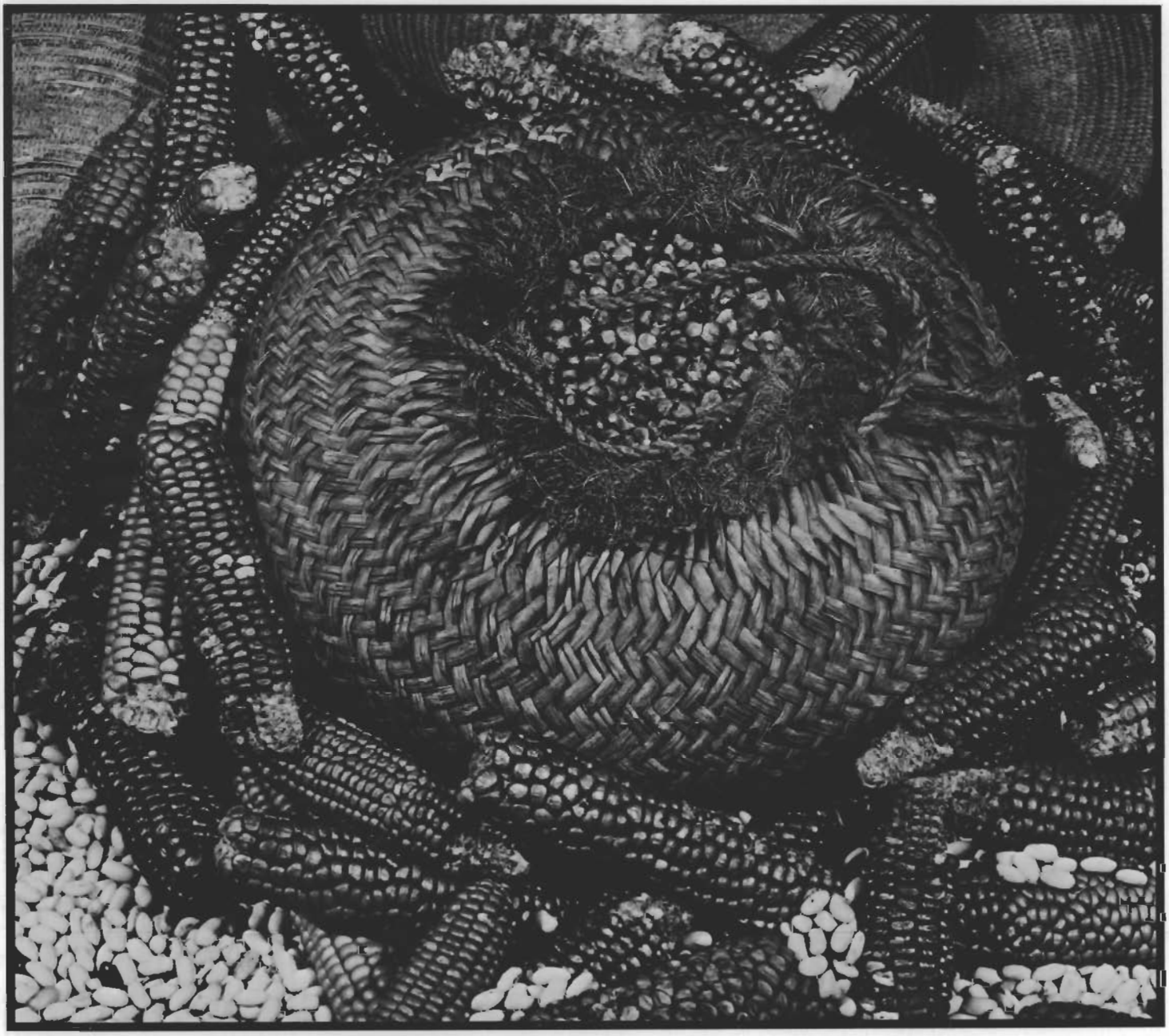
Anasazi BASKETMAKER

Papers from the
1990 Wetherill–Grand Gulch Symposium

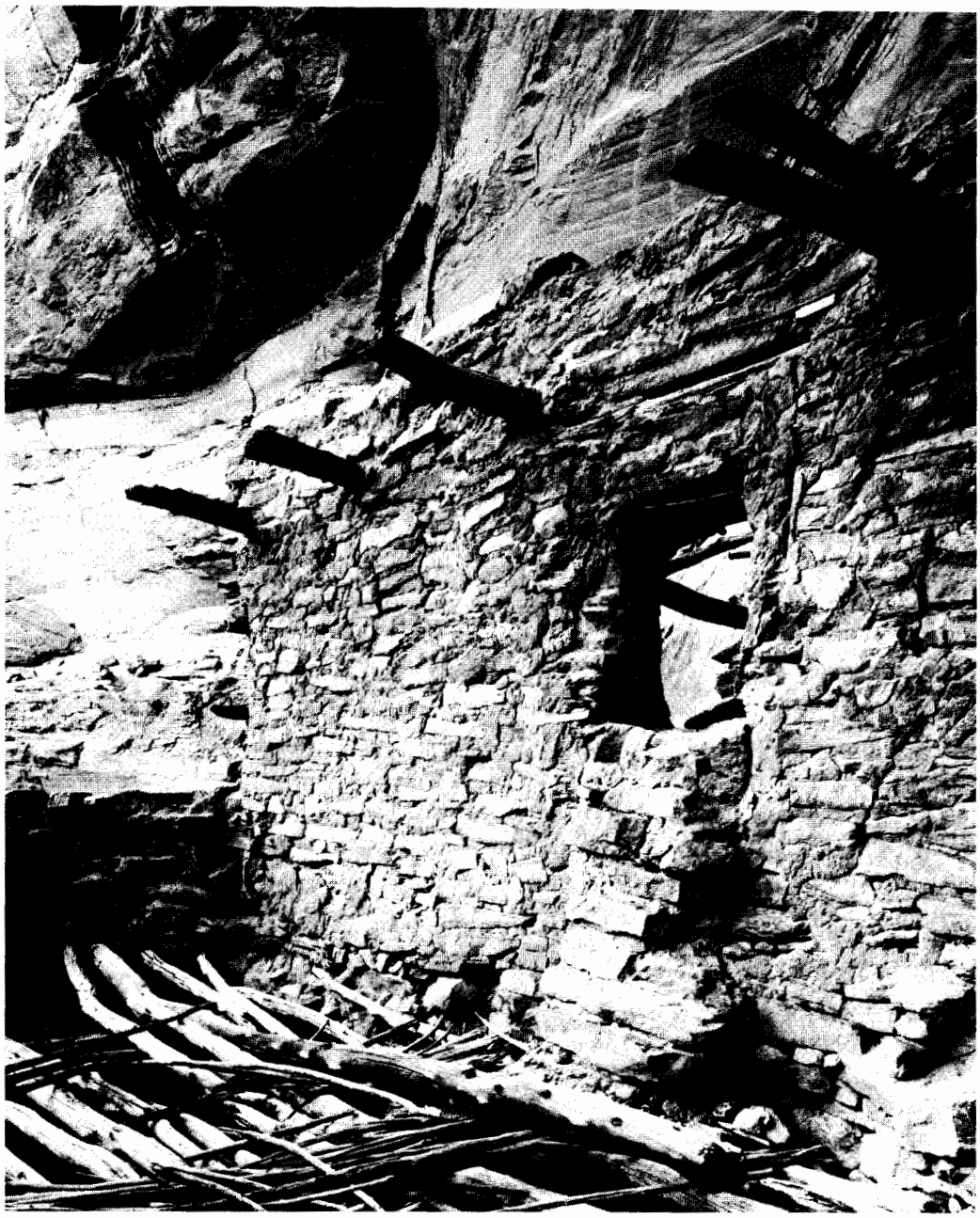


Cultural Resource Series No. 24
Bureau of Land Management, Salt Lake City, Utah

Where did all the artifacts go? Visitors to the Anasazi ruins of the Four Corners often ask that question. The answer is long, complicated and often shrouded in the mists of the past. To find out for themselves, in 1986 a small group of backpackers to southeast Utah's Grand Gulch Primitive area formed the Wetherill–Grand Gulch Project. Combing dusty archives, pouring through faded photographs and expedition notes, and most importantly, examining each archaeological site for evidence of past excavations, they slowly but surely built an impressive story. Over several years, the Project traced artifacts collected over a hundred years ago by the Wetherill family and others to modern museums and linked them back to the recesses and alcoves of the canyons. The papers in this volume reflect the successful results of this process of "reverse archaeology." It also includes complimentary research on Basketmaker material by their professional colleagues.

Anasazi Basketmaker:

Papers from the 1990 Wetherill–Grand Gulch Symposium

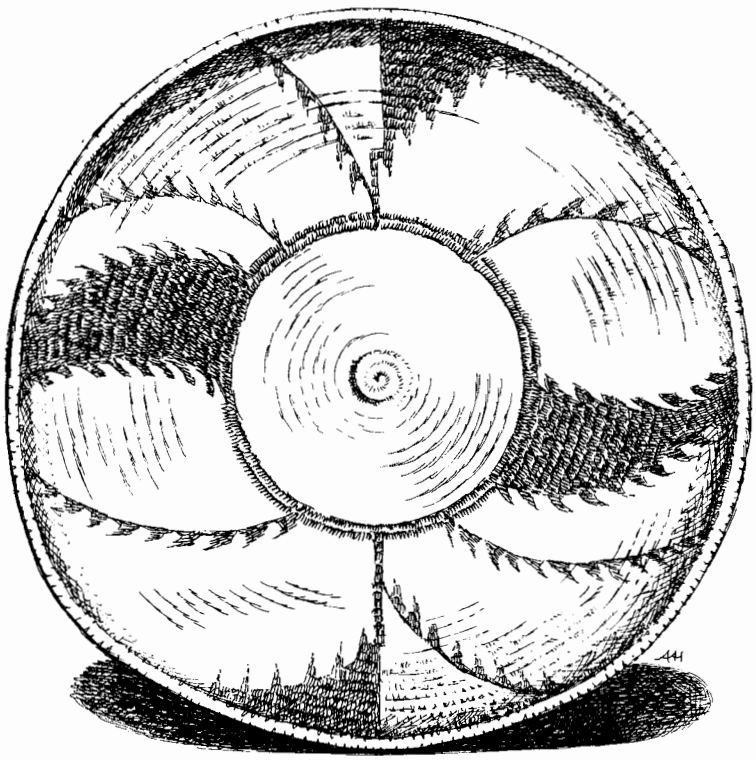


Split-Level Ruin, Grand Gulch, Utah

ANASAZI BASKETMAKER

Papers from the 1990 Wetherill–Grand Gulch Symposium

Edited by Victoria M. Atkins
Designed by Lisa McClanahan



Cultural Resource Series No. 24

United States Department of the Interior
Bureau of Land Management
Salt Lake City, Utah
November 1993

To Richard, Al, Clayton and John, Harry, Jim, Robert and Wirt;
To Charles and Charles, Howard, C.H. and D.W.;
To Charles and Joseph, Franklin and Robert;
To Platt and Don;
To Warren and Lewis;
To Levi and E.C., Clayton and Teddy, George and George,
Charlie, Orian, Marietta and William;
To T. Mitchell and more...
May this book help finish the work you began.

And to the Basketmakers...
"We found your stuff!"

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Photograph (front cover): This herringbone twill plated basket (H-13533) is constructed of whole, narrow-leaf yucca leaves. Originally filled to the brim with red and yellow corn kernals and surrounded by ears of blue corn, the basket is in the form of a seed jar. It was photographed in situ and excavated by the Hyde Exploring Expedition in the winter of 1893-94. From Cave 26 in Grand Gulch, this basket now resides at the American Museum of Natural History in New York. This photograph by Bruce Hucko replicates the original assemblage.

Photograph (back cover): This assemblage of artifacts accompanied the burial of an old Basketmaker man. Collected by McLoyd and Graham in Grand Gulch in the 1890s, the artifacts are now part of the Kunz Collection at the American Museum of Natural History in New York. Artifacts (clockwise from top center) include: coiled basket (H-12274); siltstone tablet with incised cross design (H-12188); apocynum fiber bag (H-12516); wooden crook necked staff (H-12344); wooden stick (H-12254); bone flute (H-12475) [similar to the original]; turkey feather blanket (H-14023); shell disk with central hole (H-12512); and white stone beads (H-12511) with well worn olivella shell necklace (H-12510) in wooden tray. Photograph by Bruce Hucko.

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FOREWORD

Marietta Davenport

The existence of the Basketmakers remained a buried secret until the winter of 1893, when Richard, Al, and John Wetherill, Charles Lang, Harry French and Jim Ethridge kneeled down and peered into the gaping holes at the exposed skeletons in the dust of Cave Seven in First Valley. A great mystery was revealed as the workers, somewhat systematically, dug into the soft soil of this long abandoned shelter and pedestaled the burials as they were uncovered one by one. The skeletons raised many questions and the only answer that Richard felt relatively certain about was that the deeper burials were an older, perhaps even different race of people than the cliff-dwelling ancestral pueblos he had recently come to know.

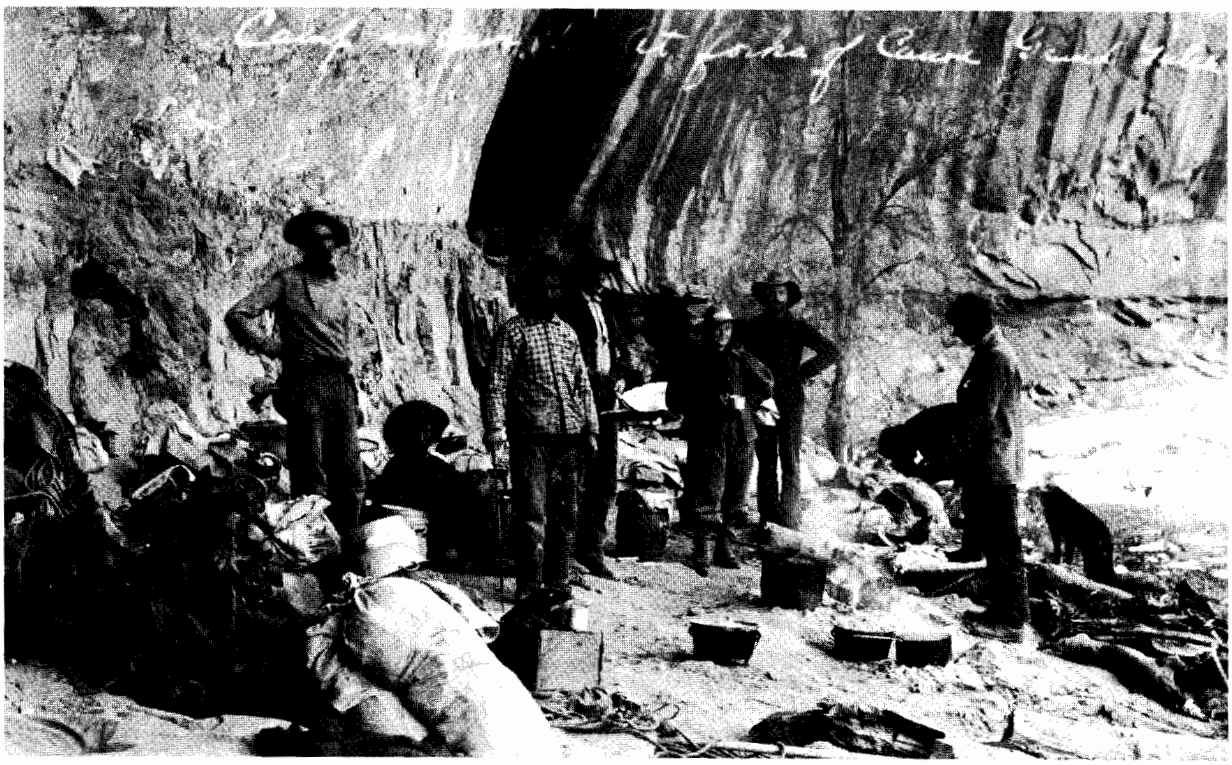
In a letter to his friend Baron Gustav Nordenskiold Richard said "We are making new discoveries having found a people still older than the cliff dwellers who occupied the same caves." Writing to his benefactor, Talbot Hyde, he elaborated further:

Our success has surpassed all expectation. The party is large that I am working, but I am in country that will be snowed under next month so I wanted to get all I could out of it before that time. In the cave we are now working we have taken 28 skeletons and two more in sight and curious to tell... a thing that will surprise the archaeologists of the country is the fact of our finding them at a depth of 5 and 6 feet in a cave in which there are cliff dwellings and we find the bodies under the ruins... They are a different race from anything I have ever seen. They have feather cloth and baskets, no pottery.

Unfortunately, Richard's discoveries were almost immediately dismissed and determined to be little more than the disoriented ramblings of a cowboy con man out to somehow turn a profit by creating, not discovering, an ancient culture. This was the image of Richard, an image that became a legend and haunted him for the remainder of his life.

Thus it has remained a task for subsequent researchers to illuminate the people we call Basketmakers. It was not until the insightful work of A. V. Kidder and Samuel Guernsey in the Tsegi Canyon of Northern Arizona that the existence of the Basketmakers was proven– four years after Richard Wetherill's murder.

The mystery of the Basketmaker culture that was revealed a century ago still tantalizes our curiosity. Over time our knowledge of the Basketmakers has been obscured, but not for lack of interest. Numerous researchers and scholars have devoted their studies to learning more about the Basketmakers. But few have produced reports or publications that are accessible to other researchers, much less to the public at large. Through the efforts of avocational archaeologists who have pooled their skills and determination with professional archaeo-

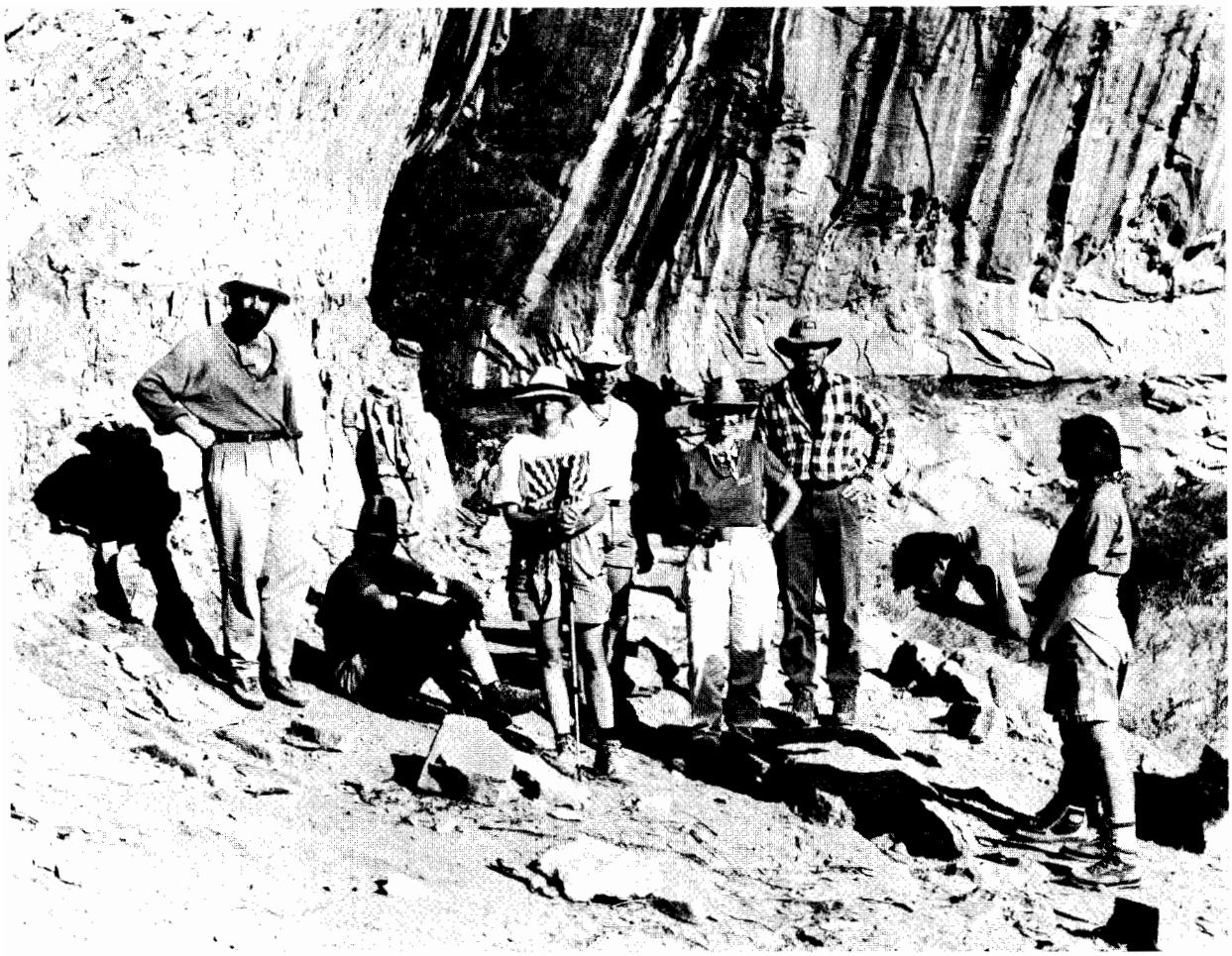


1897 photograph of the Whitmore Exploring Expedition's Camp 4 in Grand Gulch. From left to right: Orian Buck, James Ethridge, George Hairgrove, Levi Carson, Marietta Palmer Wetherill, Teddy Whitmore, Charlie Mason and Hal Heaton. (Neg. No. 338269, Courtesy Department of Library Services, American Museum of Natural History)

logists, scholars and researchers, some questions are being answered. The fog that has surrounded the discovery, prehistoric origins and manifestations of the Basketmakers is beginning to lift. I find it particularly fitting that the founders and members of the Wetherill–Grand Gulch Project have taken the lead in this renaissance of interest surrounding the Basketmakers.

Members of the Wetherill–Grand Gulch Project have opened a new door to understanding a specific fragment of the past. They have done so by forging new ways of looking backward through time and exploring the past through "reverse archaeology". They have taken historic inscriptions and proceeded as detectives to reveal the movements of various expeditions into Grand Gulch in the late 19th century. Through this technique they have rediscovered several collections of prehistoric artifacts previously considered lost. It reminds me very much of the experiences that the Wetherills themselves had: a few curious people made a serendipitous series of explorations, revealing a world that was far beyond the one they had previously known. The Wetherills, because of their burning curiosity and persistence, forged relationships with scholars and other interested people who came to them for guidance, and together they began to gain insight and share a vision of a larger prehistoric picture of the Southwest.

