of California Press.
- Smith, Garry K.
1999 Glossary of Caving Terms. *In* Australian Speleological Foundation Inc. Proceedings of the 22nd Biennial Conference. Pp. 61-83. Broadway: Australian Speleological Foundation. Accessed at <http://wasg.iinet.net.au/glossary.html> on May 3, 2007.
- Smith, Robert E.
1953 Cenote X-Coton at Mayapan. Current Report (Carnegie Institution of Washington, Washington, D.C.) 5:67-81.

- 1954 Cenote Exploration at Mayapan and Telchaquillo. Current Report (Carnegie Institution of Washington, Washington, D.C.) 12:222-233.
- 1955 Ceramic Sequence at Uaxactun, Guatemala. 2 volumes. New Orleans: Middle American Research Institute, Tulane University.
- 1971 The Pottery of Mayapan, including studies of ceramic material from Uxmal, Kabah, and Chichen Itza. Cambridge: Peabody Museum of Archaeology and Ethnology, Harvard University.
- Smith, Robert E., and James C. Gifford
 1966 Maya Ceramic Varieties, Types, and Wares at Uaxactun: Supplement to "Ceramic Sequence at Uaxactun, Guatemala". New Orleans: Middle American Research Institute, Tulane University.
- Smith, Robert E., Gordon R. Willey, and James C. Gifford
 1960 The Type-Variety Concept as a Basis for the Analysis of Maya Pottery. *American Antiquity* 25(3):330-347.
- Sosa, John R.
 1985 The Maya Sky, the Maya World: A Symbolic Analysis of Yucatec Maya Cosmology. Ph.D. dissertation, State University of New York, Albany.
- Stephens, John L.
 1843 Incidents of Travel in Yucatan. 2 vols. New York: Dover Publications, Inc.
- Stone, Andrea
 1982 Recent Discoveries from Naj Tunich. *Mexicon* 4:93-99.
- 1985 The Moon Goddess at Naj Tunich. *Mexicon* 7(2):23-29.
- 1987 Cave Painting in the Maya Area. *Latin American Indian Literatures Journal* 3(1):95-108.
- 1988 Sacrifice and Sexuality: Some Structural Relationships in Classic Maya Art. *In* *The Role of Gender in Precolumbian Art and Architecture*. V.E. Miller, ed. Pp. 75-103. Lanham, MD: University Press of America.
- 1989a Actun Ch'on, Oxkutzcab, Yucatan: Una Cueva Maya con Pinturas del Clasico Tardio. *Boletin de la Escuela de Ciencias Antropológicas de la Universidad de Yucatan* 16(99):24-35.
- 1989b The Painted Walls of Xibalba: Maya Cave Painting as Evidence of Cave Ritual. *In* *Word and Image in Maya Culture: Explorations in Language, Writing, and Representation*. W.F. Hanks and D.S. Rice, eds. Pp. 319-335. Salt Lake City: University of Utah Press.
- 1995 Images from the Underworld: Naj Tunich and the Tradition of Maya Cave Painting. Austin: University of Texas Press.

- 2004 A Cognitive Approach to Artifact Distribution in Caves of the Maya Area. *In* In the Maw of the Earth Monster: Studies of Mesoamerican Ritual Cave Use. K.M. Prufer and J.E. Brady, eds. Pp. 249-268. Austin: University of Texas Press.
- Stromsvik, Gustav
1956 Exploration of the Cave of Dzab-Na, Tecoh, Yucatan. Current Report (Carnegie Institution of Washington, Washington, D.C.) 35:463-470.
- Stross, Brian
1998 Seven Ingredients in Mesoamerican Ensoulment: Dedication and Termination in Tenejapa. *In* The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica. S.B. Mock, ed. Pp. 31-39. Albuquerque: University of New Mexico Press.
- Stuart, David, and Stephen Houston
1994 Classic Maya Place Names. Studies in Pre-Columbian Art and Archaeology, No. 33. Washington, D.C.: Dumbarton Oaks.
- Stuart, George E., and Gene S. Stuart
1977 The Mysterious Maya. Washington: National Geographic Society.
- Sugiyama, Saburo
1993 Worldview Materialized in Teotihuacan, Mexico. Latin American Antiquity 4(2):103-129.
- Sullivan, Thelma D.
1982 Tlazolteotl-Ixcuina: The Great Spinner and Weaver. *In* The Art and Iconography of Late Post-Classic Central Mexico. E.H. Boone, ed. Pp. 7-35. Washington, D.C.: Dumbarton Oaks.
- Tambiah, Stanley J.
1976 World Conqueror and World Renouncer. Cambridge: Cambridge University Press.

1977 The Galactic Polity: The Structure of Traditional Kingdoms in Southeast Asia. Annals of the New York Academy of Sciences 293:69-97.
- Tarn, Nathaniel, and Martin Prechtel
1986 Constant Inconstancy: The Feminine Principle in Atiteco Mythology. *In* Symbol and Meaning Beyond the Closed Community: Essays in Mesoamerican Ideas. G. Gossen, ed. Pp. 173-184, Vol. Studies on Culture and Society Volume 1. Albany: Institute for Mesoamerican Studies.
- Taschek, Jennifer T.
1994 The Artifacts of Dzibilchaltun, Yucatan, Mexico: Shell, Polished Stone, Bone, Wood, and Ceramics. Publication 50. New Orleans: Middle American Research Institute, Tulane University.

- Tate, Carolyn E.
 1992 Yaxchilan: The Design of a Maya Ceremonial City. Austin: University of Texas Press.
- Taube, Karl A.
 1986 The Teotihuacan Cave of Origin: The Iconography and Architecture of Emergence Mythology in Mesoamerica and the American Southwest. *RES: Anthropology and Aesthetics* 12:51-82.
 1988 A Prehispanic Maya Katun Wheel. *Journal of Anthropological Research* 44(2):183-203.
 1992 The Major Gods of Ancient Yucatan. Volume 32. Washington, D.C.: Dumbarton Oaks.
 1994 The Birth Vase: Natal Imagery in Ancient Maya Myth and Ritual. *In* The Maya Vase Book, Volume 4. J. Kerr, ed. Pp. 650-685. New York: Kerr Associates.
 1998 The Jade Hearth: Centrality, Rulership, and the Classic Maya Temple. *In* Function and Meaning in Classic Maya Architecture. S.D. Houston, ed. Pp. 427-478. Washington, D.C.: Dumbarton Oaks.
 2001 The Breath of Life: The Symbolism of Wind in Mesoamerica and the American Southwest. *In* The Road to Aztlan: Art from a Mythic Homeland. V.M. Fields and V. Zamudio-Taylor, eds. Pp. 102-123. Los Angeles: Los Angeles County Museum of Art.
 2004 Flower Mountain: Concepts of Life, Beauty, and Paradise among the Classic Maya. *RES: Anthropology and Aesthetics* 45(Spring):69-98.
- Tedlock, Barbara
 1982 Time and the Highland Maya. Albuquerque: University of New Mexico Press.
- Tedlock, Dennis
 1996 Popol Vuh: The Mayan Book of the Dawn of Life. New York: Simon & Schuster.
- Thompson, Edward H.
 1897 Cave of Loltun, Yucatan. Vol.1, No.2. Cambridge, MA.: Harvard University.
- Thompson, J. Eric S.
 1930 Ethnology of the Mayas of Southern and Central British Honduras. Volume Field Museum of Natural History Publication 274, Anthropological Series 17, no.2.
 1939 Excavations at San Jose, British Honduras. Washington, D.C.: Carnegie Institution of Washington.
 1970 Maya History and Religion. Norman: University of Oklahoma Press.

- 1972 A Commentary on the Dresden Codex. Philadelphia: American Philosophical Society.
- 1975 Introduction to the Reprint Edition. *In* The Hill-Caves of Yucatan by Henry C. Mercer. Pp. vii-xliv. Norman: University of Oklahoma Press.
- Tiesler, Vera
2005 What Can the Bones Really Tell Us? The Study of Human Skeletal Remains from Cenotes. *In* Stone Houses and Earth Lords: Maya Religion in the Cave Context. K.M. Prufer and J.E. Brady, eds. Pp. 341-363. Boulder: University Press of Colorado.
- Tozzer, Alfred M.
1907 A Comparative Study of the Mayas and the Lacandonas. New York: MacMillan.
- 1941 Landa's Relación de las Cosas de Yucatan: A Translation. Papers of the Peabody Museum of Archaeology and Ethnology 18. Cambridge: Harvard University.
- Tozzer, Alfred M., and Glover M. Allen
1910 Animal Figures in the Maya Codices. Cambridge: Peabody Museum of American Archaeology and Ethnology, Harvard University.
- Trigger, Bruce G.
1986 Ethnohistory: The Unfinished Edifice. *Ethnohistory* 33(3):253-267.
- 2000 A History of Archaeological Thought. Cambridge, UK: Cambridge University Press.
- Turner, Paul R.
1972 The Highland Chontal. New York: Holt, Reinhart, and Winston.
- Uke, Tugrul
1970 Cutting the Hour. *Westways* 62(5):30-33,57.
- Vail, Gabrielle, and Andrea Stone
2002 Representations of Women in Postclassic and Colonial Maya Literature and Art. *In* Ancient Maya Women. T. Ardren, ed. Pp. 203-228. Walnut Creek: Altamira Press.
- Valdés, Juan Antonio, et al., eds.
2000 Informe Final del Proyecto de Restauración Aguateca, Enero-Mayo 2000. Guatemala City: Field report submitted to the Instituto de Antropología e Historia de Guatemala.
- Valladares, León A.
1957 El Hombre y el Maíz: Etnografía y Etnopsicología de Colotenango. Mexico: Editorial B. Costa-Amic, Mesones.

- Van Dyke, Ruth M., and Susan E. Alcock
 2003 Archaeologies of Memory: An Introduction. *In* *Archaeologies of Memory*.
 R.M. Van Dyke and S.E. Alcock, eds. Pp. 1-13. Malden: Blackwell.
- Vidyarthi, Lalita Prasad
 1961 The Sacred Complex in Hindu Gaya. London: Asia Publishing House.
 1979 The Sacred Complex of Kashi. New Delhi: Concept.
- Viel, Rene
 1993 Evolución de la Cerámica de Copán, Honduras. Tegucigalpa, Honduras:
 Instituto Hondureño de Antropología e Historia
- Villa Rojas, Alfonso
 1947 Kinship and Nagualism in a Tzeltal Community, Southeastern Mexico.
American Anthropologist 49(4):578-587.
- Vogt, Evon Z.
 1969 Zinacantan: A Maya Community in the Highlands of Chiapas. Cambridge,
 MA: Harvard University Press.
 1976 Tortillas for the Gods: A Symbolic Analysis of Zinacanteco Rituals. Norman:
 University of Oklahoma Press.
 1981 Some Aspects of the Sacred Geography of Highland Chiapas. *In*
Mesoamerican Sites and World-views. E.P. Benson, ed. Pp. 119-142. Washington, D.C.:
 Dumbarton Oaks.
 1993 Tortillas for the Gods: A Symbolic Analysis of Zinacanteco Rituals. Norman:
 University of Oklahoma Press.
- Vogt, Evon Z., and David Stuart
 2005 Some Notes on Ritual Caves among the Ancient and Modern Maya. *In* *In the*
Maw of the Earth Monster: Mesoamerican Ritual Cave Use. J.E. Brady and K.M. Prufer,
 eds. Pp. 155-185. Austin: University of Texas Press.
- Watanabe, John M.
 1992 Maya Saints and Souls in a Changing World. Austin: University of Texas
 Press.
- Wheatley, Paul
 1971 The Pivot of the Four Quarters: A Preliminary Enquiry into the Origins and
 Character of the Ancient Chinese City. Edinburgh: Edinburgh University Press.
- Willey, Gordon R.
 1972 The Artifacts of Altar de Sacrificios. Volume 64, No.1. Cambridge: Harvard
 University.

- 1978 Excavations at Seibal: Artifacts. Volume 14, No.1. Cambridge, Massachusetts: Peabody Museum of Archaeology and Ethnology, Harvard University.
- Willey, Gordon R., et al.
1965 Prehistoric Maya Settlements in the Belize Valley. Volume 54. Cambridge, Mass.: Harvard University.
- Wolf, Eric
1990 Facing Power: Old Insights, New Questions. *American Anthropologist* 92(3):586-596.
- 1994 Facing Power: Old Insights, New Questions. *In* Assessing cultural anthropology. R. Borofsky, ed. Pp. 218-228. New York: McGraw-Hill.
- Wolley, Claudia
1992 Sondeos en Grupos del Noroeste de Aguateca. *In* Proyecto Arqueologico Regional Petexbatun: Informe Preliminar #4, Cuarta Temporada. A.A. Demarest, T. Inomata, and H. Escobedo, eds. Pp. 197-217. Guatemala.; Instituto de Antropologia e Historia; Nashville: Vanderbilt University.