The Wetherill–Grand Gulch Project has taken this yet another step forward by retracing the historic routes and records of many early explorers in Grand Gulch. Bit by bit they have been rewarded with great success. By implementing "reverse archaeology" they have shown the world and the archaeological community at large that



Replica photograph of Camp 4. Taken during a White Mesa Institute trip in spring 1992. Left to right: Terry Tice, Jeffrey Minker, Dottie Sanders, Gary Kelley, Marietta Davenport, Lindsey Brew, Gary Hickock, Jan Wezelman and La Plata. (Photograph by Bruce Hucko)

ownership of archaeology is no longer an exclusive domain; the past belongs to us all. The work that the Wetherill–Grand Gulch group has done to amass over 500 historic inscriptions in Southeast Utah has taken a considerable amount of time. It represents a true labor of love for the canyon, for the people who once inhabited and explored its sinuous reaches, and for those who are still attracted to its magic.

From the experiences of the Wetherill–Grand Gulch Project the archaeological world could learn something by admitting that new techniques and methods can be developed outside the hallowed halls of universities and Federal agencies.

We have also discovered that perhaps we, as archaeologists, need to look at the wealth of materials already collected, and in storage. Materials that can reveal much needed information about the past. There is an urgent need to assess and analyze the existing materials before we can claim the right to excavate more. It is not only the material remains that are important, but also their subsequent care.

It is heartening to see the effect of the Wetherill–Grand Gulch Project. It has, with a fresh blast of air, opened the jammed doors of archaeology so that many people are able to participate and make extremely valuable contributions. It is my hope that these papers will inspire others with similar interests to persevere and to publish so we may all be enriched.

On a more personal note, I grew up hearing about southwestern archaeology and the proud legacy of being Wetherills. Sometimes as a child, when visiting the places where my family had worked, I felt shamed to hear inappropriate interpretations presented about the Wetherills and their contributions to the field of archaeology. They were, after all, working within the framework of the crude state of archaeology at the time. Through the papers presented within, hopefully a clearer picture will emerge of the Wetherills and their contemporaries. Much like ourselves they were hungry for knowledge. As they did decades ago, we are still peering into the dust of the ages for answers that will sooth our curiosity and provide knowledge that we can pass on to future generations.

I think that Richard Wetherill stated it beautifully when he wrote to Mitchell Prudden:

I want to make myself thoroughly acquainted with the whole Southwest. Some time in the future I hope to do something in the way of putting my work in book form. But first I must be educated. This is a rather slow process.

The papers in this collection continue this legacy initiated by Richard and the others who were first enthralled by Grand Gulch. And much like Richard, these papers illustrate that we still find our education to be a continuing and exciting process.

INTRODUCTION

Shelley J. Smith

Anasazi Basketmaker: Papers from the 1990 Wetherill–Grand Gulch Symposium is Number 24 in the Utah Bureau of Land Management Cultural Resource Monograph Series. This publication departs somewhat from others in this series. Earlier volumes typically focused on reports of professional fieldwork or regional data compilations, undertaken as mitigation efforts for various projects. This volume, and the Wetherill–Grand Gulch Project of which it is a part, grew from the interest of avocational archaeologists to learn more of the story of an area they knew and loved.

It all began in 1986 when a small group of backpackers to Grand Gulch decided to solve a puzzle. They wanted to learn about the artifacts gathered there during expeditions a century ago. Forming the Wetherill–Grand Gulch Project, they began their quest. Combing through dusty archives, pouring through faded photographs and expedition notes, and examining each site for evidence of past excavations and early signatures, they slowly built an impressive story. The Project linked artifacts in modern museums with their site of origin. They refined the process of "reverse archaeology" and built a context for the artifacts, one that allows a much broader and richer understanding of the lives of the Anasazi Basketmaker.

In 1990, the Project shared their discoveries and research with the public in the Anasazi Basketmaker Symposium, the culmination of their work. This publication is the compilation of the papers presented at the Symposium, plus reports of complimentary research. In addition, historic photographs and pictures of curated artifacts are publically available here for the first time. The Wetherill–Grand Gulch Archive (data and a complete set of relevant photographs from the Project) is curated at Edge of the Cedars State Park in Blanding, Utah. Future researchers now have a firm and unique information base to explore research questions not yet formed. This legacy is indeed an honor to the Project participants.

The Project participants, as evidenced in the List of Contributors, represent a range of backgrounds and training, each with a different angle on the story. This collection of papers is made whole by the mutual efforts of avocational and professional archaeologists. BLM sincerely thanks each contributor to this publication, and all of the people along the way who made this Project so successful.

From its inception, the Wetherill–Grand Gulch Project has been a tribute to the spirit of volunteerism; the hours and dollars donated by all the participants can only be motivated by the sheer joy of learning, discovering and sharing. For this publication in particular, several individuals are due a large measure of credit and thanks. Victoria Atkins, editor of this work, is a model of persistence, hard work, organization, and good humor. She spent countless hours of her personal time making this book a reality, and maintained a buoyant spirit throughout. Lisa McClanahan, who volunteered to format,

layout and design this book, has given most generously of her time and talents. Lisa's professionalism and skills put the polish on this work. Kathy Hurst volunteered to copy edit the papers, and we gratefully acknowledge her contribution. On behalf of Utah BLM, I want to extend a heartfelt thank you to Victoria, Lisa, and Kathy. We also want to recognize the contribution of BLM Editor Kezia Nielsen-Snyder; her careful proofreading and navigation through complex publication regulations are much appreciated.

Rediscovering the "Great Discovery:" Wetherill's First Cave & and its Record of Basketmaker Violence in this volume, contains photographs of human remains. Victoria and I wrestled with wanting to both honor the desire of many Native Americans that human remains not be depicted and to illustrate important points in Hurst and Turner's paper. We felt the authors had chosen only the photographs absolutely needed to substantiate their statements, and that the analysis of the human remains from Cave 7 (the very type site for Basketmaker culture) added an important and heretofore unrecognized aspect of Basketmaker culture. Wil Numkena, Director of the Utah Division of Indian Affairs, discussed the paper with us and supported our proposal to include the photographs. We thank him for his time and insights. We include the photographs with the hope that readers will view them with respect and appreciation for the story they tell.

This publication brings to a close one episode of the Wetherill–Grand Gulch Project, yet, as with any work of value, the past accomplishments give life to new beginnings. Research continues in directions both new and established. Ways of sharing information are continually sought. Newcomers to this work are welcome, and can become involved by contacting the Wetherill Projects (a non-profit organization) at 104 E. Carpenter, Cortez, Colorado, 81321.

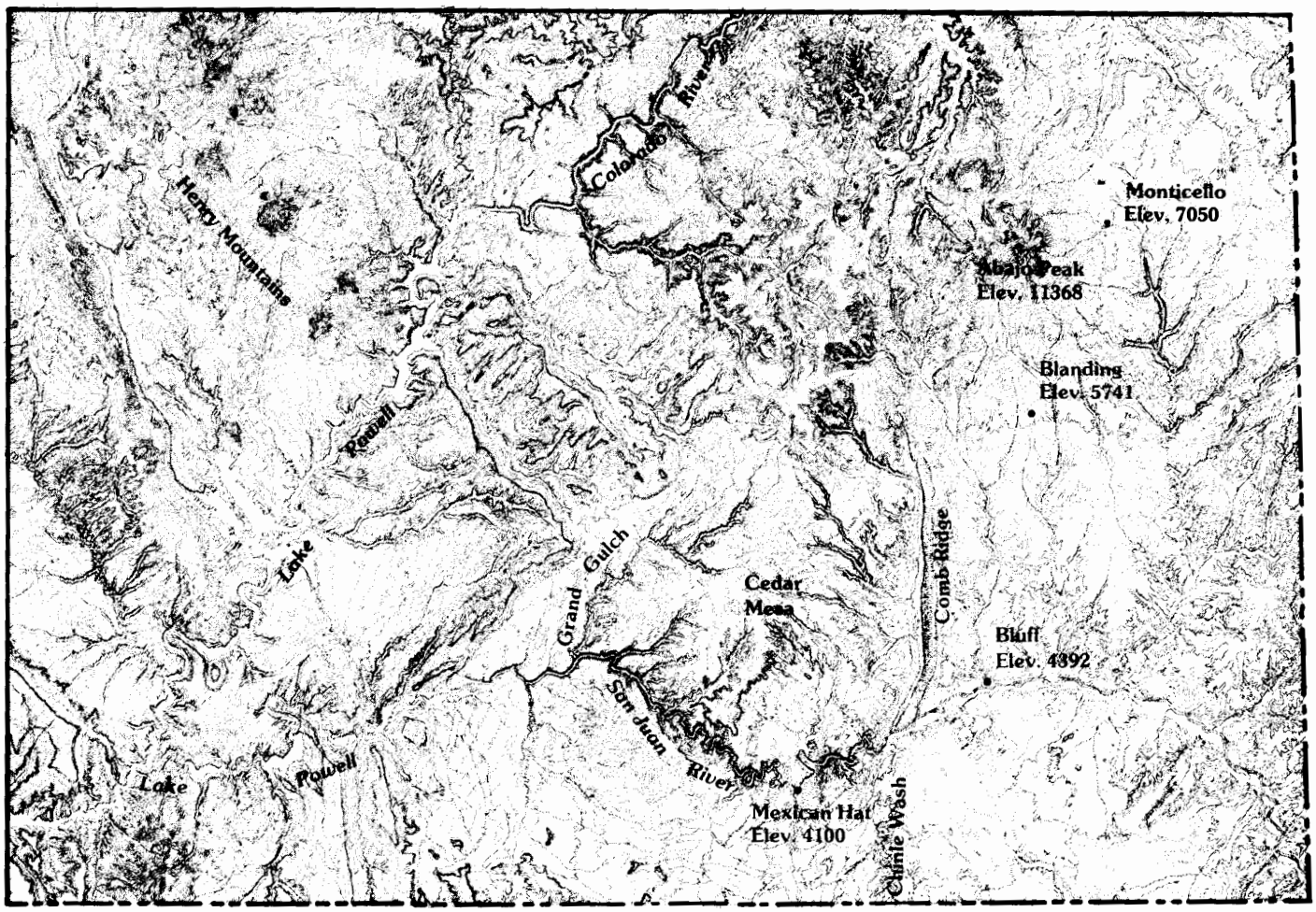
Notably, one of the very ambitious original Project goals will be realized in 1996: an exhibit that includes artifacts held in eastern museums, some of which have never before been displayed. The Utah Museum of Natural History is developing the exhibit as part of the State's Centennial Celebration and BLM is delighted to be a partner in its presentation.

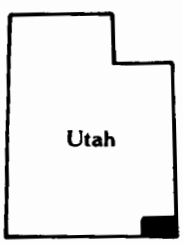
As this volume goes to press, BLM is finalizing a Management Plan for Cedar Mesa that outlines a strategy for the protection and enjoyment of the area's cultural resources. Partnerships such as the one BLM enjoys with the Wetherill–Grand Gulch Project will be critical to realizing the goals of that Plan. The BLM San Juan Resource Area in Monticello, Utah has management responsibilities for Cedar Mesa; they can be contacted for information at 435 North Main, Monticello, Utah 84535, phone (801) 259-8193.

Utah BLM is pleased and proud to be working with the Wetherill–Grand Gulch Project and to present this publication. We hope that it contributes to our understanding of the human endeavor in southeastern Utah, a continuum that includes us today, and which future generations may now know more fully.

Shelley J. Smith
Series Editor

GENERAL LOCATION MAP





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The Basketmaker II Period in the Four Corners Area

William D. Lipe

Introduction

The Basketmaker II period is important. The archaeological remains of this period document the emergence of the Anasazi cultural tradition and a consolidation of the dependence on farming that shaped the tradition from then on. The Anasazi experience is a unique and valuable strand in human history, one worth studying and understanding for its own sake. It also can stand as one example of the general kinds of economic, demographic, and social changes that swept through most of the world after the end of the last Ice Age, as ancestral patterns of food collecting were replaced by food producing, and as populations grew, became more sedentary, and developed more complex social organizations. Because the archaeological record from the Four Corners area is so good, the Basketmaker II period can serve as a case study, or series of case studies, that can inform us about general issues in human prehistory, as well as about the roots of the Anasazi culture.

On a more regional level, this conference makes an important contribution to Southwestern archaeology for a number of reasons. First, it provides an opportunity to discuss and digest some of the exciting new work on the Basketmaker period that has taken place in the Southwest over the last few years—and presents some additional new research, which will be reported here for the first time. Second, it recognizes the importance of the Basketmakers in the history of Southwestern and American archaeology, and provides important new data regarding this history. Third, the conference shows how much can be learned from systematic study of the older museum collections, photographs, and records, and hence justifies the effort and expense that has gone into maintaining these materials over the years. (Some of the papers also show how much work it is to glean new information from this kind of material.) Finally, it shows that amateur archaeologists (amateurs in the best sense) can take a leadership role in an important study such as the Wetherill–Grand Gulch Project, and can come up with new, invaluable information that is important and of interest to the general public, to amateur or avocational archaeological groups, and to the professional archaeological community.

The symposium paper by Julia Johnson chronicles the fascinating history of this unique project. The Wetherill–Grand Gulch Project in turn provides the backdrop for this unique symposium, which has brought together people from different backgrounds and types of interest, but who are united by their love for the study of the past, and by their concern for the fragile archaeological sites and materials upon which this study is based. The Wetherill Project and this conference may well be the model for similar efforts in the future, in the Southwest and elsewhere.

New Developments in Basketmaker Studies

I would like to review some recent developments and trends in research that are providing new perspectives on the Basketmaker Period, and that are stimulating new interest in Basketmaker studies. Not all these new developments are represented in the papers delivered here, but many are. As I briefly summarize these developments, and note a few of the recent contributors to them, I shall also try to draw attention to the

Table 1.1: **Chronology, Greater Four Corners Area**

Dates	Periods	Distinctive Characteristics
A.D. 1350–1600	Pueblo IV	Large plaza-oriented pueblos in Rio Grande and Western Pueblo areas; low kiva to room ratio; kachina cult widespread; corrugated replaced by plain utility types; B/W pottery declines relative to red, orange or yellow types.
A.D. 1150–1350	Pueblo III	Large pueblos and/or "revisionist great houses" in some areas, dispersed pattern in others; high kiva to room ratios; cliff dwellings; towers; triwalls; corrugated gray and elaborate B/W pottery, plus red or orange pottery in some areas; abandonment of the Four Corners by 1300.
A.D. 900–1150	Pueblo II	Chacoan florescence; "Great Houses", great kivas, roads,etc. in many but not all regions; strong differences between Great Houses and surrounding "unit pueblos" composed of a kiva and small surface masonry roomblock; corrugated gray and elaborate B/W pottery, plus decorated red or orange types in some areas.
A.D. 750–900	Pueblo I	Large villages in some areas; unit pueblos of "proto-kiva" plus surface roomblock of jacal or crude masonry; great kivas; plain and neckbanded gray pottery with low frequencies of B/W and decorated red ware.
A.D. 500–750	Basketmaker III	Habitation is deep pithouse plus surface storage pits, cists, or rooms; dispersed settlement with occasional small villages and occasional great kivas; plain gray pottery, small frequencies of B/W pottery; bow and arrow replaces atlatl; beans added to cultigens.
A.D. 50–500	Basketmaker II (late)	Habitation is shallow pithouse plus storage pits or cists; dispersed settlement with small low density villages in some areas; campsites important as well (?); no pottery; atlatl and dart; corn and squash but no beans; upland dry-farming in addition to floodplain farming.
A.D.50–B.C.1500	Basketmaker II (early)	Long-term seasonal (?) use of caves for camping, storage, burial, rock art; San Juan Anthropomorphic style pictographs and petroglyphs; camp and limited activity sites in open; no pottery; atlatl and dart; corn and squash but no beans; cultivation primarily floodplain or runoff based (?).
B.C. 6500–1500	Archaic	Subsistence based on wild foods; high mobility; low population density; shelters and open sites; atlatl and dart; no pottery.

contributions that the symposium participants are making in these areas. This is by no means intended to be a thorough review of the recent literature on the Basketmaker II period in the Four Corners area—only a brief and subjective selection of what seem to me to be important and active categories of research.

Perhaps the most striking development in the past few years is the emergence of a new "long chronology" for Basketmaker II. This is covered by Kim Smiley in his paper. Largely as a result of work done by Kim (see also Smiley 1984, 1992), we have more dates and better interpreted dates than we did a few years ago. Instead of a relatively brief Basketmaker II period that occupies the first 450 or 500 years of the Christian era, we now have evidence that BM II complexes in the northern Southwest, with substantial dependence on maize farming, extend back to between 1000 and 1500 B.C. In my chronology (Table 1.1) I placed the late Archaic—BM II boundary at 1500 B.C. We now have early or "rockshelter" BM II, dating largely to B.C. times, and late or "pithouse" BM II, dating to the early centuries A.D.—I've placed it at A.D. 50 to 500. That means that many of the perishable items such as basketry, etc. that we think of as typical Basketmaker II actually come from the earlier part of a rather long period—one as long as or longer than the rest of the Anasazi sequence put together.

If any of you are wondering what became of Basketmaker I (a hypothetical pre-agricultural stage proposed at the Pecos Conference of 1927 [Kidder 1927]), it became the Late Archaic. That is, by the time archaeologists began recognizing pre-agricultural sites in the Southwest, the terms "Archaic" and "Paleoindian" had come into wide use in American archaeology. The latter refers to the early Holocene period cultures that are characterized by large lanceolate spear points (e.g., Clovis, Folsom, Plano). "Archaic" refers to hunting-gathering cultures that depended on a considerable variety of wild plants and animals, usually exploiting them by seasonal movement; they also employed a varied technology, usually including stemmed projectile points and ground stone tools; and they evidently occupied smaller territories than did the earlier Paleoindians.

On the other end of the time period, the dates for the Basketmaker II to Basketmaker III transition appear to be holding firm at about A.D. 450 or 500, which we have recognized as the "starting point" for BM III for many years. In many parts of the Four Corners area, Basketmaker III sites don't actually become common until about A.D. 600. Whether this was because there was a hiatus in occupation between Basketmaker II and III in many areas (see Matson et al. 1988) or whether non-ceramic late Basketmaker II occupations continued later in some areas than in others is not clear.

In order to clearly distinguish Basketmaker III from Basketmaker II, I will digress here with a few comments on what makes Basketmaker III distinctive as a culture-historical period. The clearest marker the start of Basketmaker III, of course, is the appearance of plain gray ceramics, ordinarily in considerable abundance. There are some occurrences of brown wares in what appear to be very late Basketmaker II and very early Basketmaker III contexts in the eastern part of the Four Corners area, but it is well-made plain gray jars, accompanied by black-on-gray decorated bowls and other forms, that characterize Four Corners Basketmaker III in general. This period also has deeper, more substantially built pithouses, often with antechambers; surface storage structures are more common and larger than previously; beans are added to the agricultural complex; the bow and arrow replaces the atlatl and dart; the community pattern includes hamlets and villages of closely-spaced houses in some areas as well as loose clusters of very widely dispersed houses in others; and great kivas make their appearance, probably serving as the locations for rituals that drew membership from more than one social segment in the community.

Returning to the recent research developments relating to the Basketmaker II period: One of the trends in Basketmaker II studies is an increase in recognition and in the well-designed excavation, testing, and survey of late Archaic and early Basketmaker II sites. Much of this work result form contracted research required under federal or state law in advance of land-altering development projects. These projects might not be making such a strong contribution to our understanding of these periods had not this generation of Southwestern archaeologists learned better than their predecessors how to recognize and investigate the often subtle expressions of these early occupations. In addition to providing additional dates to flesh out the chronology of the emergence of Anasazi culture, these new field studies are providing new evidence on how, when, and where the transition from late Archaic occurred, and what the range of variability is across time and space in Basketmaker II culture. In this volume, the paper by Janetski synthesizes new field information.

There is new evidence that Basketmaker II people were heavily dependent on maize as a source of calories. The original framers of the Pecos Classification appeared to recognize this, but over the years a number of archaeologists have tended to treat BM II as a variant of the late Archaic, primarily dependent on hunting and gathering, with maize farming playing a fairly minor role in subsistence. Strong recent evidence to the contrary comes from several sources.

Recent analyses of stable carbon isotopes in human bone (Matson and Chisholm 1991; Chisholm and Matson 1992; Decker and Tieszen 1989) indicate that the carbon isotope ratios in both BM II and BM III skeletons closely resemble those from later puebloans, and contrast strongly with those from the Archaic period. The ratios are consistent with a heavy contribution of maize to the diet of the Four Corners Anasazi from Basketmaker II through Pueblo periods. This work is based on a very small number of examples, however. The results are very striking, but need to be checked on larger samples. Coprolite analyses carried out by Kate Aasen (1984) also indicate that maize was the most common dietary component from BM II through Pueblo II-III, although there is a relatively greater representation of wild foods such as pinyon in the Basketmaker samples. Settlement pattern studies by Matson on Cedar Mesa (Matson et al. 1988) indicate that late BM II habitation sites are located in the same situations as are later BM III and Pueblo habitations—in proximity to land arable by dry-farming methods. Basketmaker II villages on Black Mesa (Bearden 1984) and in the Navajo Reservoir area (Eddy 1961, 1972) also appear to be located to take advantage of agricultural soils.

Recent studies by Karen Dohm (1988, 1992) of the spatial organization of late BM II and BM III household facilities on Cedar Mesa indicate that there are substantial similarities, though the differences are in the direction of greater sedentism and subsistence intensification for the BM III settlements. Surface surveys by Dohm (1992) also indicate that the Basketmaker II houses on Cedar Mesa do occur in clusters, and that it is reasonable to think of these as dispersed villages, perhaps not too unlike those of the Los Pinos phase in the upper San Juan drainage (Eddy 1961, 1972).

Investment of effort in Basketmaker rock art studies is beginning to bear fruit. Polly Schaafsma, taking the whole Southwest as her study area (Schaafsma 1980) has recognized a series of styles—San Juan anthropomorphic, Chinle Representational, etc. that provide a basic time-space framework for the Four Corners area. Sally Cole has been conducting rock art surveys in a number of parts of the Four Corners area, and is developing a more detailed understanding of the temporal and spatial distribution of styles, and of the relationships among styles in this area (Cole 1989, 1990, 1992). Cole, Schaafsma, Jane Young (1988), Hartley (1992) and other workers are beginning the tantalizing but difficult task of figuring out how Anasazi rock functioned as part of the lives of the people in

various times and places. Positive trends here include more systematic comparisons between archaeologically recovered material culture and elements depicted in the rock art, and a more intensive examination and more critical use of ethnographic evidence and of the oral traditions of the Pueblo people. Cole's paper here is an example of what can be achieved in contemporary rock art studies.

Turner's contribution to the paper by Hurst and Turner in this symposium shows the potential for new physical anthropological studies of Basketmaker skeletons that are in museum collections. The previously mentioned studies of stable carbon isotopes also relied on existing collections. A veritable explosion of new techniques in physical anthropology—including the possibility of obtaining samples of ancient DNA—provide the possibility for major advances in understanding Basketmaker genetic relationships, nutrition, pathologies, and causes of death. These studies could all be done using existing collections.

Some of the key radiocarbon dates in Smiley's new chronology came from Basketmaker maize samples that had long been curated in museums. The ability to obtain direct measurements of carbon-14 with a nuclear accelerator opens up many new possibilities. Because only a tiny amount of carbon is required in this dating technique, we can now obtain dates from artifacts and other organic remains with very little damage to the material. Hurst's contribution to the Turner-Hurst paper also shows the potential for new findings from studies of museum collections of lithic artifacts, and other workers are recognizing the value of restudy of some of the irreplaceable older collections of perishable artifacts.

By locating and providing a history and context for some of these important collections, the Wetherill–Grand Gulch Project has helped remove some of the barriers to successful re-studies. The papers by Hayes, Phillips, Knipmeyer, and Blackburn and Atkins should encourage future research on the Basketmaker II materials from the Grand Gulch area, because they help clear away the prevailing confusion about when particular archaeological collections and records were made, by whom, and under what conditions.

The history of American archaeology is also emerging nationwide as a scholarly specialty (e.g., Christenson 1989; Reyman 1992). Archaeologists are recognizing that the history of research helps them understand why the early workers chose certain research problems and how they arrived at their interpretations. Concepts and research approaches developed in the early days of the field also exerted a powerful influence on the work that followed, and in some cases continue to underlie present-day thinking, often in unrecognized ways. Wetherill's demonstration of a stratigraphic sequence from Basketmaker to Cliff-dweller and the later testing of this sequence by Kidder and Guernsey (1919; Guernsey and Kidder 1921) represents an early success story in American archaeology. The discovery of the Basketmakers made clear that American archaeology had the potential to inform us about varieties of past culture that were not represented in the ethnographic and historical record. By placing the discovery of the Basketmaker culture in much better historical context, the papers noted above make an important contribution to the emerging field of the history of archaeology.

New syntheses are being developed that make connections in both time and space, and place the Basketmakers of the Four Corners area in a Southwest-wide perspective. Prominent here is the work of W.H. Wills (1988), F.E. Smiley (this volume and 1992), and R.G. Matson (1991). These syntheses bring together and provide new understandings of previous work, and will also serve to orient future research.

This symposium also draws attention to the fragility of the archaeological record of the Basketmakers (and of their early students), and to the desperate need for protective and management strategies that take the importance and fragility of this resource into

account as concluded in Williamson and Carnet's paper. The papers by Davidson and Parker are also welcome because they show that the Bureau of Land Management is becoming aware of these needs. This agency is responsible for protecting and managing a large proportion of the Basketmaker II sites remaining in the Four Corners area.

A Summary of Basketmaker II Culture in the Four Corners Area

Origins

On the basis of a review of research on the Late Archaic and Basketmaker II periods, Matson (1991) argues that the early Four Corners Basketmaker culture probably developed in several ways. Some populations—for example, the users of the Marsh Pass rockshelters of northeastern Arizona—may represent migrant groups that had roots in the San Pedro Cochise culture of the Desert and Mogollon upland regions to the south. The San Pedro populations of these areas obtained maize from Mexican groups and when they began to make heavy use of it, their populations grew and expanded geographically. Some of these people appear to have moved into the San Juan drainage to become the earliest Basketmaker II. In addition, there may have been small populations of Archaic-stage hunters and gatherers already in the Four Corners area. These groups may have adopted agriculture and some of the other traits that characterize Basketmaker II culture after contact with incoming San Pedro people, or through interaction with similar groups further south. Matson thinks the Durango and Navajo Reservoir BM II populations are the best candidates for "acculturated BM II."

Subsistence and Settlement Patterns

Compared to the preceding Archaic period, there is a substantial increase in Four Corners area population in Basketmaker II. Relative to later Basketmaker III and Puebloan periods, however, Basketmaker II regional populations were probably low. There appear to be many areas that were heavily settled in later times that have little or no evidence of BM II population. In general, concentrations of BM II habitation sites tend to be found in high diversity areas with good access to wild foods that also have reasonably good farming resources (arable soil, sufficient moisture).

Matson (1991) argues that in early Basketmaker II times (ca. 1000 to 1 B.C.), farming was predominantly based on floodwater and runoff techniques, utilizing alluvial soils in canyons or valleys. He believes that the earliest Basketmaker maize, derived from southern stock, was not well adapted to the short growing seasons, dry climate, and long summer days of the northern Southwest. Through time, this adaptation occurred, leading to an expansion of farming into the drier mesa-tops and uplands. The shift to upland dry-farming, in locations such as Cedar Mesa, was accompanied by an overall increase in regional population and by the development or adoption of the pithouse as the principal residence for nuclear or small extended families.

As previously noted, maize appears to have been the single most important source of calories for Basketmaker II populations. By late Basketmaker II times, and perhaps even earlier, maize was probably as important in the diet as it was in later Basketmaker III and Pueblo periods. Squash was present throughout the BM II period, and was important both as a source of food and of containers. Beans appear to have been lacking in Basketmaker II, but appear in BM III. Weedy plants that grow well in disturbed soils such as are found in cultivated or abandoned fields were a regular part of the diet in BM II and in later Anasazi periods. A good example is *chenopodium*, known commonly today as lambs quarters or goosefoot. This plant was used as a source of greens in the spring and early summer, and for its abundant small but nutritious seeds later. Wild foods such as grass seeds and pinyon nuts were relatively

more important than in BM III or Pueblo times. The domesticated turkey probably was not yet present, but appears in Basketmaker III or Pueblo I.

The Basketmaker II people do not seem to have placed as much dependence as the later Anasazi on storing maize as a hedge against crop failure. At least, their storage facilities were smaller than those in later periods. With lower regional populations, it may be that they were able to rely on gathered wild foods if crops failed. In the absence of beans and turkeys as sources of protein, the Basketmaker II people may also have done more hunting for wild game than did their successors in the area; this has not been demonstrated by systematic comparative studies, however. In general, we still have much to learn about if and how Basketmaker II subsistence varied through time, in different geographic settings, and with differing local population densities.

Community Organization and Household Architecture

We don't know much about the community pattern of early Basketmaker II—most evidence is from rock shelters, which clearly were used for storage, burials, rock art, and sometimes, for habitation. Whether houses were built in shelters at this time is an item for debate (but see Janetski's paper in this volume). Both jar-shaped subterranean cists and above-ground slab-based cists were used for storage. Although some shelters clearly were used for habitations as well, we don't know whether this was seasonal or year around. Some open limited activity sites can be dated to this period. Houses may have been built in the open during early Basketmaker times as well. Recent compliance-related work by Dennis Gilpin (1992) in northeastern Arizona has revealed several possible early Basketmaker II pithouses in profile. There are several associated radiocarbon dates from the first millennium B.C.

In late BM II, shallow pithouses are widely used. They vary in form from cribbed log construction in Durango (Morris and Burgh 1954) and Navajo Reservoir area (Eddy 1961) to small irregular forms on Black Mesa (Bearden 1984) to circular with slab-lined southern entries on Cedar Mesa (Berry 1982; Dohm 1988). In these latter houses, there is some evidence that a superstructure (probably of poles, small branches, and mud) was supported by a four-post framework like that used in later Basketmaker III and Pueblo I pit structures. Some of the Cedar Mesa houses also have slab wingwalls which foreshadow this architectural element that is common in later San Juan area pit structures.

Clusters of Basketmaker II pithouses are evident in some areas (though we don't know whether all the structures were occupied at the same time), while in other areas, single houses are encountered in apparent isolation. Recent intensive surveys on Cedar Mesa is providing evidence that many, and perhaps most late BM II houses are part of loose clusters with wide spacing between houses (Matson et al. 1988; Dohm 1988; 1992).

Within late Basketmaker II houses, storage pits and cists often occur inside the house, and sometimes are numerous and/or large. Storage features also occur outside the house, and consist of slab-based surface cists or small rooms, as well as storage pits. On Cedar Mesa, the late Basketmaker II pithouses generally show a spatial configuration that resembles that of later San Juan Anasazi "habitation units" (Dohm 1988). The pithouse entryway is oriented south or southeast, and there sometimes is a slab deflector between the entryway opening and the central firepit. Storage structures generally occur north of the house, and there usually is a thin midden or sheet trash area to the south or southeast of the house, marked by ash, burned stone, and flaking debris.

Late BM II houses are generally shallower and less substantially built than later BM III and Pueblo houses. Large BM II campsites are known in some areas—these may

represent seasonal alternatives to house-dwelling, or may actually represent early BM II occupations, when houses were less used.

There is no clear evidence of community-level facilities such as great kivas. In Navajo Reservoir area, Eddy (1972) notes slightly larger pit structures that he thinks may have served as the locus for community rituals.

Social and Ceremonial Organization

To my knowledge, no archaeological evidence has been presented that there were special leadership or ceremonial statuses in Basketmaker society. This does not mean that they did not exist. With the possible exception of the larger Los Pinos phase houses cited by Eddy, the community pattern and architecture do not indicate social differentiation. This line of evidence suggests that the Basketmaker II people lived in small egalitarian communities. These settlements appear to lack formal spatial structure—e.g., there do not appear to be central plazas, great kivas, or other elements of "public architecture" and the houses often are widely spaced. The houses themselves do not appear to represent a large investment of labor, and storage facilities are not large. The evidence of relatively informal community and architectural patterning may indicate that community social organization was not very elaborate or formal. In some locations, however, the evidence that houses were repeatedly rebuilt in the same locations (e.g., Morris and Burgh 1954) suggests that some communities were not short-lived, but remained in place for several generations.

Basketmaker II burials often have substantial amounts of grave goods, and analysis of variation in materials associated with interments is a standard source of evidence for social differentiation. Such analyses have not been done systematically for Basketmaker II burials from the Four Corners area, but the work that the Wetherill–Grand Gulch Project has done to locate and provide better contexts for early collections will facilitate this kind of study in the future.

Trade in shell and exotic minerals seems better developed in BM II in general than it does later. At least, these kinds of materials seem much more abundant in Basketmaker II museum collections than they do in collections from later periods. Subjectively, this appears to hold even if the comparison is confined just to burial associations. Systematic studies of this topic are needed, however. Perhaps the importance of these exotic materials in Basketmaker II social organization implies a dependence on maintaining relationships with people in other communities and regions to allow relocation to be employed as a backup strategy in case crops failed. Individuals might have acquired shell, ornaments, and exotic materials for use in developing stable reciprocal trading relationships with partners in a variety of areas. Relationships established and maintained in this way could have then served as a basis for other types of reciprocal assistance (cf. Weissner 1977). This type of "insurance" against crop failure or other subsistence-related problems might have been an alternative to a dependence on long-term household-level, food storage, which seems better developed in later periods.

In this symposium, the studies by Hurst and Turner, and by Cole present some fascinating information that must be taken into account as we try to understand Basketmaker II social organization. The evidence of large-scale violence reported here by Hurst and Turner implies that inter-community or inter-regional hostilities at least occasionally escalated beyond the level of small-scale feuds or raids, and that relatively large groups were being mobilized for warfare. The evidence that facial scalps were kept by Basketmaker II groups (see Cole's paper in this symposium; also Cole 1984, 1985) may be related to inter-group violence, but could also have to do with keeping and venerating remains of ancestors.

Rock art studies in the Four Corners area are undergoing a florescence, and the potential of Basketmaker II rock art to provide information about social and ceremonial aspects of this period is beginning to be tapped, as noted above. A considerable amount of interpretive work (e.g., Schaafsma 1980; Cole 1989, 1990, 1992) has focused on the possible shamanic aspects of large Basketmaker II anthropomorphs and other rock art elements. Given the accumulating evidence of the dependence on agriculture in this period, I wonder if some of these figures and elements may not instead indicate a focus on commemoration and veneration of ancestors and lineage, and the promotion of fertility. Cross-culturally, these emphases would seem to be more characteristic of growing agricultural communities. A recent paper by Cole (1992) emphasizes rock art evidence of continuities in religious symbolism from Basketmaker II to historic Western Pueblo, a position that does not seem to me to be entirely consistent with the "shamanic" interpretation of Basketmaker II rock art. It does indicate, however, that Cole is developing new contexts for interpreting Anasazi rock art, and that this area of research is a dynamic and rapidly developing one.

Material Culture

In surveying material culture, we need to keep in mind that the majority of the Basketmaker II perishable artifacts that have been studied (baskets, sandals, etc.) are probably from earlier contexts than is the architectural and settlement pattern data. Most large collections of lithic artifacts also come from relatively late open sites. Consequently, any attempts to make a single reconstruction of material culture (or other aspects of culture, for that matter) for the Basketmaker II period are suspect. There probably was substantial temporal and spatial variation within this period, and we do not yet have a very good understanding of this variation. Having said this, I will go on to attempt a very generalized summary of Basketmaker II material culture.

The atlatl and composite dart seem to have been the principal Basketmaker II weapons. Projectile points are relatively large and are almost universally corner or side-notched. Geib and Bungert (1989) present evidence that arrow points appear in contexts contemporary with late BM II in Glen Canyon and in central Utah, and Reed and Kainer (1978) report probable BM II arrow points from the Tamarron Site north of Durango. Eddy (1961) also reports several arrow points from late BM II contexts in Navajo Reservoir area, though Matson (1991:54) suggests that they may be intrusive. The standard interpretation that the bow and arrow did not make its appearance until Basketmaker III may have to be modified.

The Basketmaker II people did not use fired pottery, except for small amounts in late BM II contexts in the eastern part of the Four Corners area. As with the bow and arrow evidence, this makes the boundary between Basketmaker II and III a bit fuzzier, but that is to be expected as we obtain more and better data. The Basketmaker II people were certainly familiar with the properties of clay, as attested by well-made storage structures, and by their use of unfired clay containers and figurines (Morris 1927). The late Basketmaker II–earliest Basketmaker III ceramics appear to result from trade or diffusion from the Mogollon area, rather than being an indigenous development, as Morris (1927) originally thought.

The Basketmaker II people are famous and were in fact named for their well-made coiled baskets, twined sandals, and twined bags. The inventory includes large conical collecting baskets and winnowing trays that become less common and then disappear in later periods. These seem likely to represent equipment primarily used in seed gathering and processing. The winnowing trays may have been used in parching corn as well—a practice that may have become less important after pottery began to be used for cooking maize. Sandals made of fine twined cordage are present, as well as coarser wicker-work varieties made of yucca leaves or other fibers.

There do not appear to be any loom-woven fabrics. Blankets made of strips of rabbit fur caught in the twines of cordage were widely used.

Equipment for grinding maize and other hard seeds is common in BM II sites. Grinding slabs with an oval basin grinding surface, and accompanying one-handed cobble manos are common throughout—a link with the late Archaic. In late (pithouse) BM II contexts , troughed metates and larger manos begin to appear, and are quite common at some sites. These tools appear to be more specialized for maize grinding than are the basin grinding slabs and one-hand manos.

As noted early on, the Basketmaker II and III populations generally have longer crania than do the later Pueblo period populations. This initially led some archaeologists to infer that the Basketmakers had been replaced by physically different populations. It was also recognized that the crania of the later peoples had in most cases been artificially flattened in infancy, and that this contributed to the apparent difference in head length. Over time, the latter view won out, and relevant archaeological evidence was found. Both the Basketmakers and their Puebloan successors commonly used cradleboards, which have been found archaeologically, In Pueblo times, however, a flat piece of wood was placed behind the infant's head, resulting in the artificial flattening. These wood "pillows" have been found in dry sites.

Conclusions

In conclusion, the Basketmaker II period was a formative one for the Anasazi tradition. Older conceptions of this period, many of them based on work done in the late 19th and early 20th centuries, are being modified as the period again becomes an active and dynamic area of research. A number of currently active areas of Basketmaker II research are represented at this conference. Its most distinctive and striking contributions, however, are the demonstration 1) that important new evidence on the Basketmaker culture and the history of its archaeology can be gained from careful and persistent investigation of scattered archives, museum records, diaries, photos, graffiti, old artifact labels, and the like and 2) that exciting and important work of this sort can be designed and successfully carried out by people who do not make a living as professional archaeologists or historians, but who are willing to devote their intelligence and endless amounts of energy and time to the task.

It has become an educational model which can be adapted to other fields by people in the private sector.

Fred Blackburn of Cortez, Colorado, had spent many years in Grand Gulch as a Bureau of Land Management ranger. In addition to pouring over Frank McNitt's book, *Richard Wetherill: Anasazi*, locating the Wetherill collections at the American Museum of Natural History, and beginning an archive of material assembled by Dr. William Lipe and others, he was certain we could locate the sites described in the journals of expeditions into Grand Gulch 100 years ago. By studying the expedition notes and pinpointing the "signatures" of early explorers, Fred felt we could relocate exact locations of the early excavations. Much of this "handwriting on the wall" remains visible, carved or inscribed in the sandstone alcoves deep in the canyon. The field notes and photographs also contained descriptions of the artifacts these explorers removed. With this information we could, in many cases, document an artifact's original provenience. Fred called this process "reverse archaeology."

In the fall of 1986 Fred sent the first of two proposals he would submit to the American Museum of Natural History (AMNH) requesting an appointment to photograph the collections.

Fred had been associated with White Mesa Institute, a year-round outdoor education program operating as a unit of the College of Eastern Utah known as the Four Corners Studies Center. Through him we obtained affiliation with their financial arm, The San Juan Foundation. Cleal Bradford was Director and became our fiscal agent. This gave us non-taxable status. A research agreement with the College of Eastern Utah was signed in December 1986 (Appendix A).

As we waited for approval from the AMNH, we made a spring 1987 signature documentation trip into Grand Gulch. That trip built a fire under each of us. Using Richard Wetherill's journal we were able to identify two caves, the Green Mask site and Cave 19, and we could identify some of the artifacts that had come from each of them. Fred's theory of "reverse archaeology" indeed worked! A lifelong dream turned into an idea had captured the curiosity, imagination, and lives of this small group of hikers exploring the history of the Anasazi in Grand Gulch. How many other caves and sites could we identify from the field records? What other records could we find to identify the dozens of other sites in Grand Gulch?

Initially Frank McNitt's book, *Richard Wetherill: Anasazi* was one of our primary references for the sequence of events during the Wetherill's expeditions and subsequent dispersal of the collections. Where did McNitt acquire his information? We were certain we could find further clues in his original source material to help us identify caves and early routes into Grand Gulch. In the summer of 1987, Ann Phillips located McNitt's papers and went to the New Mexico Records and Archives in Santa Fe, New Mexico. The historic photographs accompanying his papers caused Ann to realize that we might be able to supplement Fred's research by using old photographs to identify people and sites visited 100 years ago.

At this early stage in the project we didn't realize there had been at least 21 expeditions into southwestern Colorado and southeastern Utah between 1888–1902, all of which we would eventually need to unravel. However, we did recognize that our task was growing. We would need to add more original source material to Fred's personal archives, verifying McNitt's sources to clarify the research for ourselves. Only later were we aware that McNitt's excellent story was full of confusion with misidentified sites and collections attributed to the wrong places.

The scope of the project began to balloon. It was time to have an organizational meeting; we weren't even sure of a name for the project.

On July 12, 1987, Fred Blackburn, Julie Johnson, Ann Hayes, Ann Phillips, Bob Powell, and Carl Weil signed a contractual agreement as team members in this new undertaking (Appendix B). What would we call this project? We wondered how we could attract attention to gain the support we would need; what really would catch a person's imagination? Many people knew of Grand Gulch, but even more knew about the Wetherill connection with southwestern archaeology. We felt that Richard Wetherill was the Father of Southwestern Archaeology, at least in the Four Corners area. His expeditions into the canyon had reaped a good deal of information because he knew the importance of recording accurate notes to accompany artifacts. Richard Wetherill's journal notes exceeded the quality of those from other expeditions. Without them we would not be able to complete our project. Thus was born the Wetherill–Grand Gulch Research Project.

At that meeting we divided research responsibilities according to each of our interests. Bob Powell agreed to write what would be the third proposal to the AMNH. Fred would serve as Project Director. His seven years as a BLM ranger in Grand Gulch had given him the knowledge of sites and signatures that hopefully would lead us to our goal.

Fred assigned me the job of locating a Mrs. Jesse Nusbaum who lived in Santa Fe. She probably had her husband's notes, letters and photographs from the early days when he had been Superintendent of Mesa Verde National Park. Jesse Nusbaum had remained interested in Grand Gulch collections, and Basketmaker artifacts in particular. He may have accumulated documents that would be invaluable in deciphering the story of Grand Gulch archaeology. Mrs. Nusbaum was in her nineties, which gave us a sense of urgency to locate her and get what information she might have pertaining to the project.

I pursued this lead by phoning a friend in Santa Fe, Betty Lou Lee. I appointed her "project detective." In a few days she called back saying she had found Mrs. Nusbaum. Fred had described Mrs. Nusbaum as "a cantankerous old lady," but my friend had talked with the daughter who denied this and encouraged me to call Mrs. Nusbaum directly. The instant I told the aging woman the reason for my call, she took off on a verbal barrage against the Park Service. They had refused to accept her husband's papers while he was still alive. I let her run on as my phone bill ran up. When at last she had vented her wrath, she said there was only one person she would ever give the papers to and that was a young man who worked for the Smithsonian Institution. He knew the value of the papers. I was glad I had not hung up. His name was the key to our getting the information; however, she could not recall his name. After questioning her as much as possible in hopes of a clue, I finally gave up.