APPENDIX A: GLOSSARY OF CAVE TERMINOLOGY

This section defines terms related to caves that are used throughout the dissertation. The definitions are based on glossaries compiled by Jennings (1985) and Smith (1999).

ACTIVE CAVE. *n.* A cave containing a stream, drips of water, or active speleothems. Synonym of live cave. Antonyms of **dormant cave** or dead cave.

BREAKDOWN. *n.* Broken bedrock from cave roof or wall.

CALCIFY. *v.* To harden by the deposit of calcium salt. Eg. calcified human bone in Grieta Rincón.

CHAMBER. *n.* The largest order of cavity in a cave, with considerable width and length but not necessarily great height.

DARK ZONE. *n.* The part of a cave where daylight does not reach. Cf. twilight zone.

DORMANT CAVE. *n.* A cave without streams, drips of water, or active speleothems. Antonym of **active cave** or live cave.

DRIPLINE. *n.* A line on the ground at the cave entrance, or in the case of the Aguateca *grietas*, inside the *grieta*, formed by water dripping from the rock above.

ENTRANCE ZONE. *n.* The interface between the surface and subterranean environments leading into the **twilight zone**.

FLOWSTONE. *n.* A deposit of calcite formed by a thin film or trickle of calcium bearing water, flowing over walls or floors. Cf. **travertine** and **speleothem**.

FORMATION. *n.* A colloquial term, incorrectly used to encompass all types of **speleothem**.

KARST. *n.* An area of terrain containing features, which are formed by natural waters dissolving rock. In most cases, these areas contain caves. The Yucatan peninsula is largely comprised of limestone karst.

PASSAGE. *n.* A cavity in a cave, whose length is greater than its width or height.

RAPPEL. *v.* The act of lowering oneself down a cliff or steep slope on a fixed rope. The controlled descent is obtained by friction of rope on the body or passing the rope through a karabiner, which is a metallic link with a spring loaded gate, or other descending device.

RIMSTONE DAM. *n.* A ridge of calcium carbonate or other precipitated deposit from water flowing over the edge of a pool. The ridge or dam formed is often curved convexly downstream. Cf. **travertine**.

SOLUTION. *n.* In **karst** study, the change of bedrock from the solid state to the liquid state by combination with water. Water containing carbon dioxide or other dilute acid in solution causes the chemical erosion of carbonate rock. The acidic water erodes the bedrock (e.g., limestone) when its ions go directly into solution without transformation and are carried away.

SPELEOTHEM. *n.* A secondary mineral deposit formed within a cave, most commonly calcite, though may be aragonite or vaterite or other mineral. Includes stalactites and stalagmites of ice and lava. Stems from the Greek *speleon*, a cave, and *them*, deposit. Note the term “cave rock,” which is occasionally used in the archaeological literature, is ambiguous and misleading, as it could refer to either speleothems or the bedrock in which the cave is formed (Bev Shade, personal communication, 2004).

STALACTITE. *n.* A secondary mineral deposit (**speleothem**), hanging from the roof of a cave and often shaped like an icicle. Most commonly consisting of calcium carbonate, which forms by seeping or dripping water depositing calcium carbonate out of solution. **Travertine** is the form of limestone, which makes up this type of speleothem. Stalactites include formations of ice, lava, and other deposited cave minerals.

STALAGMITE. *n.* A secondary mineral deposit (**speleothem**), which grows upward from the floor of a cave. Most commonly consisting of calcium carbonate, which forms by seeping or dripping water depositing calcium carbonate out of solution. **Travertine** is the form of limestone, which makes up this type of speleothem. Stalagmites include formations of ice, lava, and other deposited cave minerals.

STATION. *n.* A main survey reference point, usually in a chain of such points used to survey a cave or surface feature.

STRAW. *n.* A hollow, thin-walled tubular stalactite, uniform in diameter over its whole length. Usually less than 1 cm in diameter. Also called soda straw. Cf. **speleothem**.

TRAVERTINE. *n.* A form of dense, closely compacted limestone consisting mainly of banded layers. It is often colored white or cream and consists mostly of calcium carbonate (CaCO₃), which is deposited from spring, river, or lake water. Cf. tufa.

TWILIGHT ZONE. *n.* The outer part of a cave where daylight penetrates and gradually diminishes to zero light, i.e., **dark zone**.

APPENDIX B: DESCRIPTIONS OF “NEW” CERAMIC TYPES

This section describes the “new” ceramic types identified in the Grieta Principal and Grieta Rincón. These ceramic types are characterized by two distinct pastes, each with three varieties of differing surface treatments (Unnamed types 100037 – 100039 and Unnamed types 100040 – 100042). Thus six additional numeric codes were assigned during ceramic analysis as “Unnamed/Undetermined,” namely numbers 100037 through 100042. The six-digit number (CR#) signifies the unique ceramic number assigned to sherds of the same type within a lot. They are described in detail here because no comparable materials have been identified from the excavations of the structures at Aguateca (Takeshi Inomata, personal communication, 2005). Similar specimens were pointed out by James Brady from the Dos Pilas cave assemblages, as noted below, and I had the opportunity to examine them briefly. The fact that these ceramics were found in subterranean contexts suggests that either, they are exclusive specimens to cave assemblages, or they simply have not been identified in the surface site assemblage due to poor preservation. I am inclined to the latter.

Another related issue is the relationship of these “new” types and Infierno Black and Saxche-Palmar Polychrome types, in terms of typological classification. Because of the focus on surface treatment in type-variety analysis, if the surfaces of the sherds are not well preserved (such as the white slips discussed below), then they are likely to be classified differently. I suspect that many sherds have been classified as Infierno Black or Carmelita Incised, if the white slip had eroded away and the smudged interior surface was the only guiding characteristic. Ceramics that are included in the Infierno Group are noted for their wide variety in paste composition (Foias 1996:533), and it is likely that the types presented here are subsumed under the Infierno Group. Likewise, some sherds may have been classified as Saxche-Palmar Polychromes, even if their polychrome slips did not preserve. This may be the case particularly for the Unnamed types

100040, 100041, and 100042, since the hard, white slip tends to preserve better than the other three Unnamed types. It is also possible that the white slipped sherds may represent the under slip or base slip that is often the background to polychrome painted pottery. Indeed, a couple of sherds did show red paint on the exterior on top of the white slip. Similarities may exist with the stuccoed vessels referred to in the Petexbatun sample as “Unnamed Late Classic Stuccoed” because Foias (1996:534, 582) notes that these sherds had polished black surfaces resembling Infierno Black types.

In the end, I maintained separate “types” due to their distinct pastes from the more common pastes of the Saxche-Palmar Polychrome types at Aguateca. It should also be noted that these six new “types” were identified only part way through the ceramic analysis, so it is likely there are more examples in the *grieta* assemblage that have been overlooked and subsumed into other types.

The soft, orange paste of the Unnamed types 100037 – 100039 resembles that of the Sotero Group in the Belize Valley (cf. Gifford 1976-214). The smudged surfaces also may be found in this ceramic group as well as the smoothed and burnished surfaces, velvety to the touch. The unnamed types in question may relate to the Infierno Group, as oftentimes the black surfaces of the latter are in fact smudged and not slipped (Foias 1996:533).

Both Unnamed types 100037 – 100039 and Unnamed types 100040 - 100042 seem to find stylistic and technological parallels in the Polished Black/Brown tradition at Copan (Foias 1996:217-226; Viel 1993:129; Willey, et al. 1994:36-39), though I am not necessarily suggesting a direct connection with the pottery there. The surface color of the Polished Black/Brown tradition produced by a reduced firing atmosphere in addition to decorative conventions correspond to the Infierno Group as noted by Bill (1997:294). Some level of affiliation with the Sotero Group is also mentioned (Bill 1997:296).

Temporal placement of the six “new” types described below may be placed in the Late Classic period (ca. AD 600 – 800), based on contextual information from the excavated lots and comparisons with similar types from other sites. All the sherds identified as these Unnamed types were found in Late Classic contexts in the Grieta Principal. The Infierno Group ceramics are found throughout the Nacimiento phase, AD 600 – 830 (Foias 1996:433, 532-557). Of the ceramic types of Copan, the Surlo Orange-brown type: Blanco variety with the dark brown to black smudged surfaces dates to the Early Coner phase and Acbi/Coner Transition, AD 600 – 700 (Bill 1997:217-226, 262-265), and the Calamar Group dates to the Late Acbi to Acbi/Coner Transition, AD 500 – 650 (Bill 1997:243-245). The Sotero Group of the Belize Valley dates to the Tiger Run phase, AD 600 – 700 (Gifford 1976:210-214). The Cueva de Sangre ceramics referenced here probably date to the Late Classic (James Brady, personal communication, 2005).

Type: Unnamed (Ceramic code: 100037).

Total frequency of sherds: 29.

Provenience: Op.AG31A, Lot 9-2-1; Op.AG31B, Lots 6-3-1, 6-3-3, 6-4-1, 6-5-4, 14-2-2;

Op.AG31D, Lot 2-2-1.

Identifying attributes: Soft, orange paste with smudged interior; unslipped but burnished exterior.

Paste and firing: Soft, orange paste (5YR 6/6, 2.5YR 6/6, 2.5YR 5/8) is usually incompletely oxidized with a wide, gray core, though some are completely oxidized and have no core.

Paste texture is very fine with ash and calcite temper.

Surface finish and Decoration: Vessel interior is smudged dark brown to black, while exterior is unslipped and burnished. Vertical or diagonal fluting can occur on exterior as well as incised designs.

Forms and Dimensions: Mostly open forms, such as outflaring bowls and possibly vases One rim

sherd with vertical fluting represents a closed bowl (**Figure B.1a**).

Intersite References: Surface treatment as well as vessel forms resembles the type Sotero

Red-brown, in particular the Orange variety (Gifford 1976:210-211). The incised and fluted sherds may parallel Orange-walk Incised and Silkgrass Fluted types.

Illustrations: Figure B.1.

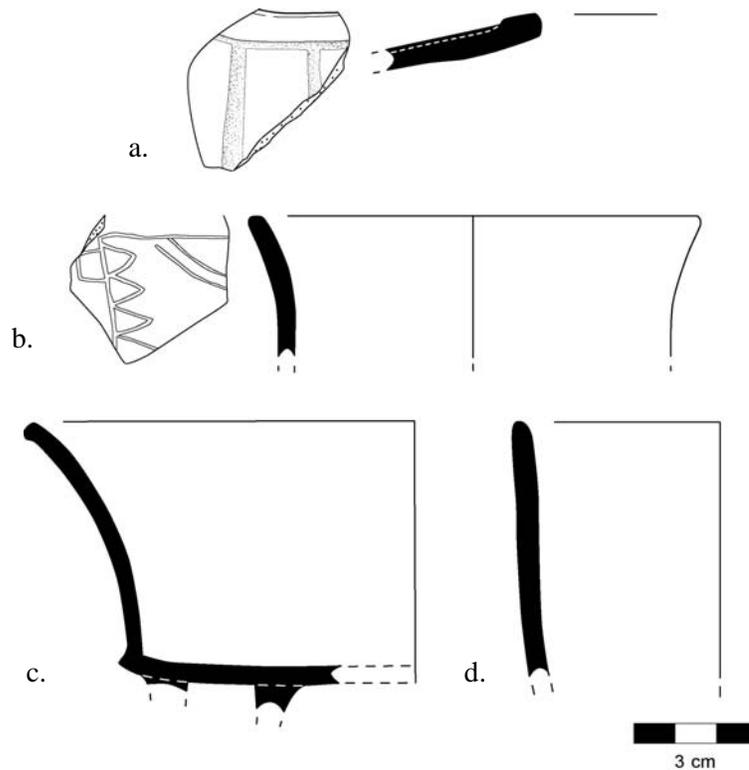


Figure B.1. Line drawings of sherds of Unnamed type (Ceramic code: 100037). a. closed bowl (AG31B-6-3-3, CR#804322); b. bowl with outflaring rim (AG31D-2-2-1, CR#905666); c. bowl with outflaring sides and hollow feet (AG31A-9-2-1, CR#905700, 905701); d. bowl or vase with vertical sides (AG31A-9-2-1, CR#905702).

Type: Unnamed (Ceramic code: 100038).

Total frequency of sherds: 113.