Determined not to be beaten, I called an old friend, now retired from the Smithsonian. The networking paid off with the name of a Smithsonian contact, Mr. Glenn. Talking with him he said, "Can't you call her back and get a name? We have a lot of people working here, you know." Again, I phoned Mrs. Nusbaum. As soon as I introduce myself she snapped, "I told you I wouldn't give that information to anyone except Lon Wood Taylor!" In a fit of anger she had recalled his name! A quick "thank you" and I hung up. I hastened to phone the Smithsonian; the wheels were put into motion. Three weeks later they had the things we wanted—nine boxes of information. Perseverance had paid off! During a week in Washington, going over reams of information, more clues were discovered, and I photocopied over one hundred pages from Jesse Nusbaum's papers to take back to Colorado.

Research into the Basketmaker Anasazi of Grand Gulch had been limited because much of the information about them had disappeared or been fragmented. Excavations funded by wealthy easterners and prestigious museums during frenzied collection years late

in the 1800s had removed much of the remains of this once thriving culture. Some of their collections were exhibited at the 1893 World's Columbian Exposition in Chicago and later moved or disbursed. Very soon thereafter, interest in owning these priceless collections died. Before long their whereabouts, along with field notes, became obscure if not lost. For the next hundred years scholars primarily focused on other "more prestigious" archaeological areas. Only parts of the information about these early collections were sorted.

Our goal gradually broadened with this new awareness. We realized it would be important to gather all the information available and create a reference file for all to use: the history of the expeditions, the people who led them, and the routes the artifacts took to their present repositories. We also realized that we didn't know exactly how to proceed, "archaeologically" speaking.

At a January 31, 1988 meeting, we clarified our goals, objectives, and methods (Appendix C). This was an important meeting. We committed ourselves to finding original sources, since the story as it was unfolding was much too complex to rely on hearsay or someone's guesses. Without a full archive collected in one place, much of our research would be subject to the same loss and obscurity the Wetherill data had suffered. Many collections were made in the early 1890s, were of similar size, and could be easily confused with one another. It was clear that we had to work together as a team; information had to be shared; and accuracy was imperative for our work to have any value. The credibility of our work depended on these factors.

Ann Hayes, a Boulder artist and writer, had organized the first trip into Grand Gulch when the project was considered. Early in 1988 when she visited her mother in Chicago, she also went to the Chicago Field Museum of Natural History. She wondered about their collections and whether they had the McLoyd/Graham Collection. Was McNitt right when he said the Green Collection was in Pennsylvania? Ann's research in Chicago uncovered information that indicated McLoyd & Graham's first collection, known as the Green Collection, was in Chicago rather than Pennsylvania. This was a new and major piece of the puzzle for us. Also, she found that the Lang Collection made by another early Grand Gulch excavator was at the Field Museum in Chicago as well. Ann came away from Chicago eager to investigate collections originally exhibited at the World's Columbian Exposition in Chicago.

Ann Phillips, another Boulderite, reduced her educational consulting practice to become the curatorial historian of the project. The tangle of mysteries surrounding the expeditions, the collections and their guardianship intrigued her. Solving the puzzle became an obsession, and the rapidly growing files needed a meticulous system of organization. The hours she spent pouring over barely visible field notes and poorly photocopied pages of information from archival institutions are known only to team members. The project would never have developed as it did without her dedication.

Carl Weil, a member of the Colorado Mountain Club who was on the first trip into Grand Gulch, undertook research at the Colorado Historical Society and made personal contact with one of the Wetherill heirs, Carol Ann Wetherill of Monte Vista, Colorado. He gathered information and passed it on to us. Like the rest of us, he, too, has a love for the Southwest, especially Grand Gulch.

Bob Powell, the original photographer, had hoped to photograph the artifacts in New York. His proposal was the one finally accepted by the American Museum of Natural History. When the research team was assigned the first two weeks in October, 1988, to photograph the artifacts, personal conflicts forced Bob to leave the project. The team members have not forgotten his efforts to get them into the Museum.

There was a lot of confusion in the project in the spring of 1988, and after almost two years there was even some question as to continuing the project. Communication between team members was difficult, but crucial to functioning together as a team. With team members living in three or more places, many phone calls and letters were necessary.

A questionnaire was developed which was sent to the six team members and to many other support people. The twenty-one questions irritated some recipients, but everyone answered. This questionnaire helped us narrow our focus and bound us together with a common purpose (See Appendix D).

A meeting was scheduled in Blanding, Utah, at the College of Eastern Utah, our sponsoring institution. Major decisions were made as to the phases of the project and how we would operate under the sponsorship of the College. We envisioned three phases. First we would complete the archives and present them to the Edge of the Cedars Museum. Second, we planned a symposium that would include a photographic exhibit at the Edge of the Cedars Museum. Finally, we envisioned a book telling our story and the story of Grand Gulch of a hundred years ago.

Fred Blackburn, after returning to school for a teaching certificate, realized his job as Project Director had become a much larger job than when we were just planning to photograph artifacts in New York. He requested that we find someone to take over the project direction so that he could continue working with the historic signature data.

My experience in several business ventures and being retired made it possible for me to take over from Fred as Director. However, he agreed to continue as Research Coordinator. Correspondence had reached the point where a full time secretary was needed. I felt I could volunteer as both secretary and director, eliminating further fund-raising for salaried positions.

As we all became engrossed in the evolving mystery surrounding the disappearance of thousands of artifacts, notes, and letters, regular jobs and family were routinely neglected to work on the project. We felt a bond with the Basketmakers and their land. "They kept calling us. We began to feel that we were on a mission to somehow solve the puzzle and make known the lives of a special culture long lost," said Ann Phillips.

Combining Fred's knowledge, intuition, and direction with our own questions, we began to piece together information about the Wetherills' and other early expeditions. Information had been scattered to the wind. Our searches took us all over the United States. We continued to depend on Fred for guidance and direction and discovered why many thought we couldn't accomplish this; the only way we could was through our team efforts.

Our second spring trip, this time into the Perfect Kiva Site in Grand Gulch for documentation of signatures, proved to be a breakthrough. Using Graham's journal (C.C. Graham and J. H. Graham along with Charles McLoyd made three important southwestern Utah collections, two in Grand Gulch)(see Blackburn and Atkins, this volume), locating Graham's signature, and comparing historic photographs with more recent ones proved again that Fred's theory, Fred's system, would work!

However, shock set in when we discovered that some signatures we had found on the previous trip had further eroded or been intentionally defaced. We felt an urgency to document as many signatures as possible in the entire canyon. Specifically, the dates and signatures we found in Perfect Kiva became a reference point for further signature documentation. Thus began regular spring and fall documentation trips.

Realizing that some backpackers thought the signatures were grafitti, we knew something had to be done immediately. Together with Dale Davidson, the BLM

archaeologist in charge of Grand Gulch, Ann Hayes produced a pamphlet for hikers into the canyon. It is called "Save the Signatures." Its purpose: to educate hikers as to the importance of preserving what little remains of the signatures, campsites, pictographs, petroglyphs and the other signs early explorers left behind a century ago. Not only had time and weather begun to erode the signatures, but it appeared unknowing hikers were deliberately rubbing them out, sandstone against sandstone. Without these signatures our research could not be completed.

The next challenge was to find a photographer, since our original photographer had withdrawn. In the middle of what now seemed the natural place for business to take place, anywhere in the Four Corners area, several of us met at Mesa Verde during a Hopi Dance week-end. There, in Spruce Tree Amphitheater, we interviewed and hired Bruce Hucko. He would have the chance to go to New York and photograph the artifacts. However, unlike our initial volunteer photographer, he would be paid.

Now more than ever we needed financial help. There were not sufficient funds for the New York trip, for a photo session in Chicago, and for a symposium. Granted the latter was two years away, but plans needed to be made. Everyone agreed that we should submit a grant proposal to the Utah Endowment for the Humanities. Who would do this had not been decided.

Recognizing that things would not always go smoothly, we had many ups and downs. Some were of such magnitude as to bring the group to the brink of a break up. Moreover, we were not prepared for the black cloud that appeared in the form of opposition from one of the major eastern museums. We had requested photographs of artifacts "in situ." This meant that perhaps mummies would be in certain photographs. The head of the Museum of the American Indian became extremely upset by this request. We were not professionals. He had serious doubts about what we would do with these photographs and doubted that we had the "ability to handle such a large scale project without professional training or supervision." Procuring photographs of mummies or having anything to do with mummies was one thing we had all agreed not to deal with from the very formation of our research proposal. This man was so enraged by our request, however, that he telephoned the other museums we were working with and vented his anger in an effort to stop our project.

One person he called was Don Burge, Director of the Pre-historic Museum at the College of Eastern Utah in Price. Fortunately, donations for our project had gone to the College of Eastern Utah, San Juan Campus in Blanding, one of our project sponsors, and Mr. Burge knew about our project and what we hoped to accomplish.

Nonetheless, I was shocked to receive a phone call from Mr. Burge telling me that he had flown to New York to discuss the complaint directly with the Director of the Museum of the American Indian. It was apparent to him that our project had merit! And we were learning about museum politics. Perhaps Don Burge's intervention opened the door for us. Ultimately we were given two days to research their archives and photograph a few of their artifacts while we were in New York, plus the opportunity to return at a later time.

We faced another challenge. We needed professionals to advise us and review our work. Letters went out to a long list of professional people who might agree to be on our Advisory Board. We now came "out of the closet" and let people know what we were doing.

The money problem kept looming before us. The New York trip in October of 1988 was coming up, but we were no longer talking about just sending Fred and a photographer. We needed six people. We had hundreds of artifacts to photograph. It would take three people to expedite the task. One to bring items to be photographed, one to record what

was to be photographed, and of course the photographer. We needed three other people to do research in the archive. The original donation that I had made might cover the cost of the New York trip, but it certainly would not go any further. How could corners be cut?

No sooner had one night's deposit for six people been sent to the West Side YMCA in New York, when a phone call solved our problem. Janet Ross lives and works in southeast Utah, knew about our project, and knows Linda Asher, who lives in Manhattan, N.Y. Linda happened to call Janet on an unrelated matter. During the conversation she said, "Do you to know anyone who is interested in swapping homes? I want to get out West the first two weeks of October. I believe in sharing what we have and I have a three bedroom apartment I could swap." The first two weeks of October was the period when we would be in New York photographing artifacts at the American Museum of Natural History. After several phones calls and affirming that neither Linda nor the project members "did anything funny," we agreed on an exchange. It couldn't have been better. Her very large three bedroom apartment was just ten minutes walk from the museum. How lucky could we be?

Additionally, Agnes Gund provided housing for Fred as she had on prior occasions. A donation was received from Bert Fingerhut specifically for Janet Ross to accompany us to New York. Although she actually worked with us for only a couple of days, her contribution was appreciated. Efforts were made to persuade a major airline to provide tickets for six of us from Denver to New York; these failed. We did manage, however, to obtain film donated by Kodak and we owe them a debt of gratitude.

This kind of "networking" continued to help us come closer to our goal. Sometimes it was hard to believe how help came just as we needed it.

Everyone was involved in preparing for the trip to New York. Most importantly we needed to know exactly what we wanted to see and photograph both in the American Museum of Natural History and at the Museum of the American Indian. Bob Powell and Ann Phillips continued the work started by Fred Blackburn and Russ Hayes of compiling computerized lists of associated artifacts from their field numbers, museum numbers, and their locations. These were needed in order to categorize, cross reference, and pinpoint those artifacts we could trace to their original burial sites. Descriptions of artifacts were collated with their field locations and museum provenience. This process turned up discrepancies between the original field journals and the museum's catalog accessions. We prepared as best we could. I designed a form that would document everything anyone would want to know about each artifact. Fred designed a form to document information about historic photographs in the museum's archives.

Winston Hurst, one of our advisors and then Curator/Archaeologist at the Edge of the Cedars State Museum in Blanding, maintained great patience with our questions. As time drew near to go to New York, Ann Phillips and I encouraged him to join us as our consulting archaeologist. His close association with artifacts from Grand Gulch was invaluable. When the time came for us to go to the American Museum of Natural History he had schooled us well in museum etiquette. We were prepared. We felt we could do a professional job. We are grateful to Winston and his supervisor for their letters of support, for Winston's guidance, and for his documentation of the artifacts both in the American Museum of Natural History in New York and in the Field Museum of Natural History in Chicago.

On the way to New York Ann Phillips and Ann Hayes made a stop at the Field Museum in Chicago to further investigate the Green and Lang collections and to reaffirm Ann Hayes's research. The greatest find of all was made; they located a large 'olla' or pot that

was part of the first McLoyd & Graham collection. It is illustrated in the catalog Green compiled once he had purchased their collection: physical proof the collection was in Chicago rather than in Pennsylvania! Wetherill–Grand Gulch Project researchers became even more determined to locate original and primary source material to trace the where-abouts of those original collections. They also confirmed that the Moorehead Collection and the one of Charles Lang were at the Field Museum.

The "Anns" could hardly wait to get this information to us in New York. When we all finally gathered from various directions, the six of us were quite a sight. Desert folks are very much an oddity in New York. Winston's red tennis shoes were like neon lights. Fred with his shock of unruly red hair and hiking boots made people wonder where he was headed, or was he just coming? Bruce Hucko, our photographer, had his trunk full of camera equipment. Ann Phillips and I just stood and laughed at the scene.

Upon arrival at the side entrance to the American Museum of Natural History in Manhattan, a smiling Anibal Rodriquez, Technician for the Anthropology Department greeted us. He was the keeper of the keys. Without him we were unable to gain access to any of the archives or collections. What a joy he was to work with. Whatever we needed, he tried his best to provide. Barbara Conklin, Curator of Textiles was also a great help. Everyone in the Anthropology Department was friendly and helpful during our two week stay. We are grateful to all of them and especially to Dr. David Hurst Thomas, Curator of the Department of Anthropology, who accepted our proposal.

After two weeks, work began to come together. The magnitude of information available dictated that the project needed to be enlarged to include all of southeast Utah. Ann Phillips became aware of missing and/or confusing transfers of collections between museums and began questioning museum ethics in the early 1900s. The puzzle grew more complicated and the pieces more intricate. We visited the Museum of the American Indian, and curator Mary Purdy lent her knowledge to our endeavors to seek answers and allowed us to view some of their collections. Nancy Rossoff helped us with the archives. Ann Phillips and Julie Johnson took the train to Philadelphia to visit the University of Pennsylvania Museum where Allesandro Pezzati was a great help assisting us with their archives. Further questions about the ownership of museum collections in the early 1900s surfaced there.

Winston's meticulous documentation of our selected artifacts at the American Museum of Natural History was a major part of our final documentation. His excitement at seeing the artifacts and his care for them made us further realize the importance of this project. Fred and Winston were also able to identify people and places in historic photographs in the AMNH's archives and trace them through journal notes back to the canyon. It distressed all of us to compare these photos with the present sites and discover the tremendous deterioration of sites in Grand Gulch over the last 100 years.

An expedition chronology developed as new collections were located and documentation for other collections surfaced. The bibliography grew from ten to eventually 65 pages; almost 300 artifacts had been photographed and documented. We had been able to create and photograph actual burial assemblages just as Fred had hoped. A thousand more sheets of new information were added to what we had already amassed over the previous two years.

By late fall of 1988 two things became very obvious. We needed to augment our funding and we needed to be recognized as professionally capable. It became very apparent that without one of us being a professional we might be barred from other archival institutions and, more importantly, would be unable to submit any proposals for funding. Proposals require a Principal Investigator (PI), in our case, an archaeologist

with a Ph.D. For funds to be granted, we needed credibility, and that was only possible by having a PI whose background met the Utah Endowment for the Humanities requirements.

Meanwhile, I wrote the grant proposal to the Utah Endowment for the Humanities. In combination with responses to our earlier questionnaire and drawing from past years as a Board member of the Communications Disorders Department at the University of Colorado, I phoned a friend whose expertise in proposal writing for the Department earned her an eighty percent acceptance rate. Other help came from the University's Development Office for Arts and Sciences.

Before I had completed the proposal, networking again came to the rescue. Cleal Bradford of the San Juan Foundation in Blanding, Utah, put me in touch with Dr. Joel C. Janetski, Curator of the Museum of Peoples and Cultures at Brigham Young University. Initially, Dr.Janetski said he was too busy to take on any more responsibility. However, the next day a message on my answering machine said, "This is Joel Janetski. I am so excited about what you people are doing that if you can't find anyone else to be your Principle Investigator, I will be." What music to my ears!

Joel's name went into the proposal, the first I had ever written, to the Utah Endowment for the Humanities. We hoped they would grant funding for compiling our information into reference form. They asked us to also submit the same proposal their next term and perhaps they could help us further.

I am sure that the following recommendation by Winston Hurst also helped us to obtain the two grants:

"This project is of great importance for several reasons: it promises to bring information together for the first time which will focus scholarly attention and interest in a poorly studied area, the Basketmaker people; it requires no physical impact to the archaeological record—it is nondestructive, and the resultant information bank will encourage nondestructive use of historical and museum resources by archaeologists; it will send a message to the local population that Grand Gulch collections are secure, sound and accessible for legitimate research, contrary to lore, which has been used to justify illegal digging to expand local collections. No scholar, museum or research institution should hesitate to support and encourage this kind of citizen involvement."

That fall we made a special trip into Slickhorn Canyon, one of the side canyons to Grand Gulch. We urged our Manhattan hostess, Linda Asher, to join us. After all, living in her home for two weeks was a tremendous donation to the cause. Besides, she had become interested in the project, sat in on our late night "bull sessions" and had become equally interested in what we were doing. We said, "You have to come out and see this country." She joined us and lost her heart to the Southwest.

About this time, Fred and I were invited to take part in the hundred-year celebration of Wetherill's discovery of Cliff Palace in Mesa Verde. It seemed fitting since we were using the name Wetherill in the title of our project. In addition to bringing us "out of the closet", we would have an opportunity to meet some of the Wetherill descendants. December 17–18, 1988, found us at Mesa Verde, nervous and anxious to see how we were received.

Fred's paper was titled: "The Handwriting on the Wall." He covered the Wetherill and McLoyd/Graham expeditions and talked about the inscriptions that are in Grand Gulch and the importance of recording them. Dale Davidson, BLM Archaeologist based in Monticello, talked about "The Wetherills in Southeast Utah: Southwest Beginnings and Archaeological Insights." My paper introduced the history of The Wetherill–Grand Gulch Research Project, pointing out that it was an avocational research design.

There were a dozen or more Wetherills there and all of them were very excited about what we were doing. We would later get much help and information from Tom and Wren Wetherill of Farmington, New Mexico, Marietta Davenport from Marble, Arizona, and Carol Ann Wetherill of Monte Vista, Colorado.

In early 1989, Nancy Maryboy laid the groundwork for research in the LDS Church Museum in Salt Lake City. We were determined to leave no stone unturned. We descended upon Salt Lake City with several goals in mind. One was to do research at the Church Museum; another was to visit the Utah Historical Society and the LDS Geneological Library.

At the Church Museum, Mr.T.Michael Smith was extremely helpful. We found their Lyman and Lang collections scattered throughout the museum and stored in several places. Artifacts were stored among clothing, machinery, wagons, etc. from the time the Mormons settled Utah. A further research goal could be to physically bring together the parts of each collection from their different places.

Despite previous dead-ended inquiries to the Utah Historical Society regarding an issue of *The Illustrated American* magazine, we followed up with a personal visit. Low and behold, they did have it! That issue contained articles about the 1892 expedition headed by Warren K. Moorehead, whose collection and corresponding archival information we had located the previous fall at the Field Museum in Chicago. Another piece to the puzzle was found! A complete photocopied set of all 16 articles from The Illustrated American is now available in the Wetherill–Grand Gulch Archive at Edge of the Cedars Museum in Blanding. For a listing of the articles, see the References Cited section of this volume under Anonymous, Gunckel or Moorehead.

From the beginning of the project we had committed to a photographic exhibit at the Edge of the Cedars Museum. It never occurred to us that we might be able to get artifacts "on loan" from some of the eastern museums. What a grand surprise it had been to receive loan application forms from the American Museum of Natural History. Never had we dreamed it would be possible to have any of those precious items on loan. However, the Edge of the Cedars did not meet museum standards for security and environmental control. When Mr.Don Hague, Director of the Utah Museum of Natural History, heard about the project, he expressed an interest in having an exhibit there. The picture again changed. The Utah Museum of Natural History met "loan" standards and it would be possible to have actual artifacts in an exhibit. This presented another problem. We did not want to by-pass the Edge of the Cedars people who had given us so much support.

I phoned Stephen Olsen, Manager of the Edge of the Cedars Museum, and Winston Hurst to see what their reaction was to such an idea. Much to my relief they said by all means, if the Utah Museum of Natural History was interested and could get loan items, that was the best place for an exhibit. If the exhibit subsequently travelled and could come to their museum without the artifacts, they would be happy with the scaled-down version. It was decided that we would negotiate with the Utah Museum of Natural History. While we were in Salt Lake we met with Don Hague, Director, and his assistant, Marilyn Ellingson. It hardly seemed possible that there would be a chance for an exhibit in a large museum like the Utah Museum of Natural History. We all came away from that first meeting flying very high.

Each time we visited a museum or met with new people who might have information we needed, our adrenaline began pumping a little faster and our energy was renewed.

It was spring of 1989 and time for another signature documentation trip. This time we tried using horses to carry our loads. Our goal was to document the middle section of the canyon. Ken Sleight was our packer, and although it made the trip much easier not having to lug huge frame packs, we all were convinced that horses caused too much

damage to the fragile ecosystem in the canyon. I for one never will go into Grand Gulch again with a horse.

About this time our first grant came through from the Utah Endowment for the Humanities. It was money we needed badly. It was earmarked not for travel to Chicago, but for compiling the massive mound of information mostly amassed by Ann Phillips, and from others as well. It was also time to re-submit the proposal in hopes of obtaining funding for the symposium. I was very grateful to Cleal Bradford for having introduced me to the director of the Humanities Council, Delmont Oswald. It was helpful to know how to effectually re-submit our proposal.

From the beginning of the project we had tremendous support from many professionals. The numbers are staggering. The list of advisors is impressive (Appendix E). Early in the project Fred Blackburn had introduced us to Dale Davidson, archaeologist with the Bureau of Land Management in Monticello, Utah. Grand Gulch fell under his jurisdiction. The help and guidance he gave me and the project through the years were endless. The College of Eastern Utah was our major sponsor. Kay Shumway, Associate Dean on the San Juan Campus in Blanding, provided continuing support, and Cleal Bradford, Director of the Four Corners Study Center and San Juan Foundation, became our fiscal agent once funding was received. Don Burge, Curator of the College's Prehistoric Museum in Price, and the museum Archaeologist, Pam Miller, remained staunch supporters.

Victoria Atkins, Archaeologist at the Anasazi Heritage Center in Dolores, Colorado, and her boss, Shela McFarlin gave freely of their time in the early stages of planning for the symposium and museum exhibit. Victoria was always available to answer questions. Shela suggested the title of the symposium we hoped to stage, Anasazi Basketmaker Symposium.

There were other people in Colorado who counseled us on aspects of an exhibit, in particular Nancy Markham, Coordinator at the University of Colorado Heritage Center. Friends and family were an ever-ready source of help: Dave Phillips, Dr. Don Eicher, Marge Quist, Ann and Gary Moller, Ken Evans, Russell Hayes and Maddy and Tom Goldhawk. Others who gave freely of their time and those who contributed generously were Vaughn Hadenfeldt, Glenwood Springs, Colorado; Dr. and Mrs. Harold Manhart, Montrose, Colorado; Mr. and Mrs. John O. Ross, Steamboat Springs, Colorado; Mr. and Mrs. William Eck, Boulder, Colorado; Mr. and Mrs. John Ross, Steamboat Springs, Colorado; Mary Reich, Boulder, Colorado; Dr. Robert A. Heyl, Cortez, Colorado; Mr. and Mrs. Tom Wetherill, Farmington, New Mexico; Ms. Verna Holdeman, Bountiful, Utah; Mr. and Mrs. Russell Peterson, Fruit Heights, Utah; Ms. Mary Gesicki, Sandy, Utah; Mrs. Ruth Casselberry Henson, Salt Lake City, Utah; Mrs. Claire Davidow and Mr. Nick Prokus, Highland Park, Illinois; Dr. William Lipe, Pullman, Washington; and my brother and his wife, Mr. and Mrs. Tom Meiklejohn, Fond du Lac, Wisconsin. The list goes on. The project truly was a team effort.

The fall of 1989 brought another signature documentation trip, this time to Polly's Island. During the fall Ann Phillips not only visited the archives at Mesa Verde, but made a special trip to the Museum of the American Indian and American Museum of Natural History to gather information on the division of the Hyde's Collections. She also uncovered some important documents concerning the removal of a portion of the Wetherill collection from the American Museum of Natural History. On the same trip Ann visited the Peabody Museum in Boston where she located the C. Viets Collections made near Cortez in 1889. She also determined the role F. W. Putnam had, as curator of the Peabody Museum, in detailing the methodology and of recording and excavating early archaeological collections.

Figure 2.1 Winston Hurst, Fred Blackburn and Julia Johnson review collections documentation at the Field Museum of Natural History, Chicago. (Photograph by Bruce Hucko)

Before the year was out Fred, Julie, Ann Phillips and Victoria visited Tom and Wren Wetherill in Farmington. They were gracious enough to let us peruse their Wetherill family archives. Many important letters and documents vital to the project surfaced. Reading through the list of visitors in the 1889-1901 ledger from the Wetherill Ranch outside of Mancos, Colorado, helped us identify and date names we had found elsewhere in wildly scattered documents, and made coordinating information easier. This assisted in our reconstruction of the history of expeditions to southeastern Utah. Best of all was discovering an original Wetherill family map used in their explorations of the Colorado Plateau after 1889.

That word "M O N E Y" kept cropping up periodically as expenses continued to build. There was the printing of the pictures Bruce Hucko had taken in the American Museum of Natural History. There was the cost of travel to Chicago to photograph and print the Green and Lang collections housed there. With few funds left, we decided to travel to Chicago by Amtrak. We could accomplish a lot and make some important decisions with all team members together.

Ann Hayes had grown up in Highland Park, the site of the World's Columbian Exposition in 1893. Naturally Ann's research interests lay in the history there. Her mother, Mrs. Claire Davidow, became interested in our project. During our week in Chicago, she provided the badly needed housing for us three ladies. Nick Prokus, a friend of my brother,

housed the three men. Coincidentally, their homes were close enough for us to pick each other up in our rented car for travel to and from the museum.

Field Museum collections that were photographed were the Ryerson, Lang, Green, and Moorehead Collections. We had only one week, rather than the two we had had in New York, to take photographs. We were not allowed to run through the lunch hour, so our actual hours were shortened. It was a very tense week. Fred's identification of sites and people again proved valid. We are indebted to Jonathan Haas, Vice President of Collections and Research at the Field Museum, for the help he and his staff gave us.

One startling thing that came out of the Chicago research and photo session was the discovery that only five arrowheads or projectile points of over one hundred removed from Polly's Island were still with the collections. Winston and Fred were sure they would find the entire collection. When we inquired about the rest of them we were horrified to hear that portions of this collection had been traded to a street dealer in 1902. What could we say?

As information surfaced from the American Museum of Natural History and the Museum of the American Indian Heye Foundation, both in New York; from the Pennsylvania University Museum in Philadelphia; from the State Archives in Santa Fe, from California; from Chicago's Field Museum of Natural History; and from New Orleans, Colorado, Arizona and Utah, more and more facts fell into place. We began to feel an important bond with the Basketmakers—our mission to tell their story looked promising.

It was time to think of the symposium. With a one woman office, things had be to prioritized. In October 1989, the original proposal, which received only partial funding, was re-submitted to the Utah Endowment for Humanities. We hoped funding would come through to pay for all we were planning. The Anasazi Basketmaker Symposium would be Memorial Day week-end in 1990, the hundredth anniversary of the first expedition into Grand Gulch. We continued to approach other funding sources and contributions were received. The Phillips' have a friend, Dorothy Bailey, whose previous job was staging symposiums. She provided the guidelines for organizing a symposium. I am deeply indebted to her for her help and guidance.

Plans were made for a poster to advertise the symposium. Dan Ginsberg, a member of my writing group, volunteered to do the design, but other responsibilities interfered. We were determined to undertake our project professionally. Finally, long after the deadline set for the poster, I reluctantly took it to another Boulder friend of mine, Bob Bush of Concepts 3. Now there was a fee to be paid. However, as a contribution to the project, he charged us the bare minimum. With his help in directing me to a printer who would not charge an arm and a leg, there finally was a poster by December of 1989. Grant monies would not cover this. Unfortunately not many posters sold, but hundreds were sent out to museums, universities, archaeological societies, and others interested in the Southwest to promote attendance at the symposium.

Speakers were needed. Fred Blackburn, Victoria Atkins, Dale Davidson, Joel Janetski and others directed us toward those who might present papers at the symposium. Our experience at the American Museum of Natural History had been received very well by the Anthropology Department there. We invited the director, Dr. David Hurst Thomas. Regretfully, his summer field work schedule kept him from accepting. Fred had worked on signatures with a school teacher from Lee's Summit, Missouri, James Knipmeyer. We thought a paper about signatures he had discovered would be in order. We needed someone to talk about rock art; Fred suggested Sally Cole.

Because we were hoping to bring about some changes in the management of Grand Gulch and other similar canyons, we wanted

some input from the Bureau of Land Management. Not only did we want to hear from those directly responsible for the future of southwestern archaeological treasures and resources in the field, but we wanted to hear from the management at the State Office. Therefore, both the San Juan Resource Area Archaeologist, Dale Davidson, and State Director, James M. Parker were asked to give papers.

Fred also had been closely associated with Dr. William Lipe, Research Director at Crow Canyon Archaeological Center in Cortez. Dr. Lipe has published numerous papers on the Anasazi of Cedar Mesa and was involved in the Dolores Project done by the US Bureau of Reclamation. His archaeological excavations in the Four Corners area were vast. He certainly would add to the program.

Another person Fred had worked with was invited to give a paper. Dr. Ray A. Williamson, Senior Associate in the Office of Technology Assessment of the U.S. Congress, and Project Director of Technologies for Prehistoric and Historic Preservation, had a great interest in our research. He also had been a Smithsonian Fellow in the study of the astronomical practices of prehistoric and historic Native Americans and was involved in the Society for American Archaeology Planning Committee: "Saving the Past for the Future" which fit right in to our goals.

Joel Janetski suggested Dr. Christy Turner and Dr. Francis Smiley. Dr. Turner, a professor in the Department of Anthropology at Arizona State University, would bring to the symposium knowledge from his studies of skeletal remains excavated from sites in the Southwestern United States. Dr.Smiley, Curator at the Center for Archaeological Investigations at Southern Illinois University, had been studying early agriculture at the Black Mesa Project just fifty miles south of Grand Gulch. We were delighted when both accepted.

With input from team members and friends, it began to look like the program for the symposium would be a great one—providing the grant money would come through. And it did! In early 1990 we received word that the second grant proposal to the Utah Endowment had been accepted!

Somehow we worked another Grand Gulch signature documentation trip in and even located a Reverend Green signature, the same man who had purchased the first McLoyd & Graham Grand Gulch Collection in 1891.

Our next challenge was how to contact a sufficient number of people to draw at least 250 to the symposium to hear our story and to witness the culmination of the project. Phone calls and letters to the BLM in Monticello, the archaeological societies in the Four Corner states, the Colorado Mountain Club, museums, universities, and colleges resulted in our receiving four very large mailing lists available on labels. With these we were able to mail about 4,000 announcements. I presented slide shows about the project to clubs, archaeological societies and universities in Colorado, New Mexico, and Utah.

Using the talents of team members, after what seemed like months, the Basketmaker Symposium announcements were ready to be printed. Ann Hayes' artwork was gorgeous. The overall lay out had been accomplished jointly while we travelled to Chicago on Amtrak. Dave Hitchcock of American Graphics in Boulder, Colorado, and Scott Brunk of Continental Graphics in Broomfield, Colorado, generously reduced their fees for layout and printing.

There were several aspects of a large mailing that required help. One, postage would be high for a bulk mailing of this size. Two, labeling 4,000 pieces of mail, sorting them and getting them ready for a bulk mailing would not only take time, but would be costly.

The first problem was minimized by getting some help from the BLM in Monticello which mailed the announcements that went to their mailing list.

The project's sponsor, The College of Eastern Utah, had a bulk mailing permit. If we labeled and sorted everything, they would mail them from Blanding. The Boulder Sheltered Workshop welcomed mailing jobs such as ours and at a reasonable price. Therefore, labeling and sorting went to them. Before we knew it the announcements were in the mail.

We didn't exactly hold our breath to see if we'd have enough registrations (250) to make the symposium a success, but we were anxious to see if there would be a response. What a thrill when the first registration came in February with an actual check! It turned out to be Ann Phillips' parents, longtime residents in southwestern Colorado. How great! And more continued to pile in.

Trying to stage a large symposium in Blanding, Utah, from Boulder, Colorado, presented other problems. When the project was in its infancy we thought the one-hundred-seat auditorium at the Edge of the Cedars Museum would certainly be large enough. But as the project grew and interest became obvious, we realized we needed a larger facility. Fortunately, the tiny community of Blanding, Utah, has a lovely new high school auditorium with a seating capacity of 750. Arrangements were made to rent the auditorium for the Memorial Day week-end at a very nominal fee.

Each time I spoke with someone from Blanding about my concerns over housing, food, etc. for 250 people, I would get another clue as to how a small community works to accomplish major events. I learned that the High School Drama Department needed money. The students and their mothers would be willing to prepare and serve hot lunches in the school cafeteria. The Girls' Tennis team, advised by Kathy Hurst, could turn several large class rooms into lounges for relaxing during breaks from sessions. They would also make cookies, pumpkin bread, etc. and sell them and drinks to earn the money they needed to attend out of town tournaments. To our amazement, they even provided a simple breakfast at the school so the speakers would not have to get caught in the mobs at the three local restaurants.

The local motels were willing to give us a price break for the speaker participants. The grant money from UEH would pay for bringing the participants to Blanding and feeding and housing them. The BLM was willing to host an evening barbeque catered by the local Lions Club. The Four Corners Cultural Center near the College would sponsor a Navajo Taco Supper. All of these things were arranged on the phone, but I was not going to be happy without a trip to Blanding in early May to make certain everything would go without a hitch.

Another delightful surprise was that a bed and breakfast in Monticello, The Grist Mill Inn, would prepare food for a reception at the Edge of the Cedars Museum. A meeting with the ladies there and seeing a lovely B & B in a most unlikely place added to the fun of making the plans. In one day at Blanding I was able to meet with everyone involved. This included the College, the Museum, the motels, the police, the Mayor's office, the people at the high school which included meeting the students who would operate the lights and sound system, the grocery store to let them know that 500 people (yes, by now 500!) would be in town that week-end, even the florist. Things had to go just right. The local archaeological society volunteered to staff the registration desks. By the time I headed back to Boulder I felt much better about how things would go.

In Boulder, Ann Phillips and Ken Evans were working feverishly to compile an archival index now 75 pages long on a computer program. The midnight oil burned on and on. Finally Ann had assembled 10 file crates of information plus the books of photographs that would be turned over the the Edge of the

Cedars Museum. A last minute glitch from the Edge of the Cedars director Steve Olsen almost was a crushing blow. He had to get permission from the State (the museum being run by the State) to accept our files and there wasn't enough time left. More phone calls and networking finally resulted in the necessary permission.

Originally we had planned two field trips for the third day of the symposium. The response was so great that we finally found leaders for seven field trips around the area.

Dr. Don Eicher, geology professor at the University of Colorado and friend of mine, presented the final computer list of registrants. We were amazed there would actually be 500 people present to hear our story and be a part of what now was a history-making event.

The last major operation was the stuffing of 500 registration envelopes. A frantic call for help went out to friends who had been on several of our documentation trips. One entire day was devoted to stuffing and labeling envelopes. At last we were ready!

Quietly, word had come to me that the United States Department of the Interior, Bureau of Land Management was going to present their highest annual award to the Project members (Appendix F). It was in appreciation of an exemplary contribution to the conservation and management of natural or cultural resources of the United States through our volunteer service for America's Public Lands. I kept this to myself, wanting the other team members to be surprised. I believe they were. The symposium was a resounding success, and the participants received several standing ovations for their efforts—one when 13 individuals, their arms loaded, carried the archives to the front of the stage—a culmination of four years worth of work.

With the symposium now behind us, the next goals on the list are the exhibit and book. In April and May of 1991 fifteen of the symposium speakers and other interested people made a trip into Grand Gulch to brainstorm for exhibit ideas. Loan applications are being made to the American Museum of Natural History and the Chicago Field Museum of Natural History in hopes the exhibit will include some of the real artifacts which were removed from Grand Gulch. Plans for the exhibit are moving ahead at the Utah Museum of Natural History with involvement by some members of the project. Fred Blackburn and Ray Williamson are busy writing a book which will be published by the School of American Research in Santa Fe. Research continues in other areas of Grand Gulch and Basketmaker research through the Wetherill Projects at University of Colorado Cortez Center.

Bruce Hucko's traveling exhibit of photographs taken at both museums, on display at the Edge of the Cedars Museum during the symposium, has now traveled to other museums, i.e the Anasazi Heritage Center in Dolores, Colorado. It will continue to travel as advertising for the exhibit that will be held in the Utah Museum of Natural History in Salt Lake City in commemoration of the 1996 Utah State Centennial.

This is the story of the Wetherill–Grand Gulch Research Project. What follows are the papers that were presented during the Memorial Day week-end 1990 at the Anasazi Basketmaker Symposium in Blanding, Utah.

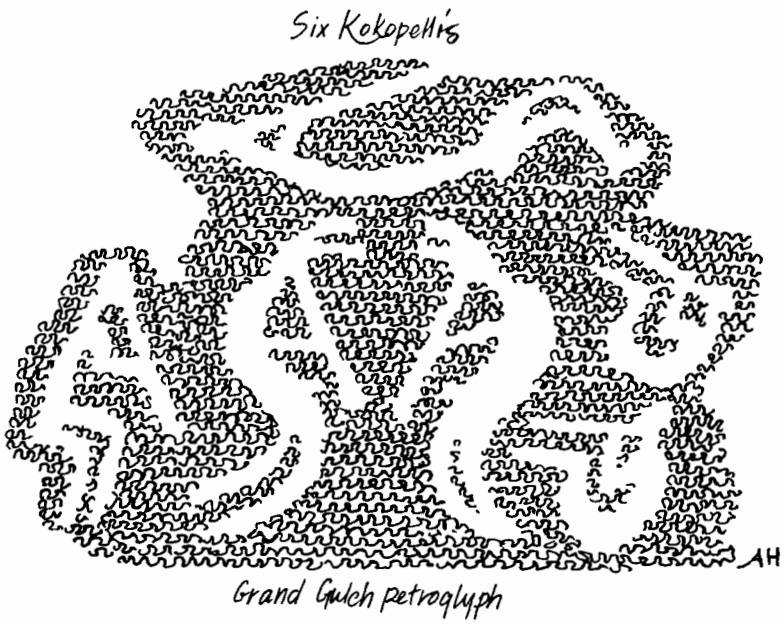


Figure 3.0 Drawing of Six Kokopellis (Drawing by Ann Hayes)

Some Historic Signatures of the Four Corners Region

James H. Knipmeyer

Introduction

Geographically, the Four Corners region that surrounds the point where the states of Utah, Colorado, New Mexico and Arizona come together is a portion of the Colorado Plateau. Here I have been locating and photographing old, historic inscriptions of explorers, trappers, prospectors and settlers since 1976. However, for this paper, I am restricting the area covered to that country lying east of the Colorado River, primarily in southeastern Utah but also including parts of the Navajo Indian Reservation in northern Arizona.

By the term "historic" signatures, I am using the historical starting point of 1540 A.D., when the Spanish expedition led by Francisco Vasquez de Coronado first entered what would eventually become the American Southwest. Two of his lieutenants, Pedro de Tovar and Garcia Lopez de Cardenas, made the first recorded European visits to the Four Corners region (Forbes 1960).

Most of my inscription hunting and photographing have been of those that predate 1900, unless the inscription was historically significant in some way. It is, however, somewhat difficult to determine a cut-off point chronologically speaking or even, in some instances, to decide what is significant and what is not. How does one determine what is "historic" and what is simply grafitti? Someone a hundred years from now may have a completely different opinion.

To date, I have recorded over 400 signatures from the Four Corners region. This paper will give examples of some of these signatures in their historical context, as they relate to the chronological history of the area from early Spanish to modern times. It will also place in an overall perspective the names and dates found by Fred Blackburn and other members of the Wetherill–Grand Gulch Research Project team in Grand Gulch, Utah (Blackburn 1988).

Signatures

Historically, humans have always had the urge to leave something behind, a "Kilroy was here" type of reminder. More than likely at least a few of the petroglyphs and pictographs that are found over the entire Colorado Plateau area might very well be "signatures" of a sort left by prehistoric inhabitants.

Like these ancient pictographs and petroglyphs of Native Americans, the historic signatures in the Four Corners region are primarily rendered in two ways: those that were drawn or painted onto a rock surface; and those incised or carved into the rock. The former have been done in charcoal, axle grease, with lead bullets or pencil, chalk and paint. The latter have been punched out with nails or picks, scratched with knives or files, or carved more deeply, possibly even with hammer and chisel.

Three types of locations have been utilized for the vast majority of the historic signatures I have found and photographed. Many are found at camping places, usually next to or very close to a source of water. Examples of this in the Four Corners region are the scores of inscriptions on a rock face near Kane Springs, north of Monticello, Utah, and the many names and dates found in the alcove above Tse Yah Toe Spring on the Navajo Reservation of northern Arizona. A second location type is on or near an unusual or striking feature, such as a rock formation or an archeological site like a pueblo ruin or cliff dwelling. Examples of this type location are Delicate Arch in Arches National Park and Long House Ruin west of Marsh Pass in northern Arizona. The third location type is on or easily visible from a route of travel such as the so-called Rainbow Trail which encircles Navajo Mountain on the line between Utah and Arizona. Inscriptions in all three types of locations declare to the next person to come along that "I was here."

The content of historic signatures varies. Most include a name and a date, though many are simply a name or initials while some give only a date. Occasionally, additional information is given: where the signers were from; where they were going; what they were doing or had done. Some inscriptions do not strictly come under the heading of "signatures". They are simply statements, some biblical or religious in nature, some a declaration of a feeling or attitude. Near the top of San Juan Hill, west of Bluff, Utah, is the deeply carved message "We Thank Thee Oh God" (Figure 3.1). West of the Clay Hills, near Lake Canyon, is a name and date with the succinct statement "Heap Hot". Other inscriptions simply give the name of some geographic feature. "Giants Cave" is carved on the inside of what is now more commonly known as Fishmouth Cave on Butler Wash west of Blanding, Utah.

Spanish

Much of the tide of western United States history has flowed through and around the Four Corners region. Luckily for historians today, some of the participants left a record of their passing inscribed upon the rock. For two and a half centuries after

Coronado's entrada, the Spanish made cursory explorations westward and north-westward from Santa Fe. Some, no doubt, were interested simply in accumulating geographical knowledge, but many were searching for mineral wealth in the form of gold and silver (Hammond 1956). Pedro de Montoya, who left his name and the date April 20, 1666, on a rock at Tuye Spring east of the Hopi Mesas, very well may have been such an explorer.

The above is the earliest inscription that I have found in the Four Corners region. The name T. Pepper, with the apparent accompanying date of 1617, was carved into a boulder near Cortez, Colorado. However, since the date would be during the Spanish period while the name does not seem to be Spanish, the authenticity of this inscription is considerably in doubt.

Trappers

By the 1700s, the prospecting for precious metals had, for the most part, given way to trade and barter with the Native American inhabitants of the region for a new source of income–furs and pelts. During the first half of the 1800s, and especially after Mexican independence from Spain in 1821, numbers of American mountain men entered the area also in search of furs (Weber 1971).

The names of Denis Julien and J. D. Smith, located within a few miles of one another north of Moab, Utah, are both dated 1844. Julien was a French-American trader and trapper who ranged all the way from Cataract Canyon in Southern Utah to the Uinta Basin in the northeastern part of the state. Included with the Smith signature are the initials R. M. F. T. Co, which probably stand for the Rocky Mountain Fur Trading Company (Figure 3.2).