Provenience: Op.AG31A, Lots 9-2-1, 11-2-1; Op.AG31B, Lots 6-3-1, 6-4-1, 6-5-1, 6-6-1,

6-7-2, 6-8-2, 12-1-1, 13-1-1, 14-2-1, 14-2-2; Op.AG31D, Lots 1-3-1, 1-4-1, 1-5-2, 1-6-1,

2-2-1, 4-2-1, 5-2-2; Op.AG31E, Lots 1-2-1, 1-3-1, 1-3-2.

Identifying attributes: Soft, orange paste with smudged interior; white slip on exterior.

Paste and firing: Soft, orange paste (5YR 5/6 - 7/6, 7/8, 2.5YR 5/8, 6/8, 7/6) is usually not completely oxidized with a wide, black (occasionally gray) core, though some are completely oxidized and have no core. Paste texture is very fine with ash temper; some also have calcite with occasional hematite.

Surface finish and Decoration: Vessel interior is smudged brown to dark brown with some burnishing and feels velvety, and on some sherds has white slip. On two conjoining sherds of a plate with a flat base and nubbin feet (Op.31B, Lot 12-1-1, CR# 905682), a thick (2.5 mm) white, stucco-like material adheres over the dark brown, smudged interior surface while the exterior has remnants of the same material. I suspect this white material is not due to calcification from the cave environment. Exterior has thin, matte, white slip. On sherds of a plate with a basal angle, under the very thin and eroded white slip, faint gray or dark blue lines can be seen depicting a scroll form and linear designs (Op.31B, Lot 12-1-1, CR# 905682). Well-smoothed on all sides, and overall are well made vessels.

Forms and Dimensions: Both open and closed forms occur. Open forms include a variety of bowls, such as round-sided bowls, bowls with outflaring sides (2 rims measure about 15 cm in diameter), bowls with vertical walls (rim diameter 17 cm), and one partially complete, hemispherical tripod bowl with hollow bulbous feet (rim diameter 12 cm). Bowls or possibly plates with basal angle occur. Vases with vertical walls are also represented in the sample. Closed forms consist of tecomate-like bowls (only one sherd large enough to measure rim diameter, 11 cm) and a narrow-necked jar. (rim diameter 10 cm). There are two partial and one nearly complete bowls (**Figures B.4, B.5**).

Intersite References: Similar surface treatment may be seen in the Surlo Orange-brown type:

Blanco variety of Copan (Polished Black/Brown tradition), which is characterized by a white slipped exterior and interior surfaces whose color differs depending on the time period (dark brown to black in the Early Coner phase and Acbi/Coner Transition, AD 600 – 700; light orange to tan in the Late Coner phase, AD 800 – 900) (Bill 1997:217-226, 262-265). The paste of the grieta specimens is very fine whereas the Surlo sherds are mostly medium to coarse-textured. See also Viel (1993:103, 129) and Willey et al. (1994:36-39). The smudged surface and velvety feel of the smoothed surface resembles the surface treatment of Sotero Red-brown type sherds, though no white slip is mentioned in the Barton Ramie sample (Gifford 1976:210-211).

Illustrations and Photos: Figures B.3, B.4, B.5.

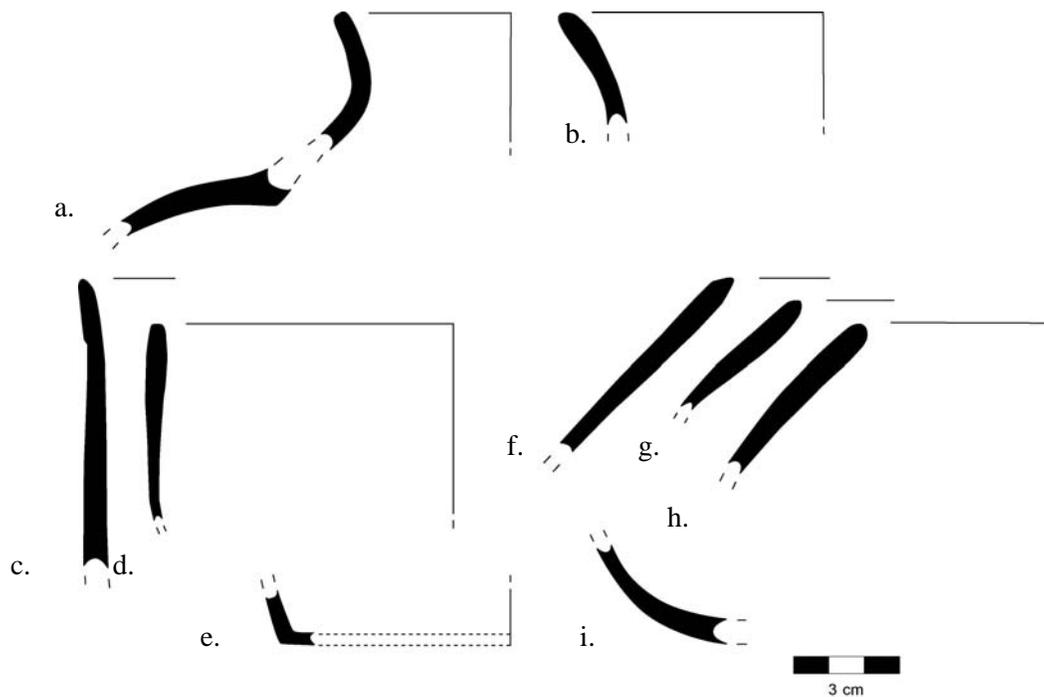


Figure B.3. Line drawings of sherds of Unnamed type (Ceramic code: 100038): a. jar; b. outflaring bowl or vase; c. vase or bowl (orientation approximate); d. bowl; e. flat base; f-h. closed bowl; i. rounded base. (a. AG31B-14-2-1, CR# 905431/905623; b. b, g, i. AG31B-14-2-1, CR#905733; c. AG31D-5-2-2, 905614; d. AG31D-1-3-1, CR#906034; e. AG31B-6-8-2, CR#804531; f. AG31E-1-2-1, CR#905927; h. AG31B-6-5-1, CR#804456).

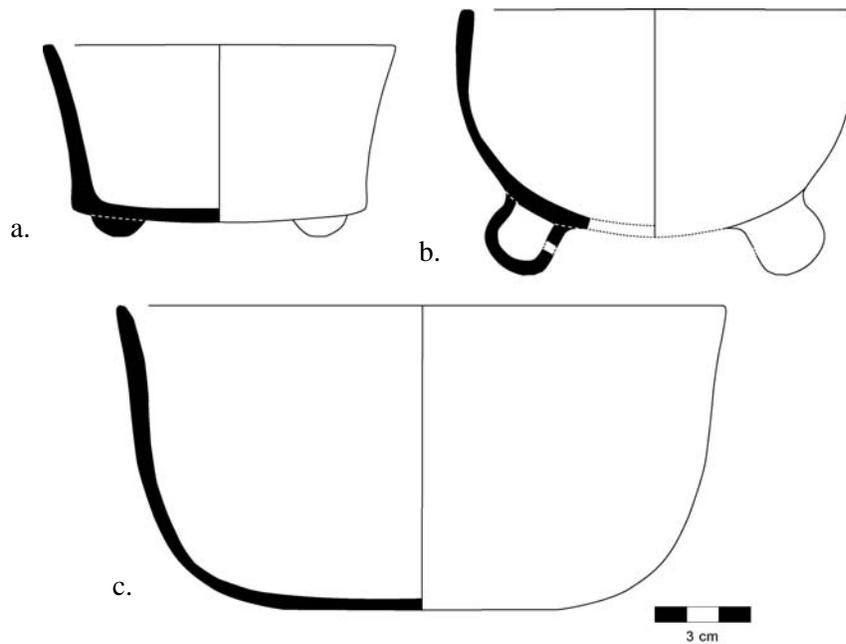


Figure B.4. Line drawings of complete or partial vessels of Unnamed type (Ceramic code: 100038): a. tripod bowl with outflaring sides (95 % of vessel), rim diameter 11 cm, AG31D-1-5-2, CR#804888; b. tripod bowl with rounded base (1/3 of vessel), rim diameter 12 cm, AG31D-1-6-1, CR#804887; c. bowl with flat base and slightly outflaring sides (60 % of vessel), rim diameter 19 cm, AG31A-9-2-1, CR#905355.



Figure B.5. Photo of Unnamed type (Ceramic code: 100038): tripod bowl with outflaring sides (95 % of vessel), AG31D-1-5-2, CR#804888. Line drawing in Figure B.4a.

Type: Unnamed (Ceramic code: 100039).

Total frequency of sherds: 15.

Provenience: Op.AG31B, Lots 6-4-2, 12-1-1, 14-2-1, 14-2-2, 15-0-1; Op.AG31D, Lots 1-4-1, 2-2-1 (probably same vessel).

Identifying attributes: Orange paste with smudged interior; white-slipped exterior with incisions.

Paste and firing: Orange paste (2.5YR 5/6, 6/6, 5YR 5/8) is usually not completely oxidized with a wide, gray or black core, though some are completely oxidized and have no core. Paste texture is fine to very fine with ash temper; some have calcite as well. The paste is noticeably harder than that of 100037 and 100038.

Surface finish and Decoration: Vessel interior is smudged brown to black and is burnished well so that some are velvety to the touch. The exterior has a hard but thin white slip that generally is better preserved than in 100038. Post-fire incisions of linear and curvilinear forms occur on exterior surfaces. Noteworthy is a red-rimmed (specular hematite?) bowl sherd (rim diameter unknown) that shows an incised image of a monkey below an incised line on the rim exterior that defines the extent of the red paint, through which the white slip can be seen (**Figure B.5a**). The post-fire incisions are rather crudely executed over the white slip. Similar vessel forms with incised monkey designs are reported on Corozal Incised type and Carmelita Incised type vessels in the Petexbatun (Foiás 1996:Figure 6.47a, b). A restored vessel referred to as “Unnamed Red-on-Brown Dichrome” at Seibal parallels the grieta specimen without the white slip (Sabloff 1975:151, Figure 285). Also of interest are two sherds found in distinct areas of Chill Hill that are probably from the same vase (Op.AG31D, Lots 2-2-1, 1-4-1; CR#s 905064, 804744) (**Figure B.5d**).

Forms and Dimensions: The small sample contains only open forms consisting of outcurving bowls or plates. Two sherds of bowls or plates have basal angles. On one vase or bowl,

whose sherds were found in two locales as mentioned above, the upper surface of the vessel exterior is chamfered, its profile a lazy “Z” form. On the uppermost chamfered band under the rim, there are two rows of circular incisions, and the following three chamfered band each has a row of inverted V-shaped incisions or impressions that do not go through the white slip (**Figure B.5d**). Dimensions are noted in the figure caption (**Figure B.5**).

Intersite References: Some sherds from Cueva de Sangre near Dos Pilas resemble this type in paste color, texture, and surface treatment.

Illustrations and Photos: Figures B.5.

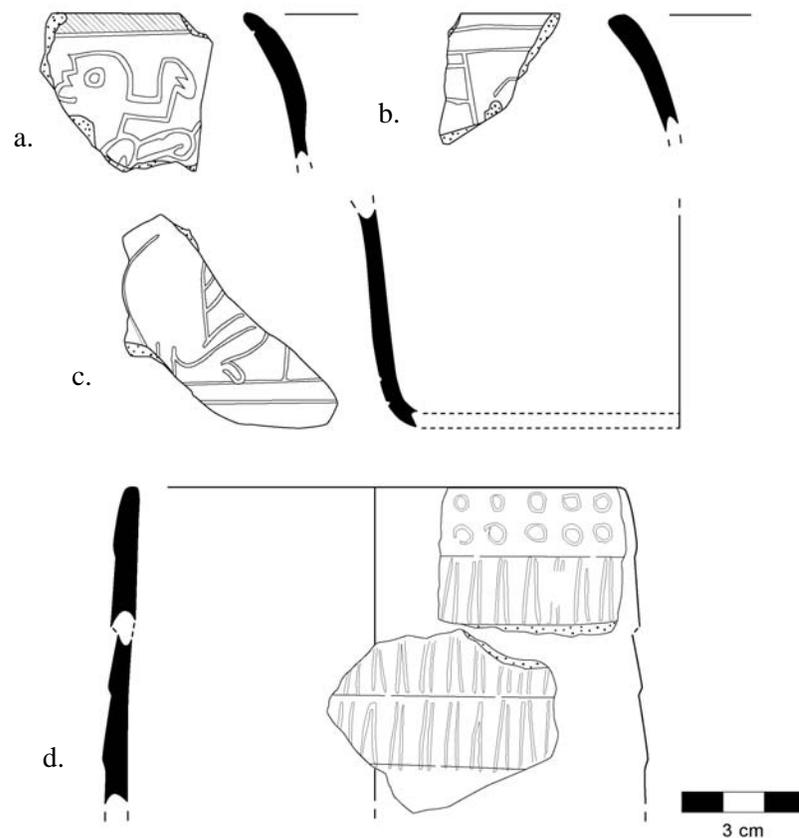


Figure B.5. Line drawings of sherds of Unnamed type (Ceramic code: 100039): a-b. outflaring bowl or plate (rim diameters unknown); c. slightly outflaring bowl with flat base (base diameter 13 cm); d. bowl or vase with vertical walls (rim diameter 12 cm). (a. AG31B-14-2-1, CR#905618; b-c. AG31B-14-2-2, CR#905435, 905434; d. AG31D-1-4-1 and AG31D-2-2-1, CR#804744 & 905064).