Military

After the decline of the fur trade in the late 1840s, Americans again made their way into the Four Corners region, but this time for an entirely different reason. They were United States military troops, more often than not in pursuit of Navajos following Navajo raids against New Mexican settlements (McNitt 1972).

A trooper named A. Cline left his name and date on an inside wall of Long House Ruin in northern Arizona. A few feet away is the name J. W. Walker, with the date September 12, 1859. Both were members of a military reconnaissance under the command of Captain John G. Walker, which camped overnight at the ruin.

The inscription, "Navajoe Expedition October 21st 1860" is located on a cliff wall along Chinle Wash near Rock Point, Arizona. This is a record of the punitive expedition led by Lieutenant Colonel E. R. S. Canby in the fall of 1860. On the same rock face is the inscription "C. B. Brady 7th Dragoons" who was a member of the expedition. To the northwest, at a pueblo ruin, the name H. R. Selden and date October 26, 1860, mark the farthest advance of Colonel Canby's march. Like Captain Walker's party, some of Canby's troops made their way to what is now known as Long House Ruin.

The final large-scale U. S. military campaign against the Indians was the so-called "Navajo round-up" led by Kit Carson. The inscription "W. R. Dodd, Company K, 1st Cavalry, New Mexico Volunteers," in Canyon de Chelly, Arizona, was made during this campaign in the winter of 1863–64.

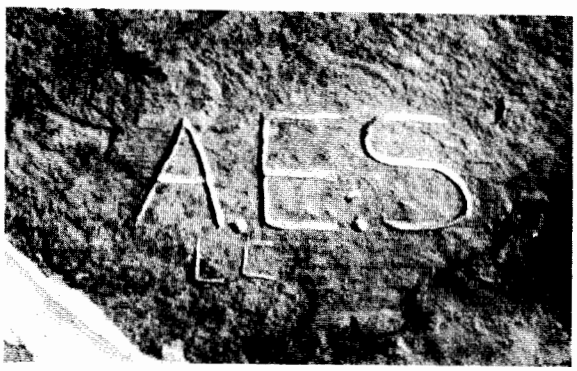
Surveyors

After the supposed subjugation of the Indians, exploration of the area commenced anew. Again, as with the early Spanish, this was not so much exploration for geographic knowledge, though that was certainly a part of it, but a closer examination by scientists and map-makers. Foremost of these in the Four Corners region were the surveys of the early 1870s under the direction of Ferdinand V. Hayden. Instructed by Congress to make a thorough geographic and geologic survey of the territories west of the 100th Meridian, Hayden used eastern Utah and the Four Corners as his western boundary (Bartlett 1962).

Harry Lee was a guide for the photographic division of the Hayden Survey under the leadership of William H. Jackson. During the last few days of July, 1875, they traveled down and explored Montezuma Creek, in southeastern Utah. It was probably at this time that Lee left his name and the year carved into the cliff near what is now shown on maps as the Perkins Ranch (Figure 3.3). Edwin A. Barber was a journalist attached to the Jackson party. On August 4 they visited what they called Casa del Eco on the San Juan River east of Bluff, Utah, and Barber left his name on the wall of the alcove sheltering the ruin.

Cattlemen

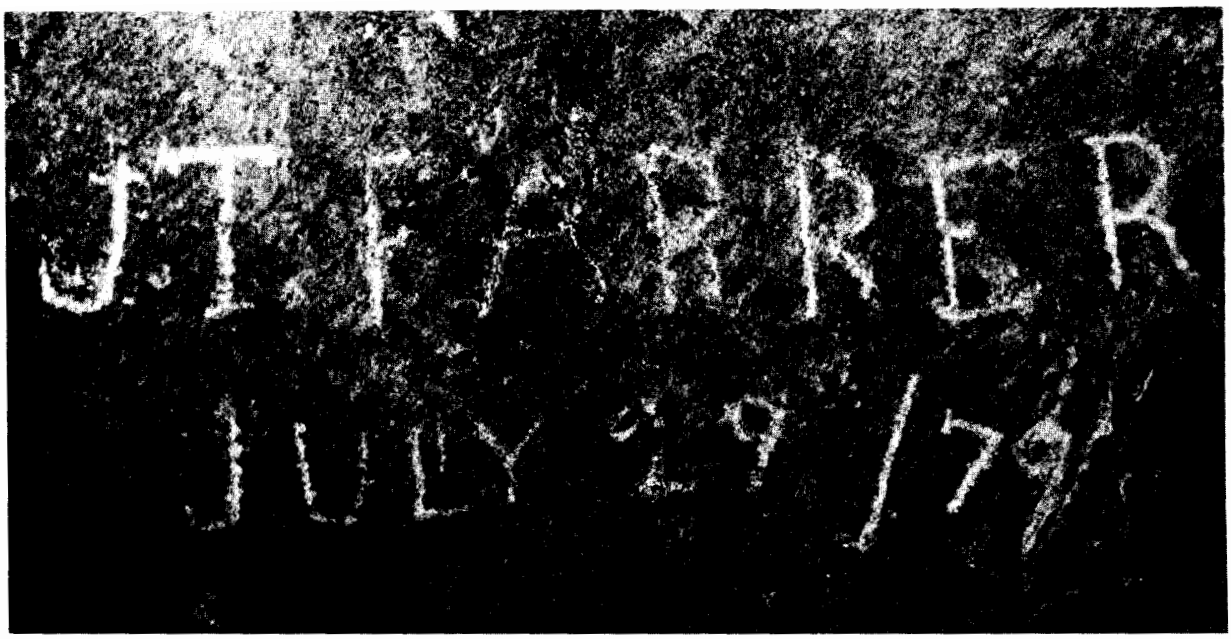
Until about 1878, the Four Corners area was merely a region to pass through or to visit for comparatively short periods of time. Then came the first permanent settlers, cattlemen from Colorado (Sheire 1972). Among the earliest stockmen was the family of Thomas Ray, who first brought cattle to the southern slopes of the La Sal Mountains in 1878. The name V. A. Ray, near Kane Springs north of Monticello, may be connected with this family as is, perhaps, the inscription "C R 1878" north of Moab, Utah.



The person who carved the initials "A. E. S." over the pair of letters "LC" in a cave on a branch of Butler Wash, west of Blanding, was more than likely a rider for the Lacey Cattle Company, one of the early outfits that came to southeastern Utah about 1880 (Figure 3.4). The name Lacey was often shortened simply to the letters LC. Butler Wash and other northern tributaries of the San Juan River were used as winter ranges for stock.

In 1883, several of the smaller cattle outfits were bought up by the Kansas and New Mexico Land and Cattle Company, in Utah more familiarly known as the Carlisle Company. With its headquarters north of present-day Monticello, its foreman from 1887 until 1897 was the well-known and colorful William E. "Latigo" Gordon. On a boulder in the same cave as A. E. S. of the Lacey Company, is the faint inscription "Latigo Gordon 1896."

Accompanying the cattlemen, and sometimes coming from their ranks, were rustlers and bandits (Kelly 1959). The family of William McCarty came with the Rays to the La Sal area. One of the sons, Tom, who left his name carved near Kane Springs, eventually entered into the life of an outlaw and was associated with the infamous "Wild Bunch."



Jack Cottrell, whose name appears on a cliff along Indian Creek northwest of Monticello, was a foreman for J. B. Buhr at what came to be known as Robbers Roost. While he was probably not an outlaw, many of that breed did ride for Cottrell off and on during the early 1890s.

Settlers

Mormon settlers from the more populated parts of Utah came into the Four Corners region soon after the cattlemen. They came from the north into what eventually became Grand County and from the south into present-day San Juan County (Perkins, et. al. 1957).

Among these was the Farrer family, who came to the Moab Valley in 1879. The name J. T. Farrer and the date, July 29, 1879, were left at what was known as the "Jumping-Off Place" near Moab (Figure 3.5). The Herbert S. Day family settled in Moab during the winter of 1879–80. An inscription left at the old ferry crossing of the Colorado River at Moab by a D. D. Day may be that of a family member. John H. Pace was a member of the San Juan Mission which reached the site of Bluff, Utah, on April 6, 1880. Pace left his name and the date on a cliff-side near the mouth of Recapture Wash just 11 days later.

The San Juan Mission to southeastern Utah, commonly known as the Hole-in-the-Rock Expedition, left the central Utah settlements early in the fall of 1879. From their crossing of the Colorado River they wound their way through the "slickrock jungle" of present San Juan County. Various inscriptions mark their route (Miller 1959).

Either Jesse, John or Joseph Smith, all members of the mission, could have left the name J. Smith and the dates March 5, 1880, and March 28, 1880. The former is found at Castle Ruin, west of the Clay Hills. The latter is scratched onto a cliff bordering the San Juan River between Comb and Butler Washes. Another member of the expedition, William Hutchings, left his name and the same date of March 28, 1880, along with Smith's at the San Juan. Yet another Smith on the expedition was Silas Smith, who left his name and the date of March 10, 1880, in a small cave along Castle Wash.

Preceding the actual San Juan Mission was the Exploring Expedition of 1879, which scouted the way for the later settlers. Two of

its members, John L. Butler and Hamilton M. Thornton, left their names and the date July 23, 1879, scratched into the cliff wall at what is now called Seventeen Room Ruin east of Bluff.

Many of these early Mormon settlers in the Four Corners region also turned to the cattle business like their "gentile" predecessors (Day 1958). The names W. B. Loveridge and William Somerville at Kane Springs and the inscription "B. F. Redd April 17 1891," near the mouth of Recapture Wash on the San Juan River, all represent members of families prominent in the livestock industry during the 1880s and 1890s.

Prospectors

The 1880s brought a renewed interest in the mining potential of the entire Colorado Plateau. This was centered in the Glen Canyon area on the western boundary of the Four Corners region, but miners were also closer to the Four Corners itself. Here, prospecting was carried out primarily along the San Juan River and in the Navajo country, from Monument Valley to Navajo Mountain (Crampton 1959).

Emery L. Goodridge carved his name and the date, November 2, 1882, next to the San Juan River just east of Mexican Hat, Utah. He was prospecting for gold and silver, but later, after the turn of the century, he brought in the first oil well in southeastern Utah. An inscription reading "G. Miller 1882" east of Navajo Mountain trading post, was undoubtedly left by George M. Miller (Figure 3.6). In an article in Denver's *Rocky Mountain News* for May 23, 1882, Miller is listed as a member of a prospecting party that had just left on a return trip to the "Navajo Mountains." His name, with the added middle initial M, also appears at Tse Yah Toe Spring, about ten miles southeast of Navaho Mountain.

Another article in the Denver newspaper, this time for April 14, 1882, tells of the return of this, or possibly another prospecting party from the "Navajo Mountains and Monumental Valley country." C. M. Cade left his name and the date, 1882, at two locations, Inscription House Ruin in a branch of Navajo Canyon and again at a small ruin just to the north in Toenleshushe Canyon. Lorenzo Reed inscribed his name in charcoal just below Cade's, as did a man named Young. The latter individual also left his name and the date of 1882, at Inscription House. All of these men were listed in the April 14 *Rocky Mountain News* article as members of the prospecting expedition.

The so-called "Bluff excitement," or San Juan gold boom, occurred along that stream in 1892 and 1893. Many prospectors for the next few years were drawn to the area, including the Honaker family from southwestern Colorado. On the canyon wall west of the mouth of Montezuma Creek is the name Silas W. Honaker and the date January 18, 1894. Just to make sure there was no misunderstanding, he also added the notation, "In A. D. "

But little of value was found along the San Juan itself, and soon prospectors were ranging up toward the Abajo or Blue Mountains to the north and Navajo Mountain to the southwest. In 1884, by Executive Order, the area from Black Mesa in Arizona northward to the San Juan and Colorado Rivers in Utah had been set aside as a "reservation for Indian purposes." However, in 1892, the Utah portion was returned to public

domain. No reason was given but it may have been, at least in part, in response to pressure to open the area to mining (Crampton 1964).

At least three of the inscriptions found at Tse Yah Toe Spring, south of Navajo Mountain, are probably those of prospectors headed for that peak to test its mineral potential. That of P. A. Craig is dated August 14, 1892. The others, both dated February 16, 1893, are those of M. L. Parker and A. M. Rogers. The Rogers has the added notation "Rico, Colorado."

COLLECTORS

Following the discoveries of the Wetherill brothers of Mancos, Colorado, on Mesa Verde in 1888 and 1889, a new lodestone attracted entrepreneurs and scientists to the Four Corners region (Fletcher 1977). Especially in the northern and southern tributary canyons of the San Juan River, the myriad caves and ruined dwellings of the prehistoric inhabitants of the Colorado Plateau were searched for their artifacts, including utensils, pottery and human remains. Earliest among these searchers were Charles McLoyd and Charles C. Graham of Durango, Colorado (Daniels 1976). They left their names and dates at many sites including the following: "Ch McLoyd" at Balcony House Ruin in Mesa Verde; "C. C. Graham 1891" at Turkey Pen Ruin in Grand Gulch of southeastern Utah; "C. McLoyd 1892" also at Turkey Pen Ruin; and "C. C. Graham 1892" pecked into the eastern abutment of Kachina Natural Bridge in White Canyon.

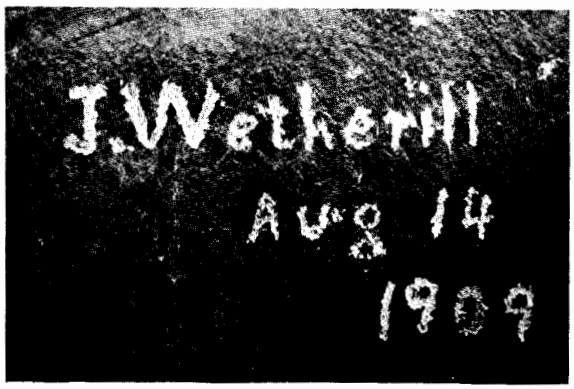
The initials "I. A. E. E. " found at a small ruin on Butler Wash stand for the Illustrated American Exploring Expedition. The *Illustrated American* was a relatively short-lived periodical of the 1890s, which in 1892, sponsored an expedition to the San Juan River area of New Mexico and Utah. One purpose of the expedition was the collection of prehistoric artifacts from the Basketmaker and Anasazi cultures (for *Illustrated American* articles see separate references cited under Anonymous, Gunckel or Moorhead for all 16 issues). The geologist for the I. A. E. E. was Lewis W. Gunckel. He carved his name, the date of April 5, 1892 and "I. A. Survey" on the back wall of Seventeen Room Ruin, east of Bluff.

The Hyde Exploring Expedition, financed by the Hyde brothers of New York, was under the field leadership of Richard Wetherill, eldest of the five Wetherill brothers. Found on a boulder in a huge shelter cave along Butler Wash is the title "Hyde Exploring Expedition" with a date of January 1, 1894.

Harry French and Wirt Billings, both members of the Wetherill expedition, were especially faithful in recording, usually with charcoal, their names and the date at various archeological sites they visited. Some of these are: "W. Billings Dec-31-1893" along Butler Wash; "H. French 1/11/94" in Grand Gulch; and "W. Billings 1894" on a cave wall in the lower part of Grand Gulch. Richard Wetherill left his name several places in Grand Gulch, at least three time with a date, but only the year–1894 (Blackburn 1988).

Grand Gulch, draining south from Elk Ridge to the San Juan River, was visited again during the early months of 1897 by another expedition led by Richard Wetherill. This time it was financed and accompanied by two Harvard men, George Bowles and C. E. Whitmore (McNitt 1957). While in Grand Gulch, James L. Ethridge was a frequent inscriber of both his name and the date. Ethridge had also been a member of the 1894 expedition, and inscriptions left by him, dated January and February 1894, and February 1897, are sometimes found together.

The 1897 expedition also visited the Tsegi Canyon region of northern Arizona. There it seems that Richard Wetherill and brother-in-law Charles C. Mason were the most frequent inscribers. At the back of the huge shelter cave containing Keet Seel Ruin is found "R. Wetherill 1897" while on the ceiling is "C. C. Mason 1897."



Tourists

The turn of the century ushered in the era of the tourist. Some, especially during the early 1900s, made significant explorations and discoveries of their own, both geographical and archeological.

John Wetherill was one of the Wetherill brothers who did archeological work in the Mesa Verde area of Colorado, the San Juan region of Utah and the Navajo country of Arizona. After 1900, John also guided many expeditions of scientists and tourists into these same places (Gillmor and Wetherill 1952). He was one of the guides of the combined Cummings-Douglass parties which made the first official discovery of Rainbow Natural Bridge on August 14, 1909 (Figure 3.7). His name and that date are carved in a small cave just to the northeast of the arch and also high upon a mesa wall above and to the west of the bridge. John probably left his initials, name and date more often in the Four Corners region than any of his four brothers. Among others, he left his name and the date, March 9, 1891, at the Long House Ruin in Mesa Verde; his initials at the Green Mask site in Grand Gulch; his initials and a date of March 14, 1911, on a wall of Red Bud Pass near Navajo Mountain; his name and May 26, 1918, north of Surprise Valley along Nasja Creek; his first initial and last name with the year 1920 on an alcove wall near Junction Ruin in Grand Gulch; and his initials and 1922 in a cave along Forbidding Canyon southwest of Navajo Mountain.

Famous western novelist Zane Grey used the canyon and plateau area of southern Utah and northern Arizona as the locale for several of his stories. He made several trips into the Navajo country, each time guided by John Wetherill (Kant 1984). In May 1913, Grey left his name and the date carved into a rock slab beneath Rainbow Bridge and in April of 1922, Grey or a member of his party, carved the name "Zane G." into one of the inside walls of Long House Ruin, west of Marsh Pass.

Located on a wall of Red Bud Pass near Navajo Mountain, the inscription "Bernheimer Exp 6 30 22" represents one of the several expeditions that were financed and accompanied by Mr. Charles L. Bernheimer of New York City into southern Utah and northern Arizona during the decade of the 1920s. The opening of Red Bud Pass marked the effective completion of what came to be known as the Rainbow Trail and opened the way for comparatively "easy" travel for tourists to Rainbow Bridge (Bernheimer 1924). Except for isolated and relatively small localities, by World War II most of the Four Corners region had been explored.

Conclusion

It is extremely important that a record be kept of these historic signatures and inscriptions. Many will not be with us much longer. Some have been and will be vandalized intentionally by modern inscribers. Some have been and will be destroyed unintentionally by the building of a dam, the filling of a reservoir, or the construction of a new bridge or highway. Others will simply succumb naturally to the concurrent erasures of weathering and erosion.

Be they names, dates or sayings, these inscriptions are a link to us from the past. They may proclaim who once passed this way. They often state when they were here. They occasionally say why they were here. They provide evidence of where they were going or had been. These inscriptions tell us something of a time that has gone before, and as such, like any fact of history, they contribute to our knowledge of today.

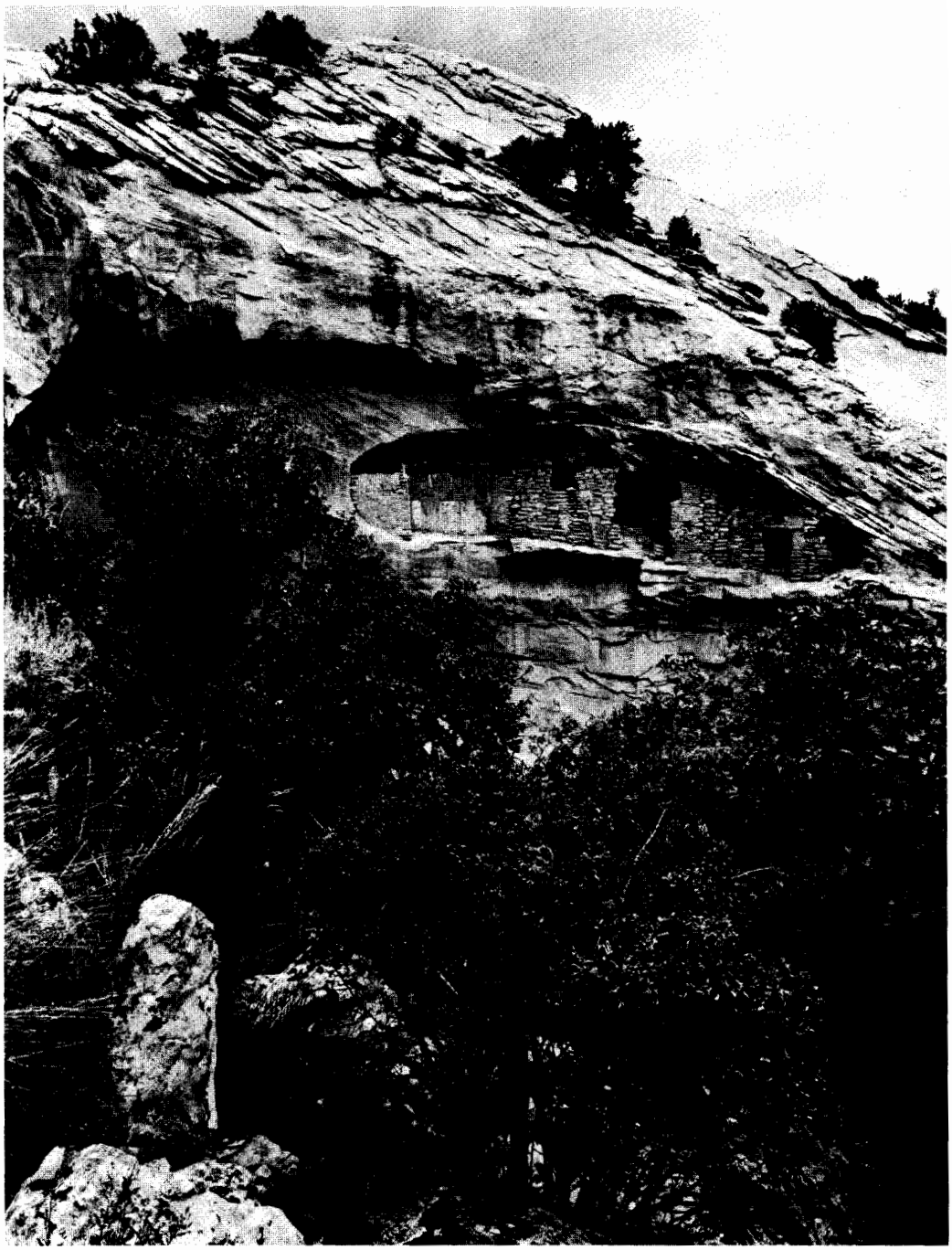


Figure 4.0 Replica photograph of unnamed site in east fork of upper Butler Wash. (Compare with Figure 4.9) (Photograph by Bruce Hucko)

Handwriting on the Wall: Applying Inscriptions to reconstruct Historic Archaeological Expeditions

Fred M. Blackburn & *Victoria M. Atkins*

Introduction

This paper presents historic inscription research and expedition reconstructions completed in the following geographical areas of southeastern Utah: Cottonwood Wash, Allen Canyon, Whiskers Draw, Butler Wash, and Grand Gulch. The basis of this research lies in the documentation of over 500 separate historic inscriptions through field notes, sketches and photographs, and their compilation into a dBASE III+ database program file. First, the inscription resource is defined, followed by documentation methodology and non-destructive recording techniques that encourage the collection of baseline data. Next, the unfortunate rapid deterioration, destruction, and vandalism of this historic cultural resource are discussed with emphasis placed on the Grand Gulch, Cottonwood Wash and Butler Wash inscriptions, along with reasons for their demise and the need to add this documentation to the archaeological record. The main body of this paper, however, lies in the application of the inscription resource in reconstructing expedition routes and artifact proveniences. Summaries of known expeditions from the 1880s to the 1920s are presented, followed by detailed routes and chronologies for the three most important expeditions: Charles McLoyd and Charles Cary Graham from the winter of 1890 and 1891, Richard Wetherill's Hyde Exploring Expeditions from the winter of 1893–1894, and Richard Wetherill's Whitmore Exploring Expedition from the winter of 1897.