Type: Unnamed (Ceramic code: 100040).

Total frequency of sherds: 3.

Provenience: Op.AG31B, Lot 14-2-1.

Identifying attributes: Thin, white slip on exterior and interior. Well-oxidized, hard, light brown paste.

Paste and firing: Hard, light brown paste (7.5YR 7/4) that is completely oxidized and has no core. Fine to medium-fine texture with calcite temper; one sherd also has sand or quartz.

Surface finish and Decoration: Thin, white slip on both interior and exterior, though one sherd interior shows only burnishing. Interior slip is thinner or more eroded. One sherd may have white geometric design (resist technique?) on a white background.

Forms and Dimensions: 1 basal sherd represents a flat based, open bowl. Base diameter unknown.

Intersite References: Surface treatment and general paste characteristics (i.e., fine to very fine texture, hard compact paste) may be similar to Calamar Cream type: Calamar Variety (Polished Black/Brown tradition) at Copan (Late Acbi to Acbi/Coner Transition, AD 500 – 650) (Bill 1997:243-245).

Illustrations: None.

Type: Unnamed (Ceramic code: 100041).

Total frequency of sherds: 28.

Provenience: Op.AG31B, Lot 6-1-2, 6-3-1, 6-4-1, 11-1-1, 14-2-2; Op.AG31D, Lots 2-2-1, 4-1-1, 4-2-1, 4-2-2, 5-2-3.

Identifying attributes: Smudged vessel interior, and glossy, white slip on exterior. Well-oxidized, hard, light brown to pinkish brown paste. Mostly open outflaring bowls or vases, some with

tripod nubbin supports.

Paste and firing: Hard, light brown to pinkish brown paste (7.5YR 5/3, 6/3, 7/3, 7/4, 8/3, 5YR 6/4, 6/6, 7/4, 7/6, 10YR 7/2, 2.5YR 5/6) that is generally completely oxidized without a core. A few sherds show wide, gray or black cores. Very fine to fine, occasionally medium-fine, texture with numerous white calcite temper. One sherd has ash, and another contains hematitic inclusions and calcite. At least one sherd has poorly sorted calcite inclusions.

Surface finish and Decoration: Glossy, white, thin slip on exterior. Exterior surface resembles a Peten Gloss ware. Interior is smudged to a brown or black color, and the degree of burnishing varies. One sherd may have a painted curvilinear decoration in white on the exterior, though this may simply be due to differential preservation of the slip (Op.AG31D, Lot 4-1-1, CR# 905013).

Forms and Dimensions: 6 rims represent bowls (the form of 1 cannot be identified): 1 tecomate-like bowl (rim diameter = 9 cm); 1 round-sided bowl (rim diameter = 18 cm); 3 outflaring bowls (two rim diameters = 12; rim diameter = 15 cm, base diameter = 12.5 cm, height = 5.3 cm). 4 basal sherds include a flat-based tripod with small, solid supports (base diameter = 11 cm), 2 flat bases (base diameters = 10, 11 cm), and 1 possible ring base (base diameter = approx. 13 cm).

Intersite References: Although they do not have the smudged interior, two specimens from Cueva de Sangre (CS1-8-2, CS1-19-1) near Dos Pilas have a white slipped exterior. The vessel interiors are unslipped, and are characterized by fine, light brown, hard pastes that are completely oxidized. The vessel forms are similar to the Aguateca *grieta* specimens, as both are tripod vessels with small solid nubbin feet: one a slightly outflaring bowl or vase, the latter a hemispherical bowl with a slightly incurving rim (rim diameters approximately 15 – 20 cm). The latter shows faint remnants of red paint, and possibly brown as well, on the

white-slipped surface.

Illustrations and Photos: Figures B.7, B.8.

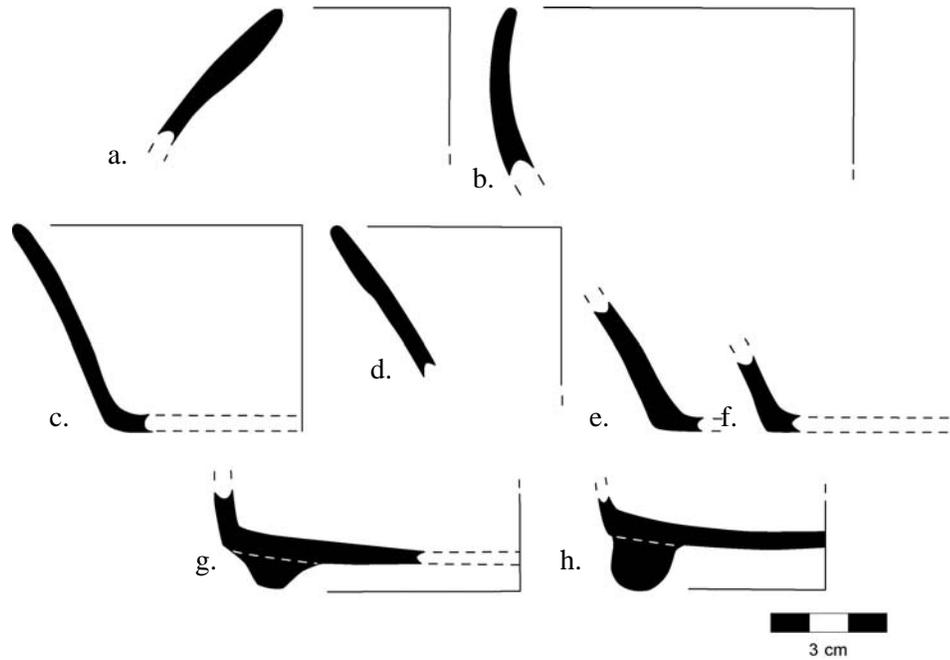


Figure B.7. Line drawings of sherds of Unnamed (Ceramic code: 100041). a. tecomate-like bowl; b. round-sided bowl; c. outflaring bowl; d-f. outflaring bowl; g. tripod bowl or vase; h. tripod bowl or vase. Note g. was identified as an Infierno Black but may have slight remains of white slip on the exterior. (a-b. AG31B-14-2-2, CR# 905429, CR# 905429; c. AG31D-4-1-1, CR# 905013; d-e. AG31B-6-1-2, CR# 804296; f. AG31D-5-2-3, CR# 905668; g. AG31A-10-1-2, CR# 905365; h. AG31D-1-4-1, CR# 804751).



Figure B.8. Photos of Unnamed (Ceramic code: 100041). a-b. interior and exterior views of tecomate-like bowl (AG31B-14-2-2, CR#905429); c-d. interior and exterior views of outflaring bowl (AG31D-4-1-1, CR#905013).

Type: Unnamed (Ceramic code: 100042).

Total frequency of sherds: 12.

Provenience: Op.AG31B, Lots 1-0-1, 6-4-1, 14-2-1, 14-2-2; Op.31D, Lots 1-4-1, 4-2-2.

Identifying attributes: Smudged vessel interior, and glossy, white slip on exterior with incised designs. Well-oxidized, hard, light brown to pinkish brown paste.

Paste and firing: Hard, light brown to orange-brown paste (5YR 7/4, 8/3, 7.5YR 6/4, 7/4, 2.5YR 6/6, 10YR 7/3) that is generally completely oxidized without a core. A couple of sherds show wide, black or gray cores. Fine to medium-fine texture, with numerous white calcite temper. One sherd has ash and another contains hematitic inclusions in addition to calcite. Some have ash as well, and one is exclusively ash-tempered. One sherd has calcite and hematite inclusions.

Surface finish and Decoration: Thin, white or cream slip on exterior, with incisions depicting

linear and curvilinear motifs. The interior is smudged brown to dark brown to black, with some burnishing. Though most of the white slip is eroded away, the slip on one sherd is glossy. Most are pre-fire incisions, but some are post-fire incisions. On one sherd (Op.AG31D, Lot 4-2-2, CR#905669), there is red pigment inside the horizontal incision and faintly on exterior of sherd.

Forms and Dimensions: 4 rims are present: 3 outflaring bowls (rim diameter = 18 cm, 2 of the rim diameters are unknown), 1 cylindrical vase (rim diameter = 15 cm). No basal sherds present.

The body sherds indicate open forms.

Illustrations and Photos: Figure B.9.

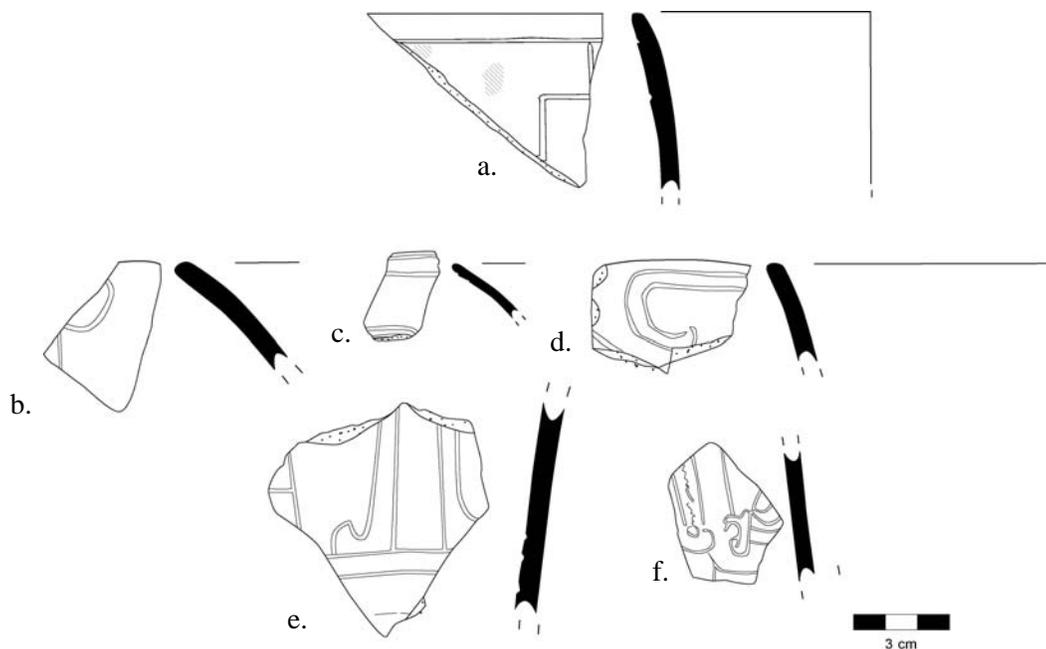


Figure B.9. Unnamed type (Ceramic code: 100042). a. cylindrical vase (AG31D-1-4-1, CR#804746); b-d. outflaring bowls (AG31B-14-2-2, CR#905427); e. vase (AG31B-14-2-1, CR#905630); f. open form (orientation of sherd unknown): (AG31B-14-2-2, CR#905427).

APPENDIX C: EXCAVATED MATERIALS BY LOT

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG30A-1-0-1	VS	101	Sherds
AG30A-1-0-1	BA	118	Faunal material (1)
AG30A-1-0-2	BA	102	Turtle carapace frags (was intact in situ) (7 bones)
AG30A-1-0-3	BA	109	Faunal material (23)
AG30A-2-0-1	VS	103, 112	Sherds
AG30A-2-0-1	LT	105	Chert flake (1)
AG30A-2-0-1	OS	105	Speleothem (1) (originally in LT 105)
AG30A-2-0-1	BA	107, 119	Faunal material (32 bones)
AG30A-2-0-1	OB	117	Blade (1)
AG30A-3-0-1	VS	104	Sherds
AG30A-3-0-1	BA	106	Faunal material (1 bone)
AG30A-3-0-1	OM	108	Burnt clay
AG30A-5-1-1	VS	111	Sherds
AG30A-5-1-1	BA	110	Faunal material (6 bones, 1 shell)
AG30A-5-1-2	VS	115	Sherds
AG30A-5-1-2	BA	113	Faunal material
AG30A-5-1-2	OB	114	Blades, conjoining frags (2)
AG30A-5-2-1	BA	116	Faunal material (4 bones, 2 shell)
AG30B-1-1-1	LT	130	Chert flake (1)
AG30B-1-2-1	VS	131	Sherds
AG30B-1-2-1	BA	132, 164, 192, 194, 197	Faunal material (96 bones, 1 shell)
AG30B-1-2-1	LT	133	Chert flakes (13), uniface (1); pebble (1); quartzite frag (1)
AG30B-1-2-1	MN	163	Mano, almost complete (1)
AG30B-1-2-2	VS	169	Sherds
AG30B-1-2-2	BA	189, 196	Faunal material (20 bones)
AG30B-1-2-2	FG	172	Foot fragment (1)
AG30B-1-2-2	MN	170	Mano, complete (1); mano frags (2)
AG30B-1-2-2	OS	171	Rubbing stone (1)
AG30B-1-2-3	VS	179	Sherds
AG30B-1-2-3	BA	191	Faunal material (8 bones)
AG30B-1-2-3	LT	186	Chert flake (1); quartzite fragment (1)
AG30B-1-2-3	MN	180	Mano frag (1)
AG30B-1		n/a	Interment #43 (see Palomo 2007)
AG30B-2-1-1	VS	152	Sherds
AG30B-2-1-1	BA	153	Faunal material (34 bones)
AG30B-2-1-1	FG	188	Flute frag (1)
AG30B-2-1-1	HB	154	(see Palomo 2007)
AG30B-4-1-1	VS	101	Sherds
AG30B-4-1-1	BA	129	Faunal material (3 bones)
AG30B-4-2-1	VS	106	Sherds
AG30B-4-2-1	BA	161	Carved bone plaque of serpent
AG30B-4-2-1	BA	116, 156, 187	Faunal material (348 bones, 2 shell)
AG30B-4-2-1	HB	123, 134	(see Palomo 2007)
AG30B-4-2-1	LT	105	Chert flakes (27)

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG30B-4-2-1	OB	162	Prismatic blade, complete (1)
AG30B-4-2-2	VS	107	Sherds
AG30B-4-2-2	BA	102	Faunal material (15 bones)
AG30B-4-2-2	HB	103	(see Palomo 2007)
AG30B-4-2-2	LT	104	Chert flakes (3)
AG30B-4-2-2	OA	200	Reworked sherd disk with central perforation (spindle whorl)
AG30B-4-2-3	VS	108	Sherds
AG30B-4-2-3	BA	110	Faunal material (3 bones)
AG30B-4-2-3	MT	111	Metate frag (1)
AG30B-4-2-4	VS	115	Sherds
AG30B-4-2-4	BA	114	Faunal material (1 bone)
AG30B-4-2-4	HB	113	(see Palomo 2007)
AG30B-4-2-4	LT	112	Chert flake (1)
AG30B-4-2-5	VS	118	Sherds
AG30B-4-2-5	BA	122, 190	Faunal material (20 bones, 1 shell)
AG30B-4-2-5	FG	120	Anthropomorphic head, half of face burnt (1)
AG30B-4-2-5	HB	117	(see Palomo 2007)
AG30B-4-2-5	LT	119	Chert flakes (3)
AG30B-4-2-5	OS	121	Hammerstone (1)
AG30B-4-2-6	VS	124	Sherds
AG30B-4-2-6	BA	125	Faunal material (3 bones)
AG30B-4-2-6	HB	127	(see Palomo 2007)
AG30B-4-2-6	LT	126	Chert flakes (10), chert core (1)
AG30B-4-2-6	OS	128	Hammerstone (1)
AG30B-4-2-7	VS	135	Sherds
AG30B-4-2-7	FG	136	Anthropomorphic head, defaced (1)
AG30B-4-2-8	VS	141	Sherds
AG30B-4-2-8	BA	138	Faunal material (5 bones)
AG30B-4-2-8	FG	139	Whistle of old man (1)
AG30B-4-2-8	HB	137	(see Palomo 2007)
AG30B-4-2-8	LT	140	Chert point frag (unidentified knife) (1), chert flakes (2)
AG30B-4-2-9	VS	142	Sherds
AG30B-4-2-9	HB	144	(see Palomo 2007)
AG30B-4-2-9	LT	145	Chert flakes (4)
AG30B-4-2-9	MN	146	Mano frag (1)
AG30B-4-2-9	OB	143	Prismatic blade frag (1)
AG30B-4-2-10	VS	147	Sherds
AG30B-4-2-10	BA	148	Perforated (?) shell
AG30B-4-2-10	BA	195	Faunal material (2 bones)
AG30B-4-2-10	HB	151	(see Palomo 2007)
AG30B-4-2-10	LT	149	Chert flakes (4)
AG30B-4-2-10	MN	150	Mano frag (1)
AG30B-4-2-11	VS	158	Sherds
AG30B-4-2-11	HB	157	(see Palomo 2007)
AG30B-4-2-11	LT	159	Chert flakes (2)
AG30B-4-2-11	OB	160	Prismatic blade frag (1)
AG30B-4-2-12	VS	167	Sherds
AG30B-4-2-12	BA	173, 193	Faunal material (8 bones)
AG30B-4-2-13	VS	168	Sherds
AG30B-4-2-13	BA	165	Faunal material (1 shell)

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG30B-4-2-14	VS	178	Sherds
AG30B-4-2-14	BA	175	Faunal material (9 bones)
AG30B-4-2-14	HB	174	(see Palomo 2007)
AG30B-4-2-14	LT	176	Chert biface frag (1)
AG30B-4-2-15	VS	181	Sherds
AG30B-4-2-16	VS	182	Sherds
AG30B-4-2-16	BA	183	Bone needle frag (1); faunal material (145 bones, 1 shell)
AG30B-4-2-16	LT	185	Chert flakes (2)
AG30B-4-2-16	OB	184	Prismatic blade, almost complete (1)
AG30C-1-0-1	VS	101	Sherds (Grieta Pequena 2)
AG31A-1-0-1	VS	101, 200	Sherds
AG31A-1-0-1	OB	102	Blade, distal end, notched (1)
AG31A-1-0-1	BA	189	Faunal material (1 shell)
AG31A-2-0-1	VS	110, 114	Sherds
AG31A-2-0-1	FG	112	Body, hollow (1)
AG31A-2-0-1	BA	113	Faunal material (2 bones)
AG31A-2-0-1	BA	115	Bone disk with central perforation (spindle whorl) frag (1)
AG31A-3-0-1	VS	103, 105	Sherds
AG31A-3-0-1	BA	104	Faunal material (1 bone)
AG31A-4-0-1	VS	109	Sherds
AG31A-4-0-1	BA	108	Faunal material (43 bones)
AG31A-4-0-1	BA	192	O-shaped shell disk (bead?) (1)
AG31A-4-0-1	OA	119	Reworked sherd, double-notched. Rectangular (1)
AG31A-5-0-1	VS	111, 157	Sherds
AG31A-5-0-1	BA	186	Perforated bone disks (spindle whorls) (3: 1 complete, 2 frags)
AG31A-5-0-1	BA	118	Faunal material (1 bone)
AG31A-6-0-1	VS	107, 116	Sherds
AG31A-6-0-1	HB	235	(see Palomo 2007)
AG31A-8-0-1	VS	117	Sherd
AG31A-9-1-2	VS	121	Sherds
AG31A-9-1-2	FG	120	Big hollow head, old man with tongue out (1)
AG31A-9-2-1	VS	122	Sherds
AG31A-9-2-1	OS	135	Speleothem (1)
AG31A-9-2-1	OB	129	Blade frag (1)
AG31A-9-2-1	OA	128	Reworked sherd disk with central perforation, complete (1)
AG31A-9-2-1	MT	126	Metate frag (1)
AG31A-9-2-1	MN	124	Mano frags (2); mano, almost complete (1)
AG31A-9-2-1	LT	123	Chert core (1), chert flakes (12), 1 chert scraper (?), chert drill (?) (1)
AG31A-9-2-1	OS	123	Hammerstone (2) (originally in LT 123)
AG31A-9-2-1	FG	127	Head of person, very eroded, half burnt (?) (1)
AG31A-9-2-1	BA	134, 234, 236	Faunal material (100 bones)
AG31A-10-1-1	LT	229	Chert scraper (1), chert flakes (12)
AG31A-10-1-2	BA	235	Faunal material associated with Interment 48 (4 bones)
AG31A-10-1-2	VS	125	Sherds

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31A-10-2-1	OS	136	River cobbles (3); flowstone (?) (1) (originally in LT 132)
AG31A-10-2-1	OB	133	Blade frags (2), shatter (1)
AG31A-10-2-1	MN	188	Mano, complete (1)
AG31A-10-2-1	LT	132	Chert chopper-pounder, complete (1); chert flakes (5)
AG31A-10-2-1	BA	131	Faunal material (1 bone, 1 shell)
AG31A-10-2-1	VS	130	Sherds
AG31A-11-1-2	VS	174	Sherds
AG31A-11-1-2	HB	173	(see Palomo 2007)
AG31A-11-1-2	BA	175, 208	Rasp (1), faunal material (108 bones)
AG31A-11-2-1	VS	140, 165	Sherds
AG31A-11-2-1	OB	160	Bladefrag (1)
AG31A-11-2-1	ML	194	Limestone spindle whorl (1)
AG31A-11-2-1	LT	162	Chert flake (1)
AG31A-11-2-1	HB	139	(see Palomo 2007)
AG31A-11-2-1	BA	161	Pomacea (3: 2 are perforated, 1 unmodified)
AG31A-11-2-1	BA	193	Awl, complete (1)
AG31A-11-2-2	VS	163	Sherds
AG31A-11-2-3	VS	164	Sherds
AG31A-11-2-4	VS	172	Sherds
AG31A-12-1-1	VS	137	Sherds
AG31A-12-1-1	BA	138	Faunal material (2 bones)
AG31A-12-2-1	VS	141, 148	Sherds
AG31A-12-2-1	OS	144	Chert pestle (1)
AG31A-12-2-1	OB	142	Blade frags (6)
AG31A-12-2-1	MN	145	Mano frag (1)
AG31A-12-2-1	LT	143	Chert flake (1)
AG31A-12-2-1	OS	143	Rubbing stone (1) (originally in LT 143)
AG31A-12-2-1	HB	147	(see Palomo 2007)
AG31A-12-2-1	BA	148	Needle, complete (1)
AG31A-12-2-1	BA	228	Needle, complete (1)
AG31A-12-2-1	BA	146, 148, 230	Faunal material (33 bones, 2 shell)
AG31A-12-2-2	VS	167	Sherds
AG31A-12-2-2	OB	169	Blades, two conjoining fragments (1)
AG31A-12-2-2	OA	166	Reworked sherd disk with central perforation, complete (1)
AG31A-12-2-2	LT	171	Chert general utility biface frag (1), flake (1)
AG31A-12-2-2	BA	170	Unidentified modified bone frag with 9 holes
AG31A-12-2-2	BA	168	Faunal material (34 bones)
AG31A-13-1-1	VS	152	Sherds
AG31A-13-1-1	LT	149	Chert chopper-pounder, hemispherical (1)
AG31A-13-1-1&2	LT	181	Chert flake (1); chert general utility biface, complete (1)
AG31A-13-2-1	VS	153	Sherds
AG31A-13-2-1	HB	154	(see Palomo 2007)
AG31A-13-2-1	BA	231	Faunal material (1 bone)
AG31A-13-3-1	VS	158, 201	Sherds
AG31A-13-3-1	LT	156	Chert flake (1)
AG31A-13-3-1	HB	155	(see Palomo 2007)
AG31A-13-3-1	BA	151	Pin, carved distal frag (1)
AG31A-13-3-1	BA	150	Faunal material (4 bones, 1 shell)
AG31A-13-3-1&2	VS	176	Sherds