The documentation work reflected in this paper resulted from a team effort of 11 separate trips led by one of the authors, Fred Blackburn, and staffed voluntarily by many talented and dedicated individuals.

Definition

El Morro National Monument near Gallup, New Mexico, exemplifies an inscription site which is managed and protected by the National Park Service. As demonstrated within this paper and at El Morro, much of the significance of inscriptions lies in their usefulness as a tool for directly tracing a part of the past.

In this paper inscriptions are defined as physical remnants of historic writing on stone or wood. Often inscriptions are signatures of expedition members. Sometimes the inscriptions are associated with written dates. They are found within the confines of archaeologically rich sites throughout the Four Corners. Inscriptions may be incised pecked or written with charcoal, bullet lead, pencil, or pigment.

Inscriptions occur as personalized records of expeditions, journeys, adventures, discoveries, social occasions, and special moments or places of remembrance and are found scattered across the landscape of the

Four Corners region. Inscriptions often provide a critical link between actual site locations and related diaries, letters, photographs and artifact collections. When this critical link is established it can serve as an on-the-ground point of reference or datum. Once this datum is known, then a whole wave of knowledge begins to form. Photographs of the historic excavations in progress can be compared to the sites today and may reveal the original provenience of collected artifacts, features that have since been destroyed and even other signatures that have faded through the years. This process formed the basis of much of the research of the Wetherill–Grand Gulch Project and became known as reverse archaeology.

Inscription style and placement may also provide the researcher an insight into the personality and character of specific events and individuals who recorded a moment in history. Often, placement of an individual's inscriptions within a site recurs predictably. High on a ledge, in an axe groove, or incised on a lintel, placement of inscriptions can soon reveal the humor and personality of the scribe. Distinguishable written signature inscriptions are visible indicators of our time on earth.

Although little has been done on a large scale to systematically record and document this rapidly vanishing resource in the Four Corners, several limited data bases exist: the Utah State Historical Society files in Salt Lake City, Utah; James Knipmeyer's personal files in Lee's Summit, Missouri (see Knipmeyer this volume); and the data base developed by Blackburn and reflected in this paper.

The importance of inscriptions is recognized, but until this paper, only on a very limited basis. Keller, Ahlstrom and Hartman (1974) discuss inscriptions throughout the cleanup report of sites in Grand Gulch. But, William Lipe accurately predicts the importance inscriptions may play in unlocking the archaeological record: "We'll keep looking for these faint old scribblings, and may someday be able to reconstruct from them the course of that first Wetherill expedition" (in Gaede and Gaede 1980: 54).

METHODOLOGY

Grand Gulch alone contains approximately 150 miles of canyon walls with an additional 150 miles of side canyon. The task of documentation confronting the Wetherill–Grand Gulch Research Project is enormous. Eleven expeditions implemented by the White Mesa Institute and the Wetherill–Grand Gulch Project have now documented 497 inscriptions.

Team members first thoroughly searched all major archaeological sites within Grand Gulch. Locations where diaries, photographs, or journals presented clues to a historic visit, camp, or excavation were visually scoured. Walls, stones, rocks, metates, lintels and axe grooves were searched for inscriptions of names that might include members of historic expeditions in the area. Since many of the inscriptions are so faint as to be unphotographable with available technology, sketch pads and pencils were used to carefully draw each inscription. Emphasis was placed on reproducing the style of the characters rather than creating an exact scaled replica. Since time was severely limited, it was felt that a consistently drawn record would serve a greater value to researchers than no record at all.

Photography of inscriptions was attempted at locations with clearly defined characters. Infrared photography or other modern technology may help in documenting marginal inscriptions, but these techniques were unfortunately beyond the scope of this project.

When recording inscriptions, an Itoya hand lens and reversed binoculars often helped reveal the faint traces of abrasion, charcoal, or lead. The signatures were not traced or rubbed, so as to prevent further deterioration of the inscription. Caution was constantly

exercised to draw only the image that was visible and to avoid prematurely identifying the inscription.

The diurnal and seasonal angle of the sun was often found to either aid or detract from the visibility of an inscription. Consequently, sites were revisited during differing light conditions and different times of the year. For example, Split Level Ruin was examined continuously throughout one day to take advantage of changing sun angle. This took patience, but was rewarded when a previously indecipherable inscription could be read.

After field sketches were completed, images were copied over with a rapidograph pen to a second sketch pad. Although this transfer doubled the probability for transcription errors, it reflected that each person has his/her own writing style, and allowed for cleanup and completion of the field notes. Based on these style observations, fragments of some previously unreadable inscriptions could be read after review of the field notes. Styles could also be cross matched with other inscriptions for verification of authenticity. Unfortunately, many inscriptions were unreadable due to advanced states of deterioration caused regularly by both weather erosion and human destruction (misguided cleaning up the canyon walls by eradicating the "graffiti").

To date 497 inscriptions have been catalogued in a dBASEIII+ file noting most of the following 19 information categories:

- date recorded
- name of recorder
- does a photo exist?
- does a sketch exist?
- last name of inscription
- first name of inscription
- inscription date
- medium used
- location
- drainage name
- other location
- condition or status
- expedition name
- expedition date
- exact quote
- comments
- USGS quad name
- UTM northing
- UTM easting

A method was devised to communicate location and condition of the inscription resource. A common terminology was developed with accompanying descriptions in order to maintain consistency for accurate statistical analyses.

The following five categories were used to describe inscriptions at the time of recording:

- Good/Readable—The inscription is readily visible to the naked eye and easily read upon approach. Letters and dates remain intact. Erosion, natural or human, is not apparent.
- Poor/Readable—The inscription is not readily visible to the naked eye and requires study or drawing to read. Letters are intact but may be extremely faint. The inscription is in danger of disappearance due to natural or human erosion.
- Poor/Unreadable—The inscription is not readable, even upon close study. It requires special techniques (described above) to decipher. Drawings must be utilized, since normal techniques in photography cannot be used. Letters within words may be partially or totally absent. Letter style comparisons must be used to help identify the inscription.
- Destroyed—Photographs or prior documentation are the only existing records of an inscription that is no longer visible or readable.
- Other—Poor documentation has resulted in insufficient data.

As with most database management software, these categories can be sorted, organized, counted and queried in any order desired.

At this time 202 of these inscriptions have been documented within Grand Gulch, 33 in Butler Wash, and 79 in Cottonwood Wash and its side drainages. See Table 4.1– Inscription Quality by Location and Date.

Correlations exist between inscriptions being in a good/readable condition if written after 1920 and in a poor/unreadable condition if written before. Data reflects a marked deterioration of the inscription resources. Grand Gulch figures indicate 74 percent of the resource in poor or destroyed condition; Cottonwood Wash figures indicate 66 percent; Butler Wash indicates 39 percent.

Current figures do not reflect inscriptions which had been destroyed prior to the beginning of this documentation. Analysis of inscriptions viewed on glass plate photographs taken between 1890 and 1897 reveals that a minimum of 50 percent of the inscriptions visible in those photographs are now destroyed. Although this glass plate photograph sample reviewed from Perfect Kiva and Cave 7 is small, it may indicate that before deterioration became pronounced there were 400 inscriptions in Grand Gulch. Now there are only 200 and of those 200 only 49 are currently in a good/readable condition. Within ten years only 12 percent of documented inscriptions may be decipherable. Without adequate inscription documentation, tracking historic expeditions through these methods may no longer be possible.

Table 4.1: Inscription Quality by Location and Date

Quality	Number of Signatures Pre–1920	Percent at Location	Number of Signatures Post–1920	Percent at Location	Total Recorded
Location: Grand Gulch					
Good/Readable	38	19.0%	11	5.0%	49
Poor/Readable	46	23.0%	1	0.5%	47
Poor/UnReadable	90	44.0%	1	0.5%	91
Destroyed	11	6.0%	2	1.0%	13
Other	2	1.0%	0		2
Totals	187	93.0%	15	7.0%	202
Location: Cottonwood Wash					
Good/Readable	12	15.0%	15	19.0%	27
Poor/Readable	12	15.0%	4	5.0%	16
Poor/Unreadable	31	40.0%	2	3.0%	33
Destroyed	3	4.0%	0		3
Totals	58	72.0%	21	27.0%	79
Location: Butler Wash					
Good/Readable	16	48.0%	4	12.0%	20
Poor/Readable	4	12.0%	0		4
Poor/Unreadable	9	27.0%	0		9
Destroyed	0		0		0
Totals	29	87.0%	4	12.0%	33

Documenting exact field location of the inscriptions also proved difficult. Archaeological site maps and Smithsonian numbers are available for only a limited number of alcoves within Grand Gulch. The site known commonly as Green Mask is among the best. Documentation here included use of the Whitmore Exploring Expedition (1897) field notes and Museum of Northern Arizona cleanup project maps (Keller et al. 1974). The Museum of Northern Arizona maps served as the base for incorporating Hyde Exploring Expedition inscriptions and Sally Cole's research notes (see Cole this volume, Figure 9). This completed documentation took at least 4 weeks of field time. It illustrates what can and should ultimately be done at each site to thoroughly document the archaeological record of Grand Gulch.

Inscription data for all sites are not as complete as the Green Mask documentation. Considering the rapid deterioration of the inscriptions and the limited time of the documentation teams, the main goal was often to locate and draw the inscriptions. Consequently, mapping of inscription locations is more general than specific. From this general information expedition routes can now be traced.

Application of the Inscriptions: Reverse Archaeology

Initial attempts at correlating historic inscriptions with expeditions and diaries began in 1976 when Fort Lewis College published a previously unknown diary of Charles Cary Graham's 1890-1893 archaeological expeditions in southeast Utah (Daniels 1976). After contacting the editor, Helen Sloan Daniels, Fred Blackburn's on-the-ground knowledge of Grand Gulch was correlated directly with the diary. Blackburn had witnessed numerous inscriptions within the canyon and was curious about their relationship to early explorers. However, most of his answers to questions lay dusty on shelves until the volunteers of the Wetherill–

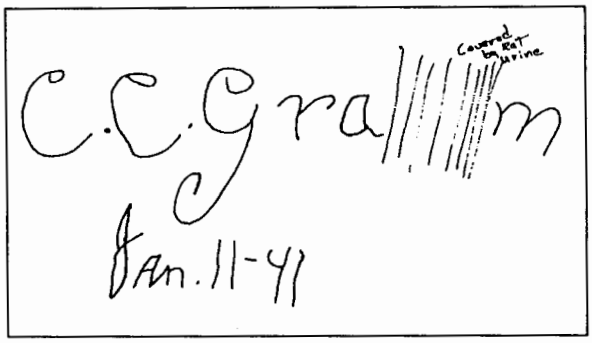


Figure 4.1 Inscription that led to the route reconstructions of the 1890–91 McLoyd and Graham expedition, from the kiva wall in Perfect Kiva, Bullet (or Graham) Canyon. (Blackburn drawing)

Grand Gulch Project helped him pursue his interests by providing countless hours of documentation and research.

During 1987 the White Mesa Institute assisted the Wetherill–Grand Gulch Project in conducting a series of expeditions into Grand Gulch. Inside the intact kiva at Perfect Kiva in Bullet Canyon they observed an inscription previously noted by Blackburn while stabilizing the archaeological site in the fall of 1974. The inscription stated: "C. C. Graham — Jan. 11, 91." (Figure 4.1). The date matched with the diary entry as the first site to be excavated in Grand Gulch by McLoyd and Graham. Projecting this single piece of information to the other locations and dates in the diary led to the discovery and verification of nearly all destinations and excavations of this first expedition. Further tracking eventually led to the matching of inscription, site, artifact, diary and photograph. This single date eventually provided enough information to reprovenience many artifacts and gave clues to other locations. Realization of the importance of inscriptions at Perfect Kiva spurred the documentation of inscriptions in other canyon systems of the Four Corners region.

Documentation of inscriptions continued to pay off, and not just in tracking well-known expeditions. Historical records (see Hayes and Phillips, this volume) indicated

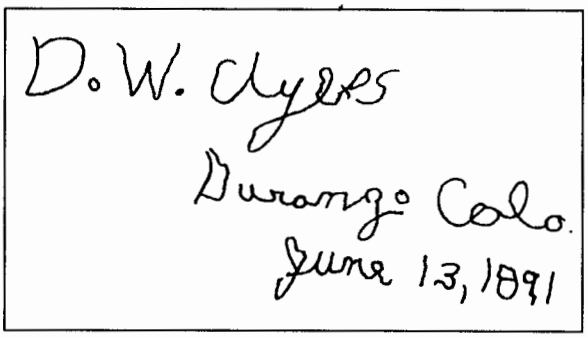


Figure 4.2 Inscription from Castle Ruin in Grand Gulch that led to the reconstruction of the 1891 Green Expedition. (Blackburn drawing)

that the Reverend C.H. Green had mounted an expedition to Grand Gulch shortly after his purchase of the McLoyd Collection in 1891. While Blackburn was teaching a group of Fort Lewis College students, a D.W. Ayres inscription dated June, 1891 (Figure 4.2) was discovered in Castle Ruin one fourth mile up canyon from Grand Gulch's junction with Bullet Canyon. Ayres's inscriptions were eventually found by the Wetherill–Grand Gulch team in two more locations: at Polly's Island in Middle Grand Gulch and in Step Canyon. The Ayres inscriptions at Polly's Island and Castle Ruin are accompanied by other inscriptions, apparently from the same time period. The team soon realized that both of these locations had been camps for McLoyd and Graham during the winter expedition of 1890-91, but puzzled over the coincidence and probability that these expeditions were related. Shortly after these inscription discoveries, members of the Wetherill–Grand Gulch Project journeyed to the Field Museum in Chicago for continued research work on the McLoyd and Graham and Charles Lang Collections. While looking through the Field Museum's photographic collection, Blackburn found a mislabeled photograph from Grand Gulch. Upon closer examination he discovered a series of forgotten and mislabeled photographs. By extrapolating information, the team began to realize that this set of photographs must be from the Green Expedition. They returned to Grand Gulch armed with actual locations from photographs correlating to the campsites of McLoyd and Graham from the 1891 diary. After searching the locations in Grand Gulch thoroughly, the third D.W. Ayres inscription was soon found at Quail Panel, along with those of C.H. Green and Charles McLoyd. These initial inscriptions provided the clues to a second expedition by McLoyd in 1891 and verified that indeed there was a Green Expedition, of which Ayres and other Durango residents had been members.

Several times both Blackburn and Winston Hurst also succeeded in tracing inscription names to modern families in Bluff, Utah; Durango, Colorado; Albuquerque, New Mexico; and even Los Angeles, California. Often current family members were delighted to hear about their relatives, and agreed to share family portraits and stories of their ancestors, thereby assisting in the identification of the faces in historic photos and the reconstruction of expeditions.

Another example of successfully applying inscription data is the rediscovery of Richard Wetherill's Cave 7, the type site for the Anasazi Basketmaker culture. The specific site location was lost for nearly 100 years, as interest in the Basketmaker waned and collections were forgotten. Rediscovery of the cave (see Hurst and Turner this volume) was aided extensively by locating and documenting inscriptions and dates in the potential area. Inscriptions of Charles Lang and the I.A.E.E. (Illustrated American Exploring Expedition), as viewed on glass plates of Cave 7, would have confirmed the exact location. Identification of the cave from glass plate photos was somewhat tentative due to discrepancies, contradictions and ambiguities in the marking of different copies of the same photos. Confirmation of the cave's identity was made possible by the discovery of Ethridge's signature and accompanying date, December 20, 1893 (Figure 4.3), matched with the glass plate. By cross-referencing the date, it was clear that the inscription was left one day before Richard wrote Talbot Hyde from Bluff City, Utah, explaining the Cave 7 discovery (R. Wetherill 1893c) and asking

Figure 4.3 Inscription from Cave 7, left one day before Richard Wetherill's letter to Talbot Hyde, asking him to name the Basketmakers. (Blackburn drawing)

Talbot to name these new people (R. Wetherill 1894a). It is likely the signature and date were inscribed as the party left the cave. Photographs were then matched with cracks and fissures in the rockshelter walls and distinctive boulders. Confirmation of the location of Cave 7 was reestablished.

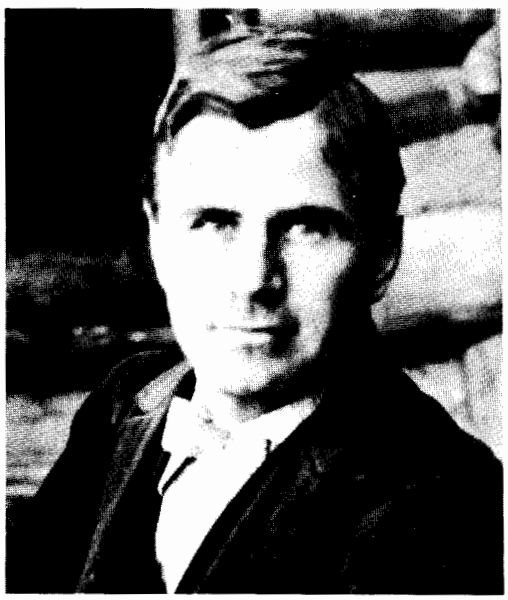


Figure 4.4 Charles Lang in Bluff City, Utah, circa 1890. (Photograph courtesy of Charles Lang, Jr.)

Summaries of Known Expeditions

The following list of expeditions is compiled through documented inscriptions. Supporting data from books, journals, notes, records and data entries are listed when appropriate.

* Inscription found in canyon

** Inscription viewed in photograph but now gone

<u>Prior to 1890 (1888)</u>

* Charles Lang (Figure 4.4)
Joseph Nielson?

Frank McNitt in *Richard Wetherill Anasazi* (1957) and Jessie Nusbaum (1948) indicate that Charles Lang was the first to obtain a collection from Grand Gulch. A Charles Lang signature has been documented in upper Cheesebox Canyon by Michael Dussinger (Dussinge 1991). A second unreadable inscription accompanies the Lang inscription and may be that of Joseph Nielson. Prudden reports artifacts dug by Charles Lang from Chinle Wash in 1888 but references nothing from Grand Gulch. To date, no conclusive inscription evidence has been found to support that Joseph Nielson participated.

<u>December 1890 to March 1891</u>

* Charles Cary Graham (Figure 4.5)
* Charles McLoyd

Figure 4.5 Charles Cary Graham, circa 1890. (Photograph courtesy of Charles L. Graham)

Documentation of this expedition includes an original diary of Charles Cary Graham (Graham 1891) and a published version of the same diary (Daniels, 1976). Numerous inscriptions exist throughout Grand Gulch.

June 1891 –The Green Expedition
(Figure 4.6)

* D.W. (Daniel) Ayres
* C.H. Green
* Charles McLoyd
  F.E. Leeka (photographer)
* H.R. Ricker
  Robert Allan
* A.A. Do(e)k

Participation by these members is substantiated through transactions found in bank records available at the First National Bank of Durango, Durango, Colorado; Wetherill–Grand Gulch signature documentation; Blackburn's personal communication with Katherine Ayres, Barbara Baxley, and Lee Ayres regarding their grandfather D.W. Ayres; photographs from the Chicago Field Museum, American Museum of Natural History, and the personal collection of Allan's niece, Mrs. Theressa Allan Redd of Blanding, Utah.

Unconfirmed members of this expedition may include

* L.W. Churd, M.D.
* Don Bodo
* Charlie Bodo
* Henry Knowles

Figure 4.6 The Green Expedition party in Grand Gulch during the summer of 1891. Left to right: Reverend C.H. Green(?), Charles McLoyd(?), D.W. Ayres, Robert Allan. Allan is reading Wetherill's catalog from 1888. (Photograph courtesy Field Museum of Natural History, Neg. # A63335, Chicago.)

January/February 1892

* Charles McLoyd
* J.H. (Howard) Graham

Unknown 1892

Charles McLoyd
J.T. Graham
C.C. Graham

Evidence for the 1892 trips by McLoyd includes inscriptions from Grand Gulch, Graham's diary as published by Daniels, and additional original diary notations. Close inspection of the diaries indicates that J.H. (Howard) Graham never accompanied C.C. Graham on archaeological trips into southeastern Utah. However, the father (J.T.) of Howard (J.H.) and C.C., accompanied C.C. on one expedition for a short time (Daniels 1976: 9, 10, 15). Knowing this information we are able to sort various expeditions to southeastern Utah. The unknown 1892 expedition focused on the canyons of the Colorado River where little documentation work has been completed. Catalogs of artifacts from this expedition are available at the American Museum of Natural History.

1892/1893 Maguire Collection/LDS Church Collection

Platte Lyman
* Don Maguire

Platte Lyman reportedly completed an excavation in Cottonwood Wash that became part of the Church collection in Salt Lake City. Much of this collection resides at Brigham Young University at the Museum of Peoples and Culture and is known as the Lyman/Lang collection. We suspect that this collection also involved Don Maguire, in at least receiving the collection from Lyman and possibly visiting or excavating some sites. The collection was sent to the Chicago World's Fair in 1893. No evidence of this group in Grand Gulch has been reported to date.