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31A-13-3-1&2	BA	187	Faunal material (1 shell)
AG31A-13-3-2	VS	159	Sherds
AG31A-13-3-3	VS	185	Sherds
AG31A-13-3-3	HB	184	(see Palomo 2007)
AG31A-13-3-3	BA	233	Faunal material (4 bones)
AG31A-13-3-4	VS	182	Sherds
AG31A-13-3-4	HB	180	(see Palomo 2007)
AG31A-13-3-4	BA	177	Faunal material (5 bones)
AG31A-13-3-5	VS	179	Sherds
AG31A-13-3-5	HB	183	(see Palomo 2007)
AG31A-13-3-5	BA	178	Faunal material (1 bone)
AG31A-13-3-6	VS	196	Sherds
AG31A-13-3-6	BA	191	Faunal material (2 shell)
AG31A-13-3-7	VS	195	Sherds
AG31A-13-3-8	VS	198	Sherds
AG31A-13-3-8	HB	190	(see Palomo 2007)
AG31A-13-3-9	VS	197	Sherds
AG31A-13-3-10	VS	199	Sherds
AG31A-14-1-1	VS	202	Sherds
AG31A-14-2-1	VS	203	Sherds
AG31A-14-3-1	VS	204	Sherds
AG31A-14-3-1	MN	207	Mano frag (1)
AG31A-14-3-1	LT	206	Chert flakes (conjoin) (3)
AG31A-14-3-1	HB	205	(see Palomo 2007)
AG31A-14-4-1	VS	209	Sherds
AG31A-14-4-1	BA	214	Faunal material (1 shell)
AG31A-14-4-2	VS	210	Sherds
AG31A-14-5-1	VS	213	Sherds
AG31A-14-5-1	OS	221	Speleothem (1)
AG31A-14-5-1	OB	212	Blade frags (3)
AG31A-14-5-1	MN	217	Mano frag (1)
AG31A-14-5-1	LT	216	Quartz/flowstone shatters (2), chert general utility biface (1), chert flakes (2), chert scrapers (2), river cobble (1)
AG31A-14-5-1	FG	211	Head of person, eyes closed, headdress missing (1)
AG31A-14-5-1	BA	220, 232	Freshwater clams with perforation (2), faunal (2 bones, 2 shell)
AG31A-14-5-2	VS	215	Sherds
AG31A-14-5-3	VS	219	Sherds
AG31A-14-5-4	VS	222	Sherds
AG31A-14-5-4	BA	223	Faunal material (1 shell)
AG31A-14-6-1	VS	224	Sherds
AG31A-14-6-1	OS	227	Speleothem (1)
AG31A-14-6-1	BA	226	Faunal material (6 bones)
AG31B-1-0-1	VS	101, 104, 126	Sherds
AG31B-1-0-1	BA	102	Faunal material (3 bones)
AG31B-1-0-1	LT	103	Quartz metate (?) frag (1)
AG31B-1-0-1	HB	380	(see Palomo 2007)
AG31B-1-0-2	VS	106	Sherds associated with Interment 22
AG31B-1-0-2	LT	107	Chert flake (1)
AG31B-1-0-2	FG	189, 372	Cylindrical solid object (1)

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31B-1-0-3	VS	108	Sherds
AG31B-1-0-3	BA	109	Faunal material (7 bones)
AG31B-1-0-4	BA	112	Faunal material (1 bone)
AG31B-2-0-1	VS	113	Sherds
AG31B-2-0-1	BA	114	Faunal material (6 bones)
AG31B-2-0-1	LT	115	Quartz groundstone or core frag (1)
AG31B-3-0-1	VS	118	Sherds
AG31B-3-0-1	BA	117	Faunal material (1 bone)
AG31B-4-0-1	BA	110	Faunal material (1 shell) associated with Interment 23
AG31B-4-0-1	VS	111	Sherds
AG31B-5-0-1	VS	116	Sherds
AG31B-5-0-1	BA	190	Faunal material (1 bone)
AG31B-6-1-1	VS	119, 127	Sherds
AG31B-6-1-1	BA	120, 128	Faunal material (37 bones)
AG31B-6-1-1	LT	129	Chert flake (1); chert chopper-pounder, complete (1)
AG31B-6-1-1	HB	395, 397	(see Palomo 2007)
AG31B-6-1-2	VS	273	Sherds
AG31B-6-1-2	BA	370, 371	Faunal material associated with Interment 24 (4 bones)
AG31B-6-1-3	VS	178, 211	Sherds
AG31B-6-1-3	BA	179	Faunal material (3 bones)
AG31B-6-2-1	VS	131, 213, 221	Sherds
AG31B-6-2-1	BA	132, 219	Faunal material (4 bones)
AG31B-6-2-1	HB	396	(see Palomo 2007)
AG31B-6-2-1	OS	220	River cobble (1)
AG31B-6-2-1	LT	133	Chert flake (1), chert biface frag (1)
AG31B-6-3-1	VS	140, 222	Sherds
AG31B-6-3-1	LT	144	Chert flakes (5)
AG31B-6-3-1	BA	141, 146	Faunal material (6 bones, 2 shell)
AG31B-6-3-1	OA	139	Reworked sherd disk, no perforation (1)
AG31B-6-3-2	VS	181, 212	Sherds
AG31B-6-3-3	FG	283	Appendage (1)
AG31B-6-4-1	VS	143, 152, 158, 223	Sherds
AG31B-6-4-1	OA	281	Reworked sherd disk with notch (1)
AG31B-6-4-1	OB	145	Blade frag, proximal (1)
AG31B-6-4-1	MN	148, 155	Mano, complete (1); mano frag (1)
AG31B-6-4-1	HB	398	(see Palomo 2007)
AG31B-6-4-1	BA	278	Bone tube frag (1)
AG31B-6-4-1	BA	147	Modified bone (1)
AG31B-6-4-1	BA	234, 239, 256	Faunal material (10 bones, 1 shell)
AG31B-6-4-1	LT	153, 159, 224	Chert flakes (7), chert core (1)
AG31B-6-4-2	VS	157	Sherds
AG31B-6-4-2	OB	156	Blade frag, proximal (1)
AG31B-6-4-2	BA	154	Faunal material (3 bones)
AG31B-6-4-2	HB	399	(see Palomo 2007)
AG31B-6-5-1	VS	164, 174, 238	Sherds
AG31B-6-5-1	OB	162	Blade frag, proximal (1)
AG31B-6-5-1	BA	376	Faunal material (3 bones)

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31B-6-5-1	HB	400	(see Palomo 2007)
AG31B-6-5-1	LT	165, 175	Chert flakes (2), chert uniface (1), chert biface frag (1)
AG31B-6-5-1	MT	282	Metate frag (1)
AG31B-6-5-2	VS	176, 207	Sherds
AG31B-6-5-2	BA	177	Faunal material (3 bones)
AG31B-6-5-3	VS	263	Sherds
AG31B-6-6-1	VS	188, 205, 255, 262, 269	Sherds
AG31B-6-6-1	BA	206, 237	Faunal material (15 bones)
AG31B-6-6-1	HB	401	(see Palomo 2007)
AG31B-6-6-1, 6-4-1	MT	214	Metate frag (1)
AG31B-6-6-1	FG	269	Unidentified frags with blue paint (2)
AG31B-6-6-2	VS	208	Sherds
AG31B-6-6-3	BA	403	(see Palomo 2007)
AG31B-6-6-3	FG	231	Unidentified frag (1)
AG31B-6-6-4	VS	236	Sherds (mixed context)
AG31B-6-6-4	BA	235	Faunal material (2 bones) (mixed context)
AG31B-6-7-1	VS	209, 257, 261	Sherds
AG31B-6-7-1	BA	225	Faunal material (9 bones)
AG31B-6-7-1	LT	226	Chert flake (1)
AG31B-6-7-2	VS		Sherds
AG31B-6-7-2	BA	228	Faunal material (3 bones)
AG31B-6-8-1	VS	241	Sherds
AG31B-6-8-1	BA	240	Faunal material (1 bone)
AG31B-6-8-2	VS	229	Sherds
AG31B-7-1-1	VS	121, 125	Sherds
AG31B-7-1-1	BA	122, 124	Faunal material (21 bones)
AG31B-7-1-1	LT	123	Chert flake (1)
AG31B-7-1-2	BA	130	Faunal material (3 bones)
AG31B-7-1-2	HB	381	(see Palomo 2007)
AG31B-7-2-1	VS	137	Sherds
AG31B-7-2-1	BA	138	Faunal material
AG31B-7-2-1	HB	384	(see Palomo 2007)
AG31B-7-2-2	BA	135	Faunal material
AG31B-7-2-2	HB	383	(see Palomo 2007)
AG31B-7-2-3	VS	142	Sherds
AG31B-7-2-4	VS	151, 170, 173, 185	Sherds
AG31B-7-2-4	BA	270	Faunal material (3 bones)
AG31B-7-3-1	VS	136, 187, 191	Sherds
AG31B-7-3-1	BA	134, 271	Faunal material (35 bones)
AG31B-7-3-1	HB	382, 394	(see Palomo 2007)
AG31B-7-3-1	FG	280	Unidentified frag (1)
AG31B-7-4-2	VS	172	Sherds
AG31B-7-4-3	VS	183	Sherds
AG31B-7-4-4	VS	186, 193	Sherds
AG31B-7-4-4	BA	194	Shell finger ring, faunal material
AG31B-7-4-4	OB	192	Blade frag, medial (1)
AG31B-7-4-5	VS	182	Sherds
AG31B-7-4-5	BA	184	Faunal material
AG31B-7-5-1	BA	195	Faunal material

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31B-7-5-1	HB	385	(see Palomo 2007)
AG31B-7-5-2	VS	196	Sherds
AG31B-7-5-2	BA	197, 377	Faunal material (8 bones)
AG31B-7-5-2	HB	386	(see Palomo 2007)
AG31B-7-5-3	VS	198, 268	Sherds
AG31B-7-5-3	OB	201	Blade frags, proximal (2)
AG31B-7-5-3	BA	202	Faunal material
AG31B-7-5-3	HB	387	(see Palomo 2007)
AG31B-7-5-3	LT	n/a	Chert flake (1), quartz frag (1)
AG31B-7-5-4	VS	199, 216, 250	Sherds
AG31B-7-5-4	BA	215, 251, 252, 253, 254	Faunal material (18 bones)
AG31B-7-5-4	BA	246	Bone disk with central perforation (spindle whorl)
AG31B-7-5-4	HB	388, 391, 392, 393	(see Palomo 2007)
AG31B-7-5-4	LT	272	Chert flake (1)
AG31B-7-5-5	VS	217	Sherds
AG31B-7-5-5	BA	218, 265	Faunal material (13 bones)
AG31B-7-5-6	BA	247	Faunal material (1 bone)
AG31B-7-5-6	HB	389	(see Palomo 2007)
AG31B-7-5-7	VS	245	Sherds
AG31B-7-5-7	BA	248, 249	Faunal material (44 bones)
AG31B-7-5-7	HB	390	
AG31B-7-5-8	VS	266	Sherds
AG31B-7-5-8	BA	267	Faunal material (18 bones)
AG31B-7-5-9	BA	264	Faunal material (2 bones)
AG31B-8-1-1	VS	150, 166, 180, 259	Sherds
AG31B-8-1-1	BA	167, 204	Faunal material (1 bone)
AG31B-8-1-1	HB	378, 379	(see Palomo 2007)
AG31B-8-1-1	ML	258	Limestone spindle whorl (1)
AG31B-8-1-2	VS	149, 242	Sherds
AG31B-8-1-2	LT	243	Chert flake (1)
AG31B-8-1-2	OS	243	Speleothem (1) (originally in LT 243)
AG31B-8-1-2	BA	244	Faunal material (22 bones)
AG31B-8-2-1	VS	203, 232	Sherds
AG31B-8-2-1	BA	169, 233, 260	Faunal material (3 bones)
AG31B-8-2-2	OS	171, 277	Speleothem (2)
AG31B-8-2-2	BA	168	Faunal material (1 bone)
AG31B-9-1-1	VS	291	Sherds
AG31B-9-1-1	LT	295	Chert: 1 retouched flake, 1 flake; 1 shale groundstone, 1 limestone w/hole,
AG31B-9-1-1	BA	290	Faunal material (20 bones, 2 shell)
AG31B-9-1-2	VS	328	Sherds
AG31B-9-1-2	OB	330	Blade frag (1)
AG31B-9-1-2	HB	367	(see Palomo 2007)
AG31B-9-1-2	BA	331	Faunal material (23 bones)
AG31B-9-2-1	VS	298	Sherds
AG31B-9-2-1	LT	300	Chert core (?) (1), chert flake (1)
AG31B-9-2-1	BA	299	Modified bone (?) (1), faunal material (11 bones)
AG31B-9-3-1	VS	305	Sherds

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31B-9-3-1	BA	304	Faunal material (2 bones)
AG31B-9-4-1	VS	306	Sherds
AG31B-9-4-1	OS	309	Red pigment (cinnabar?)
AG31B-9-4-1	LT	308	Chert flakes (2), quartz frags (2)
AG31B-9-4-1	BA	307, 310	Faunal material (127 bones, 4 shell)
AG31B-9-5-1	VS	327	Sherds
AG31B-9-5-1	HB	329	(see Palomo 2007)
AG31B-9-5-1	BA	332, 373	Faunal material (22 bones)
AG31B-9-5-2	JD	311	Greenstone pendants (2)
AG31B-9-5-2	BA	377	Faunal material
AG31B-9-5-2	BA	312	Needle (1), perforated animal teeth (2)
AG31B-10-1-1	VS	294	Sherds
AG31B-10-1-1	OB	296	Blade frags (2)
AG31B-10-1-1	OA	302	Reworked sherd with central perforation, notched, complete (1)
AG31B-10-1-1	OA	319	Ceramic bead, spherical (1)
AG31B-10-1-1	HB	318	(see Palomo 2007)
AG31B-10-1-1	FG	301	Head of animal (?), only eyes remain, mouth/nose destroyed (1)
AG31B-10-1-1	BA	292	Faunal material (59 bones, 2 shell)
AG31B-11-1-1	VS	288	Sherds
AG31B-11-1-1	OB	293	Blade frags (3)
AG31B-11-1-1	LT	321	Chert stemmed point, complete (1)
AG31B-11-1-1	JD	344	Hexagonal pyrite mosaic piece (1)
AG31B-11-1-1	HB	368	(see Palomo 2007)
AG31B-11-1-1	BA	303	Carved shell, flower shape (1)
AG31B-11-1-1	BA	313	Needle, complete (1)
AG31B-11-1-1	BA	289	Faunal material (677 bones, 3 shell)
AG31B-11-1-3	VS	333	Sherds
AG31B-11-1-3	OS	343	River cobble (1)
AG31B-11-1-3	OB	342	Blade frag (1)
AG31B-11-1-3	LT	339	Chert flake (1)
AG31B-11-1-3	LT	336	Greenstone celt, complete (1)
AG31B-11-1-3	LT	339, 340	Chert flakes (3), chert point frag (unidentified knife) (1)
AG31B-11-1-3	HB	334	(see Palomo 2007)
AG31B-11-1-3	FG	341	Stick-like object (1), hook-like object (1)
AG31B-11-1-3	BA	335	Needles, complete (2)
AG31B-11-1-3	BA	337	O-shaped shell disk (1), arch shaped carved shell pendant (1), oliva shell tinkler (1)
AG31B-11-1-3	BA	338	Faunal material (145 bones, 2 shell)
AG31B-11-1-3	BA	375	(see Palomo 2007)
AG31B-12-1-1	VS	285	Sherds
AG31B-12-1-1	OS	406	Speleothem, weathered (1)
AG31B-12-1-1	OM	314	Burnt clay in no particular recognizable form
AG31B-12-1-1	OB	284	Blade frags (9), shatter (4)
AG31B-12-1-1	MN	287	Mano frags (4)
AG31B-12-1-1	LT	316	Quartz core or hammerstone (?) (1), chert flakes (5), quartz crystal (1)
AG31B-12-1-1	LT	317	Chert stemmed point, complete (1), chert flake (1)
AG31B-12-1-1	FG	315	Heads of person (2), appendage (1), head of animal (2)
AG31B-12-1-1	FG	346	Body, upper body with shield (1); foot frag (1)

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31B-12-1-1	BA	286	Pin, carved distal frag (1); pin, proximal frag (1); faunal (69 bones, 3 shell)
AG31B-13-1-1	VS	326	Sherds
AG31B-13-1-1	BA	325, 332	Faunal material (84 bones)
AG31B-14-1-1	VS	320	Sherds
AG31B-14-2-1	VS	322, 347, 352, 353, 354, 358	Sherds
AG31B-14-2-1	OS	348	Donut stone frags (3); hammerstone (1); hammerstone/rubbing stone (1); speleothem (1)
AG31B-14-2-1	OB	356	Cores (2), blade frags (5)
AG31B-14-2-1	OA	407, 409	Reworked sherd disk frag, no perforation (1); reworked sherd (mirrorback frag) (1)
AG31B-14-2-1	OA	345	Cylindrical stamp frag (1)
AG31B-14-2-1	MT	351	Metate frags (2: 1 is greenstone)
AG31B-14-2-1	MN	350	Mano frags (10)
AG31B-14-2-1	LT	323	Chert: 1 complete general utility biface; 1 complete chopper-pounder; 1 scraper (?), 1 core, 18 flakes
AG31B-14-2-1	HB	355	(see Palomo 2007)
AG31B-14-2-1	FG	345	Flute (2), whistle (3), body (7), heads of person (6), animal heads (2), unid (6)
AG31B-14-2-1	BA	324, 374	Freshwater claim with 2 holes (1), faunal material (852 bones, 32 shell)
AG31B-14-2-1	BA	349	Spatula frag (1)
AG31B-14-2-1	BA	357	Pin, complete, carved distal end (1), bone tube frag with 2 holes (1); bone tube frag (?) (1); modified bone, unidentified object (1)
AG31B-14-2-2	VS	361	Sherds
AG31B-14-2-2	MN	366	Mano frags (2)
AG31B-14-2-2	LT	362	Chert: 2 complete general utility biface (GUB); 1GUB, proximal end missing
AG31B-14-2-2	HB	364	
AG31B-14-2-2	FG	365	Head of animal (1), part of headdress (3), body (4), unid (2)
AG31B-14-2-2	BA	359	Pin, carved distal end into human hand form (1)
AG31B-14-2-2	BA	360, 363	Modified bone or debitage (6), faunal material (169 bones, 2 shell)
AG31C-1-0-1	VS	111	Sherds
AG31C-1-0-1	BA	112	Faunal material (24 bones)
AG31C-1-0-1	MN	117	Mano frag (1)
AG31C-2-0-1	VS	114	Sherds
AG31C-2-0-1	BA	113, 115, 121	Faunal material (3 bones, 1 shell)
AG31C-3-0-1	VS	105	Sherds
AG31C-3-0-1	BA	103	Faunal material (6 bones)
AG31C-3-0-1	OA	104	Reworked sherd disk with notch (1)
AG31C-3-0-2	VS	101, 102	Sherds, complete miniature jar
AG31C-3-0-3	VS	118	Sherds
AG31C-4-0-1	VS	106	Sherds
AG31C-4-0-1	LT	107	Chert flake (1), chert uniface (1)
AG31C-4-0-1	BA	108	Faunal material (16 bones, 1 shell)
AG31C-5-0-1	VS	110, 119	Sherds
AG31C-5-0-1	BA	109, 124	Faunal material (65 bones)
AG31C-6-0-1	VS	116	Sherds
AG31C-7-1-1	VS	138, 148	Sherds

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31C-7-1-1	FG	142	Animal head with hollow eyes, complete (1)
AG31C-7-1-1	BA	143, 149	Faunal material (5 bones)
AG31C-7-1-1	BA	143	Bone tube frag, carved (1)
AG31C-7-1-1	OS	162	Speleothem (1)
AG31C-8-1-1	VS	144, 145, 146	Sherds
AG31C-8-1-1	OB	151	Blade frags (2), flake (1)
AG31C-8-1-1	LT	153	Chert flakes (16)
AG31C-8-1-1	FG	152	Body of woman (?) (1), unidentified form (1)
AG31C-8-1-1	BA	150	Faunal material (167 bones, 2 shell)
AG31C-8-2-1	VS	155	Sherds
AG31C-8-2-1	BA	154, 156	Faunal material (79 bones, 1 shell)
AG31C-8-2-1	OA	160	Perforated sherd, non-discoidal form, fragment (1)
AG31C-9-1-1	VS	141	Sherds
AG31C-9-1-1	OB	129	Blade frags (2 conjoining), core (1)
AG31C-9-1-1	BA	125	Awl (1)
AG31C-9-1-1	BA	131	Solid shell disk (1)
AG13C-10-1-1	VS	128, 135, 140	Sherds
AG13C-10-1-1	OS	134	Speleothems (3)
AG13C-10-1-1	OB	126	Blade frag (1)
AG13C-10-1-1	LT	132	Chert point frag, medial (1), chert flakes (3)
AG13C-10-1-1	BA	130, 133	Faunal material (154 bones, 2 shell)
AG13C-10-1-2	VS	127	Sherds
AG31C-11-1-1	VS	158	Sherds
AG31C-11-1-1	BA	157	Faunal material (420 bones)
AG31D-1-1-1	VS	107	Sherds
AG31D-1-1-2	VS	206	Sherds (mixed context, in backfill dirt)
AG31D-1-2-1	VS	108	Sherds
AG31D-1-2-1	OB	109	Blade frag (1)
AG31D-1-3-1	VS	112	Sherds
AG31D-1-3-1	OB	110	Blade frag (1)
AG31D-1-3-1	FG	111	Body (1), head of person (1)
AG31D-1-3-2	VS	113	Sherds
AG31D-1-3-2	OB	114	Blade frags (4)
AG31D-1-4-1	VS	120	Sherds
AG31D-1-4-1	OB	208	Blade frag (1)
AG31D-1-4-1	LT	118	Chert flake (1)
AG31D-1-4-1	JD	209	White stone vessel sherd, incised w/glyphs & anthropomorphic figure (?)
AG31D-1-4-1	FG	115	Whistle (1), feet (2), triangular column (1), unid frags (7)
AG31D-1-4-1	BA	117	Spatula (?) frag (1)
AG31D-1-4-1	BA	116	Faunal material (1 bone)
AG31D-1-4-2	VS	119	Sherds
AG31D-1-5-1	VS	125	Sherds
AG31D-1-5-1	OB	126	Blade, complete (1); blade frags (10), core (1)
AG31D-1-5-1	OA	132	Reworked sherd disk frag with central perforation, fragment (1)
AG31D-1-5-1	LT	133	Chert: 5 flakes, 1 core (?), 1 general utility biface, 1 point frag (unid knife)
AG31D-1-5-1	HB	129	(see Palomo 2007)
AG31D-1-5-1	FG	127	Head of person (2), human body (3), whistle frag (3), unid frags (6)

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31D-1-5-1	BA	131	Faunal material (1 shell)
AG31D-1-5-1	BA	128	Modified bone or debitage, small piece from 31D-1-4-1 fits (1)
AG31D-1-5-2	VS	130	Sherds
AG31D-1-5-3	VS	134	Sherds
AG31D-1-6-1	VS	140	Sherds
AG31D-1-6-1	OB	137	Blade frags (8), flake (1)
AG31D-1-6-1	MN	141	Mano frag (1)
AG31D-1-6-1	LT	138	Chert point frag , leaf-shaped (1), chert flakes (7)
AG31D-1-6-1	FG	139	Heads (4); whistle, almost complete (1); unid frags (2)
AG31D-1-6-1	BA	142	O-shaped shell disk frag (1), faunal material (8 bones)
AG31D-1-6-1	OA	214	Ceramic, unidentified object, complete (1)
AG31D-1-6-2	VS	143	Sherds
AG31D-1-6-2	OS	144	Hammerstone (1)
AG31D-1-6-2	BA	145	Spatula (?) frag (1)
AG31D-1-7-1	VS	149	Sherds
AG31D-1-7-1	HB	151	(see Palomo 2007)
AG31D-1-7-1	BA	150	Faunal material (1 bone)
AG31D-2-1-1	VS	102	Sherds
AG31D-2-1-1	LT	101	Chert flakes (2), burnt limestone (?) spoon-like object (1), quartz polishing stone (?) (1)
AG31D-2-2-1	VS	106	Sherds
AG31D-2-2-1	OB	121	Blade frag (1), shatter (1)
AG31D-2-2-1	MN	104	Mano frag (1)
AG31D-2-2-1	LT	103	Chert flake (1), quartzite pebble (1)
AG31D-2-2-1	LT	123	Chert point, almost complete (unidentified knife) (1)
AG31D-2-2-1	FG	105	Whistle, almost complete (1); heads (4); body (4); unid frags (6)
AG31D-2-2-1	BA	124	Faunal material (4 bones, 11 shell)
AG31D-2-2-1	BA	122	Spatula (?) frag (1)
AG31D-3-1-1	VS	136	Sherds
AG31D-3-1-1	BA	135	Faunal material (5 bones)
AG31D-4-1-1	VS	146	Sherds
AG31D-4-1-1	OS	194	Donut stone frag (1)
AG31D-4-1-1	LT	164	Chert chopper-pounder, complete (1), chert flake (1)
AG31D-4-1-1	BA	148	Bone tube with hole (1); modified frags or debitage (3)
AG31D-4-1-1	BA	147, 212	Faunal material with 2 burnt bone frags covered in calcite (27 bones)
AG31D-4-2-1	VS	152	Sherds
AG31D-4-2-1	LT	210	Chert general utility biface, complete (1)
AG31D-4-2-1	OS	210	Speleothem (1) (originally in LT 210)
AG31D-4-2-1	FG	165	Body (2)
AG31D-4-2-2	VS	153	Sherds
AG31D-4-2-2	BA	154	Faunal, burnt and calcified, could be same bone as #147 (1 bone)
AG31D-5-2-1	VS	155	Sherds
AG31D-5-2-1	OB	156	Blade frags (2), retouched blade into point (1), flake (1)
AG31D-5-2-1	LT	157	Chert flakes (7), chert scraper (1)
AG31D-5-2-1	FG	158	Whistle (1), multichambered whistle-burnt (1), flute frags (2), unid frags (5)
AG31D-5-2-1	BA	174	Needle frag, distal end (1); pin frag, proximal end (1)
AG31D-5-2-1	BA	174, 207	Faunal material (23 bones)
AG31D-5-2-2	VS	169	Sherds

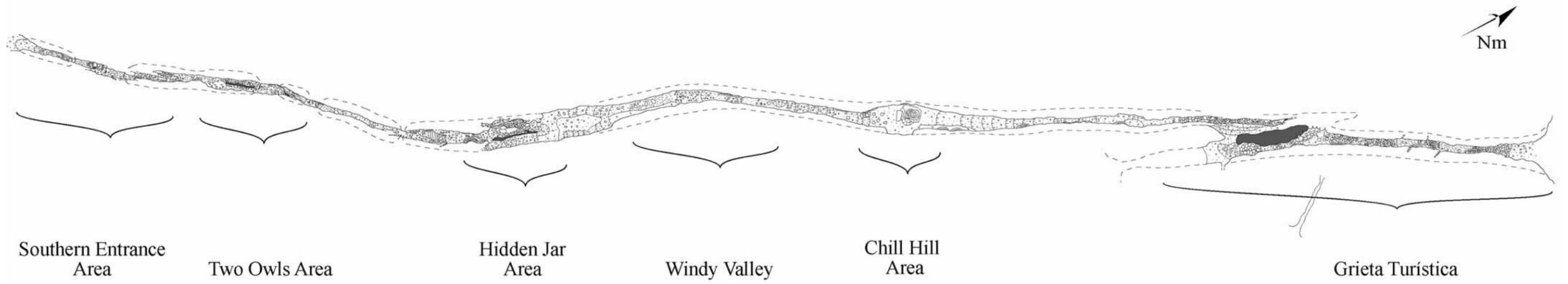
Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31D-5-2-2	OB	173	Blade frags (5)
AG31D-5-2-2	LT	170	Chert flakes (15)
AG31D-5-2-2	MT	170	Metate frag (1) (originally in LT 170)
AG31D-5-2-2	FG	171	Heads (3), Two-chambered flute (1)
AG31D-5-2-3	VS	186	Sherds
AG31D-5-2-3	OB	188	Blade frags (2)
AG31D-5-2-3	LT	187	Pumice (1); Chert: chopper-pounder, complete (1), pestle (1), flakes (7), point frag, medial (1) (original id as OB)
AG31D-5-2-3	HB	191	(see Palomo 2007)
AG31D-5-2-3	FG	189	Head of person(1), flute (1), body (5)
AG31D-5-2-3	BA	192	Rasp, almost complete (1); Needle, complete (1); Spatula, complete (1)
AG31D-5-2-3	BA	190, 213	Faunal material (1 burnt) (1 bone, 1 shell)
AG31D-5-3-1	VS	201	Sherds
AG31D-5-3-1	OB	199	Blade frags (2)
AG31D-5-3-1	LT	200	Chert point frag, medial (1)
AG31D-5-3-1	HB	202	(see Palomo 2007)
AG31D-5-3-1	FG	203	Flute (1), body (2), heads (2), monkey (1)
AG31D-5-3-1	BA	204	Faunal material (1 bone)
AG31D-5-3-2	VS	205	Sherds
AG31D-6-1-1	VS	159	Sherds
AG31D-6-2-1	VS	160	Sherds
AG31D-6-2-1	OB	162	Blade frags (2)
AG31D-6-2-1	LT	163	Chert point frag, medial (1), chert uniface frag (1), chert flake (1)
AG31D-6-2-1	BA	161	Faunal material (4 bones)
AG31D-6-3-1	VS	182	Sherds
AG31D-6-3-1	LT	183	River cobble (1), chert flake (1)
AG31D-6-3-1	FG	184	Head of person (1)
AG31D-7-2-1	VS	179	Sherds
AG31D-7-3-1	VS	181	Sherds
AG31D-7-3-1	BA	180	Faunal material (5 bones)
AG31D-7-4-1	VS	193	Sherds
AG31D-8-0-1	VS	166	Sherds
AG31D-8-0-1	BA	185	Faunal material (2 bones)
AG31D-8-1-1	VS	167	Sherds
AG31D-8-1-1	LT	168	Chert core (1), chert flake (1)
AG31D-8-2-1	VS	176	Sherds
AG31D-8-2-1	OB	175	Blade frags (3)
AG31D-8-2-1	ML	311	Ceramic spindle whorl fragment with incisions (1)
AG31D-8-2-1	HB	177	(see Palomo 2007)
AG31D-9-0-1	VS	196	Sherds
AG31D-9-0-1	OB	198	Blade frags (4)
AG31D-9-0-1	LT	195	Chert flakes (3), quartz crystal (?) (1)
AG31D-9-0-1	FG	197	Body of person (1)
AG31E-1-1-1	VS	102	Sherds
AG31E-1-1-1	BA	101	Faunal material (10 bones)
AG31E-1-2-1	VS	104	Sherds
AG31E-1-2-1	OB	108	Blade frag (1)

Lot No.	Artif type	Artifact Bag No.	Description and Frequency
AG31E-1-2-1	MN	103	Mano frags (2)
AG31E-1-2-1	LT	109	Chert flakes (4), smooth limestone rocks (2)
AG31E-1-2-1	HB	106	(see Palomo 2007)
AG31E-1-2-1	FG	107	Appendage (1)
AG31E-1-2-1	BA	105, 124	Faunal material (2 bones)
AG31E-1-3-1	VS	114	Sherds
AG31E-1-3-1	LT	113	Chert biface frag (1), chert flake (1), quartz/flowstone shatter (1)
AG31E-1-3-1	OS	113	Rubbing stone frag (1) (originally in LT 113)
AG31E-1-3-1	FG	110	Head (2), unidentified frags (2)
AG31E-1-3-1	BA	111, 112	Faunal material (possibly burnt) (2 bones)
AG31E-1-3-1	MN	113	Mano frag (1)
AG31E-1-3-2	VS	115	Sherds
AG31E-1-3-2	LT	116	Quartz crystal frag (1)
AG31E-1-3-2	OS	116	Hammerstone (1) (originally in LT 116)
AG31E-1-3-2	FG	117	Body (1)
AG31E-1-4-3	VS	118	Sherds
AG31E-1-4-3	LT	119	Chert general utility biface frag (1)
AG31E-1-5-1	LT	121	Chert core (1)
AG31E-1-5-1	BA	120	Faunal material (1 bone)
AG31E-1-5-2	VS	122	Sherds
AG31E-1-5-3	OS	123	Rubbing stone frag (1)

APPENDIX D: OVERSIZED MAPS

This section consists of maps of the Grieta Principal, printed on oversized paper. The first map shows the plan and profile of the Grieta Principal, surveyed by Bev Shade, Nick Johnson, Doug Weinberg, and Philip Rykwalder in 2004 and 2005. The maps were drawn by Shade. The second map combines the plan of the Grieta Principal with the Aguateca surface site map, showing spatial correlations between areas of the Grieta Principal and the structures built above. The survey to tie in the *grieta* map to surface structures was conducted by the aforementioned survey crew. The surface site map was traced from both the 1:1000 scale site map produced by the Petexbatun Regional Archaeological Project directed by Arthur Demarest of Vanderbilt University and the map published as part of Takeshi Inomata's dissertation (1995:Figure 2.4). These maps were provided courtesy of the Aguateca Archaeological Project directed by Inomata.

Plan



Southern Entrance Area

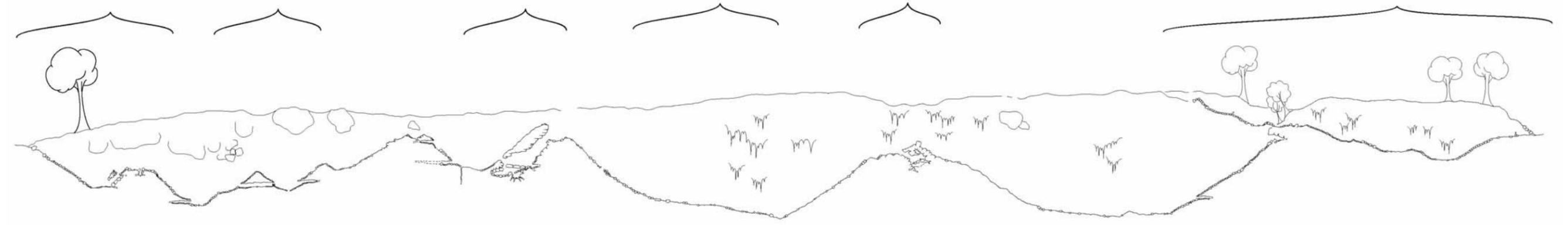
Two Owls Area

Hidden Jar Area

Windy Valley

Chill Hill Area

Grieta Turística



Profile

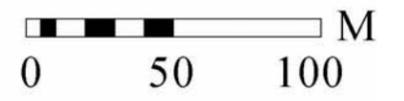


Figure D.1. Plan and profile maps of the Grieta Principal, with the area readily accessible to tourists marked. Dotted lines represent the *grieta* outline on the surface. Survey conducted in June 2004 by Bev Shade, Nick Johnson, Doug Weinberg, and Philip Rykwald; map drawn by Bev Shade.

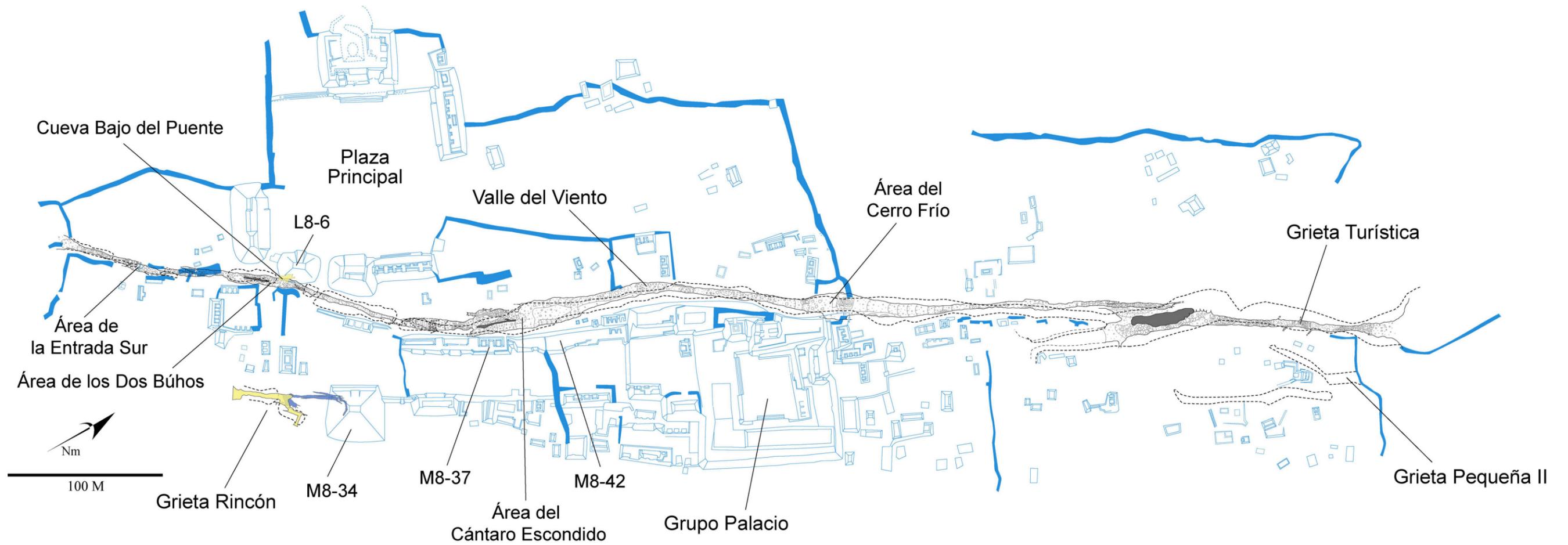


Figure D.2. Plan of the Grieta Principal, showing the spatial relationship with structures on the surface site of Aguateca. The surface site map is courtesy of the Petexbatun Regional Archaeological Project and the Aguateca Archaeological Project. The grieta map was surveyed by Bev Shade, Nick Johnson, Doug Weinberg, and Philip Rykwald, and was drawn by Bev Shade.