February/May 1892 Illustrated American Exploring Expedition

* I.A.E.E. (Illustrated American Exploring Expedition)
Warren K. Moorehead (leader/archaeologist)
Remington W. Lane (artist)
* Lewis W. Gunckel (geologist)
Clinton Cowen (Surveyor)
William W. Ralston (assistant)
Dr. C.H. Manly (surgeon and physician)
Mr. Rowley (entomologist)
Mr. Smith (guide)
Mr. Matthews (guide)

The Illustrated American Exploring Expedition did not enter Grand Gulch. Inscription evidence was found along the San Juan River, Butler Wash, and Whiskers Draw. Moorehead had close contact with Charles McLoyd and was interested in buying his collection. This link may provide some insight into McLoyd's motivation for later expeditions to southeastern Utah.

1893 OR 1894

Charles McLoyd
J.H. Graham
* John Wetherill

The only evidence that this expedition was conducted is found in the published Graham diary (Daniels, 1976), the original diary of Charles Cary Graham and a John Wetherill letter (J. Wetherill, 1930). Signature or inscription evidence for this expedition has been found in one location, Cave 19 reading "Wetherill Jan. 10, 1893". H.L.A Culmer reports a W.C. McLoyd [W.C. is likely an error] and a C.C. Graham inscription from the winter of 1892–93 and goes into a detailed account of their exploration of White Canyon (Culmer 1972:75).

1894 Billy Wells, Emory Knowles, Jim Jones

Billy Wells
* Emory (Emry) Knowles (spelling of Emry is variable in literature and inscriptions)
* Jim (J.T.) Jones

Keller (Keller et al. 1974:19) reports that Jim Jones, Emery Knowles, and Billy Wells excavated in Grand Gulch during 1894. Emory Knowles's inscription is found in numerous locations throughout Grand Gulch with an 1894 date. Inscriptions have not, however, been found for Billy Wells or Jim Jones from that date. Two inscriptions from 1892 of Jim Jones have been found in lower Grand Gulch, but these are likely related to the HHT cattle company use of the canyon.

1893-94 Hyde Exploring Expedition to Grand Gulch

Richard Wetherill (leader/photographer)
* Al Wetherill (cook/recorder)

C.B. (Charles) Lang (photographer)
* Harry French (ruins scout)
* James (Jim) L. Ethridge (ruins scout)

Robert (Bob) Allan (freighter/guide)
* Wirt Jenks Billings (measurements/catalog/notes)

John Wetherill (wrangler)

The inscription "Wetherill" is found throughout Grand Gulch. Many attribute this to Richard; however, Al Wetherill and perhaps John were writing the inscriptions. This conclusion is based upon the route findings identified in this paper. Al Wetherill or John Wetherill sometimes left cartoon like drawings of elves or pack horses. Richard Wetherill may have left only his initials, R.W.

Evidence to support this expedition is found in photographs and field notes at the American Museum of Natural History, University of Pennsylvania, Tulane University, State of New Mexico Archives and the Heye Foundation.

1894-1895 SAN JUAN EXPLORING EXPEDITION

* SJEE
* Charles B. (C.B.) Lang
* Franklin Jacob (F.J.) Adams
* Robert Allan

Lang began his 1894 expedition in the upper reaches of Allen Canyon after the completion of the Hyde Exploring Expedition. Signature evidence has not been found in Grand Gulch; however, several inscriptions have been found in the Cottonwood and Allen Canyon areas.

Excellent documentation of this expedition exists at the Chicago Field Museum in accession #1468 dated October 25, 1923. Jacob Adams exhibited an excellent knowledge of the Basketmaker culture while accompanying H.L.A. Culmer (Culmer 1972:69, 75) and Edgar Lee Hewett (Hewett 1906–1909:57–58) on later expeditions to Grand Gulch. He likely obtained this information while working with Charles Lang.

The following collection descriptions were written by Charles Lang and found among the notes of T. Mitchell Prudden:

Collections that I have made from this section are distributed as follows: first collection, made in 1893 and 1894, at museum, University of Utah, Salt Lake City; second, in 1894 and 1895, at Walker Museum, University of Chicago; third, in 1897, in possession of Mr. Stengel, "Furrier," Main Street, Salt Lake City; fourth, in 1896 and 1899, my last, in possession of Mr. Bixly, P.O. Box 71, Salt Lake City, and for sale, either by him or myself. The first three collections contain relics, principally of the elder brother; ie basketmaker the fourth principally of the Cliff and Mound dweller (Prudden nda:60).

January/March 1897: Whitmore Exploring Expedition

* W.E.E. (Whitmore Exploring Expedition)
* Richard Wetherill (guide/photographer)
* Levi Carson (pack train)

  E.C. Cushman (pack train)

  Clayton M. Tompkins (care and storage of artifacts in Bluff)

  C.E. Teddy Whitmore (tutor for George Bowles/financier)

  Clayton Wetherill (riding stock)

  George Bowles (Student of archaeology)

  George Hairgrove (kitchen)
* Charlie (C.C.) Mason (excavator)
* James Etheridge (excavator)
* Orian H. Buck (Buk) (excavator)
* Marietta Wetherill (notes/records/measurements)

  William Henderson (notes/records/measurements)

There is some confusion about the spelling of George Hairgrove's last name. McNitt refers to the name as "Hangrove" (McNitt 1957a:156); however James Knipmeyer confirms an inscription in Tsegi Wash is spelled Hairgrove (Knipmeyer personal communication 1990, 1992), as does the Alamo Ranch Ledger (Anonymous ndf:150). McNitt (1957a:148–149) further references this expedition by a labeled photograph from the Museum of the American Indian–Heye Foundation, and 1897 field notes available at the American Museum of Natural History in New York City.

Grand Gulch inscriptions include a signature panel at Split Level Ruin with nearly unreadable inscriptions except for a clearly visible "W.E.E." and "1897". Another "W.E.E." inscription occurs at Polly's Island. The W.E.E. is assumed to be Richard Wetherill's acronym for the "Whitmore Exploring Expedition", similar to his previous naming of the Hyde Exploring Expeditions in 1893. Neither the name nor the acronym appears anywhere in written documentation for the expedition, however. Two adjacent fading but complete Wetherill names may belong to Richard and Marietta.

1905–1906 H.L.A. Culmer Party/ Expedition to the Great Natural Bridges of Utah

Henry Lavender Adolphus Culmer

George W. Perkins(packer)

Franklin Jacob Adams (cook)

Freeman A. Nielson (packer)

Jim Scorup (guide)

S.T. Whitaker (architect/photographer)

Carlton W. Holmes (son of Col. Edwin F. Holmes, financier of the expedition)

Inscriptions have not been found from this expedition. It is listed in this report as a framework for future researchers. Primary documentation of this expedition is found in Culmer (1972:58).

1920 Cartier Expedition

* AMNH (American Museum of Natural History)
* BTBH (Benny Talbot Babbit Hyde)
* Nels C. Nelson (NCN) (archaeologist)
* John Wetherill (guide and cook)

  Tall Singer (Navajo guide?)

  Albert Smith (guide)

The Cartier expedition was sent to Grand Gulch to verify Richard's previous discoveries and to complete an archaeological inventory of the area. They soon found the task enormous. Information on the expedition was obtained from nitrate negatives and field notes at the American Museum of Natural History. "BTBH" inscriptions may indicate points from which photographs were taken.

It should be noted that the various expeditions listed above but not further discussed in this paper have a high potential for also being reconstructed. They include: the Illustrated American Exploring Expedition led by Warren K. Moorehead during 1892, the San Juan Exploring Expedition led by Charles

Lang, Jacob Adams, and Charles Lang in late 1894 and 1895; and the American Museum of Natural History trip led by Nels C. Nelson in 1920. Nelson kept detailed notes and descriptions which would easily allow retracing and visiting of the sites along the route.

These examples and summaries effectively demonstrate the potential of inscriptions to confirm the location of historic archaeological expeditions in southeast Utah. The remainder of this paper will focus on several expeditions of particular significance: McLoyd and Graham 1890–1891; the 1893–1894 Hyde Exploring Expedition; and the 1897 Whitmore Exploring Expedition. By combining historic records and documented inscriptions with field checking, a framework is constructed to plot the routes and reestablish proveniences.

Documentation of inscriptions worked. Utilizing inscriptions for tracking historic archaeological expeditions is only one step in the complex process which has become known as reverse archaeology. Reverse archaeology is a process of locating and identifying archaeological sites then associating that information with existing collections of artifacts and photographs curated in numerous museums and homes throughout the country. Over the next seven years this method proved critical in reconstructing routes while identifying individuals who accompanied historic expeditions.

Expedition Reconstruction: McLoyd and Graham 1890–1891

The primary source for reconstructing this expedition is the original diary of Charles Cary Graham—the most complete diary of any of the early expeditions. Photocopies were obtained from Graham's grandson Charles S. Graham, currently residing in Houston, Texas, and cross-checked with the published version of the diary by Helen Sloan Daniels (1976). Permission for reprinting was granted by the Center for Southwest Studies of Fort Lewis College. Please note that the following diary entries appear in italics followed by Blackburn's annotations on site and camp locations, inscriptions, and collections. Bracketed comments have been added for clarification.

The Daniels version of the diary includes the following brief interview-style introduction:

During the late 1880's, Charles McLoyd who was a miner and had been working at Red Mountain, came to Durango and to the Vallecito to work with the Patrick Boys.

Charles Mason, who lived on the Pine River when we came to the Valley, had gotten interested in the fish hatchery business and had a hatchery over on the Rio Grande by this time. He was always on the wrong side of the hill in the spring and as he went over the hill in the spring, he always stayed with us. One spring he told Howard [Graham's younger brother] *about digging out a mummy on the Mancos. Charles McLoyd, Howard and Lee Patrick went over to the head of the Mancos trapping the next winter and after a few days they decided there was no good trapping there because it was trapped out. They knew that the Wetherill brothers were down on the Mancos River, so Howard and Lee Patrick went down there. They got to digging around and found a few relics and then McLoyd came down to the Wetherill camp. They made up about four of them would go digging and see what they could find, one of the Wetherills, Howard, McLoyd and Lee. They started up the different gulches and they got clear up to what is now called Balcony House at Mesa Verde. Two of the other Wetherill boys were looking after their cattle up on the Mesa, and when the others found the Balcony House, they started looking for cliff houses too, and found what is now known as Cliff Palace, and all worked there that winter.*

Howard's finding in Mesa Verde interested me and in the winter of 1890 and 1891, McLoyd and I went over in Utah hunting Indians relics and McLoyd and Howard went again in 1892 and then in 1893 or 1894. Father went with

McLoyd and me. Father did not stay long, only two or three weeks to see what the country was like.

Late in December, 1890, McLoyd and I started for Utah. We spent Christmas, 1890, about 10 miles west of the La Plata, looking after a ranch while the owners spent Christmas over on the La Plata River. From here we went on to Bluff, Utah. From Durango we went out through Ridges Basin, down the La Plata River to the La Plata Store and then went south of Mesa Verde and camped over near where Towaoc Indian School is, there was a spring there. We did not find any more water until we reached the San Juan River. We struck the San Juan River 20 or 25 miles above Bluff City and then followed down the river to Bluff. The old road west from Bluff was made out of solid rock in some places and in one place I remember they had made a corduroy road, one side was on solid rock and the other was just the logs placed at right angles to the hill. We had to go up over a point to get to Comb Wash which had just been blasted out and left, like a stairway, each step one foot wide and one foot high. They used to take wagons over this stairway at times.

We were at Bluff on December 29th and it took us two days to get to Grand Gulch (Daniels, 1976).

January 1891

January 1. Camped on head of small Canon, can't get down it. Think they call it Toad Flat.

This camp was probably near the spring in what is now called Todie Flat.

January 2. Camped on head of Graham Canon. Mc went down to see if canon had trail.

Graham Canyon, now called Bullet Canyon, would have been the largest and most immediate canyon they encountered. The upper portions would soon prove impassable to the horses.

January 3. Camped on the back of the Grand Canon.

"Grand Canon" is Grand Gulch. Finding no route, they probably circled the head of Graham Canyon, and headed west, following the rim of Graham Canyon to its junction with Grand Gulch. Finding a canyon that was increasing in depth limited hopes for a visible route down for the horses. They may have been searching for a trail farther south.

January 4. Sunday, looking for a place to get into the canon. Found a place to make a trail. We each went down the canon, one going up and one going down until we could find a place to get the horses down.

This is a little unclear but probably deals with the return trip east along the southern rim of Graham Canyon. From there they could observe the northern rim (southern exposure) until they spotted a likely place to bring the horses down. McLoyd and Graham then walked below the rim looking for a route.

January 5. Moved to the north side of Graham Canon to make trail into canon.

January 6, 7. Worked on trail.

January 8. Working on trail. There is only one trail crossing the canon and we don't know where that one is. We want to move down into the canon tomorrow if we get the trail done in time.

Evidence from inscriptions and journals, associated with geographic locations suggest that the existing trail referred to probably came down at Polly's Island or perhaps Polly's Canyon from Hardscrabble. The trail out the other side is very likely up Cow Tanks Canyon. Cribbing work was identified in April 1990 that would have allowed horses to reach the lower canyon; however, a large pour-off near the rock art site called "Pornography Panel" in Cow Tanks Canyon would stop any current horse travel. It is highly likely that erosion has eliminated the trail at the pour-off.

A second possibility for that first existing trail is down Shangri-La Canyon and out Collins Canyon. It is likely that both Collins Canyon and Cow Tanks Canyon were used as routes prior to 1890.

Searching for McLoyd and Graham's constructed trail into Bullet Canyon proved to be an elusive task. It's one thing for a person to hike down a steep slickrock slope; it's quite another to get several horses down. They could have come off near "Perfect Kiva"; however, no mention of the ruins in this canyon may mean that an alternate route was used. Bob Powell (personal communication 1990), the original photographer for the Wetherill–Grand Gulch Project, was the first to report some old-looking rock cairns at the head of a likely canyon. Following his lead and using modern maps to predict the easiest routes through parks and timber on the mesa top, Blackburn led an expedition to the rim of Bullet (Graham) Canyon in March of 1992. Once over the edge of the rim, evidence became apparent: old cut tree limbs had weathered where they had fallen 100 years earlier, marking a rough switchback trail down the slope, complete with visible areas of construction where logs had been cribbed in support.

This route also makes excellent sense from the standpoint of access through mesa top parks with a minimum of riding through pinon/juniper forest, water was likely present at the junction of the upper forks of Graham Canyon while down canyon grass was plentiful for their horses. This route would have also eliminated the view of Perfect Kiva.

January 9. Got the trail done and the horses down. Will have to pack the things down on our backs.

January 10. Camped in Graham Canon. Good grass for horses. We know of several houses in the canon but have not explored at all.

Figure 4.7 Perfect Kiva (or Cliff House #1) in Graham Canyon during the summer of 1891 by Green Expedition photographer F.E. Leeka. (Photograph courtesy of the Field Museum of Natural History, Neg. # A2100, Chicago)

They probably viewed many sites from the rim as they searched for a route into the canyon. Perfect Kiva would have been especially pronounced. They could have camped at either Jail House or the junction of the two canyons in upper Graham Canyon at the east end of the flat pastures where water is readily available.

January 11. Sunday. We worked in Cliff house No. 1. Graham Canon. found 6-7 bone awls, 1 stone axe, some sandals, one bowl and small jar. Some cloth, one small coil vase with skeleton.

"Cliff House No. 1" is the critical link in identifying many of the locations referred to in the diary (Figure 4.7). Inscribed on the plastered northern wall within the interior of the kiva is "C.C. Graham Jan. 11, 1891." Blackburn first observed the inscription while helping to stabilize the site in 1974. The ruin is currently referred to as Perfect Kiva and is located in Bullet Canyon (Graham Canyon).

January 12. The skeleton we got out whole. In the afternoon worked in house no. 2, Graham C. got two coil jars, one of them with designs, 2 bone drawing knives, 1 wooden knife, 1 wooden dipper, the large coil jar was full of shelled corn in perfect condition.

"Cliff House No. 2 " must be Jail House Ruin, the next ruin downstream from Perfect Kiva (Figure 4.8). The coil jar with design was identified by Ann Phillips in the C.H. Green catalogue, and has been located in the Chicago Field Museum of Natural History. Catalogue accession numbers of this and the other artifacts located from Cliff House No. 2 are 21386, 21384, and 21524.

January 13. We did not get much today, 1 small sandal and 1 stone axe. Stored what we had in a cave above camp.

Above Jail House Ruin is a small canyon with a little protected alcove that may have been used. Along the recently discovered trail there is also a small cave that could have been used.

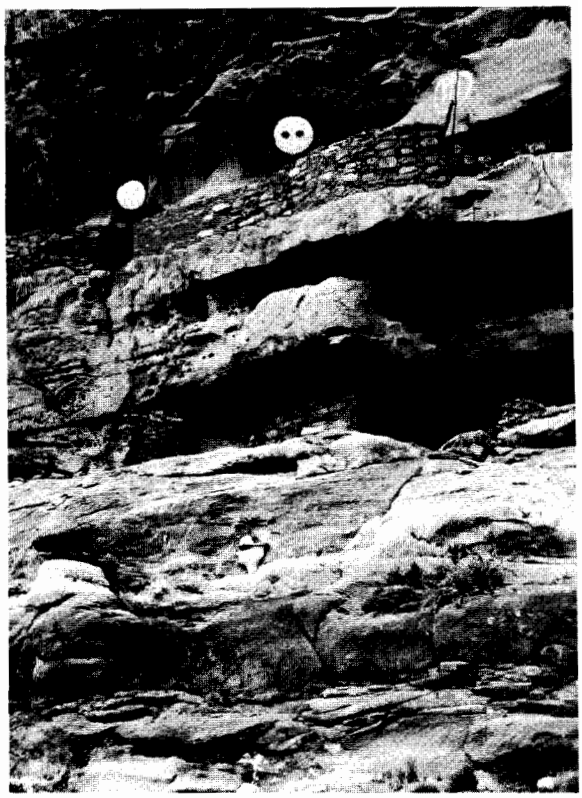


Figure 4.8 Jail House Ruin (or Cliff House #2) in Graham Canyon during the summer of 1891 by Green Expedition photographer, F.E. Leeka. (Photograph courtesy of the Field Museum of Natural History, Neg. # A8017, Chicago)

January 14. Explored the canon above camp. I found nothing but some store rooms. I went up the south fork. Just above the forks in the main canon there is a small house high up with the following painting (2 moons with half moon and star between) White paint. Mc could not get to the house.

This description isolates the trail location as between Perfect Kiva and the junction of the upper forks of Bullet Canyon. The ruin described is Moon Kiva and is located just above the junction of the upper forks on the north wall.

January 15. Moved camp to the mouth of Graham Canon.

Although they moved their camp to this location, they left their horses in upper Bullet Canyon where grass and water were available. The move was approximately three to five miles depending upon the initial location of their camp.

January 16. Worked out 2 houses in main canon, did not get much. Houses may have been abandoned.

It is not known whether they moved up or down the canyon; however, visible from the junction of Graham Canyon and Grand Gulch are two granaries high on the ledge. Other likely sites are Castle Ruin, which is up canyon, and a small ruin one half mile below the junction.

January 17. We worked out a cave in main canon, 2 baskets, 1 mummy, baby, 1 child's skull, 1 pair sandals, string, 1 stone axe, 1 stone hammer, 1 wild cat skin, 1 piece buckskin, 1 piece feather cloth, there was also a piece of buckskin around the baby, 1 string apron.

Although actual locational or directional information is scanty, down canyon can be eliminated because caves of any size are absent in that area. It is likely that they are digging in what is now known as Cut-in-Two Cave (Red Elk site), located high on the left just before Shiek's Canyon. Signatures are numerous for Charles McLoyd in this location. Since they worked in Shiek's Canyon at the Green Mask site the next day, it seems probable this is the right location. Items identified in the Chicago Field Museum Collection are 21596, 21599, 21591, 21530, 21531, 21532, 21533, 21534, 21538, and 21599. The wildcat skin was lost, the piece of buckskin is 21640, and the string apron is 21610. Burials included A-6,8,9. Item 21386 was sold by the Museum in the early 1900's.

January 18. Sunday, visited McLoyd cave. It is in the side canon on right hand side of main canon 2 miles above camp, there are lots of paintings to many to copy. We find paintings at nearly every house. 4 sandals, 2 of them buckskin, 1 hand hammer and some other small things. We find paintings in red, white, green and yellow. One of the sandals is made of feather cloth and is about 13 in. long.

This unique site, now known as Green Mask, provides another point of reference for future relocation of sites in the rest of the canyon. The only item from this day found at the Chicago Field Museum was 21699, Buckskin Sandals.

January 19. Monday. Up main canon. 1 pair of sandals, strings, human hair, from Salt Cave.

Although this description is somewhat obscure, a notation on March 4; "moved up 8 miles to Salt Cave" indicates that Salt Cave may actually be Split Level Ruin. Split Level Ruin is approximatly eight miles from the mouth of Graham Canyon. A burial identified with this days excavation is labeled A-11.

January 20. Up main canon. 2 1/2 hours walk. 20 sandals, 1 skull, 3 boards, small pieces of cloth, string, some carved sticks, 1 piece of stick for putting around the head. 1 farm implement.

January 21. Worked at the same house as yesterday, 30 sandals, string, small piece of cloth with red stripes, 1 wood awl, pc. of pottery with maltese cross on it, the tail of a pine marten.

January 20 and 21 may have been at Sandal Cave. Graham names a cave Sandal Cave in his journal on March 10. Likely resulting after the discovery of numerous sandals in the alcove. A two and a half hour walk places an individual among several sites in the vicinity: Split Level Ruin, Lion Tracks, Shelf Ruin, and the site known as Kokopeli and the Dancers. Marietta Wetherill indicates that no prior damage to this site had ocurred prior to 1897, several mummies and burials as well as unexcavated kivas on the lower level were discovered at that time including the mummy Joe Buck, thus eliminating it from consideration. The only piece of material collected during these dates that has been

found is item 21447, pottery with Maltese cross, at the Chicago Field Museum of Natural History.

January 22. Went down the main canon. I went up the first canon, nothing in it. Mc went on down; he found one house, got a small bowl and a pair of sandals.

McLoyd may have continued on down to Two Story Ruin near the mouth of Step Canyon; however, there are several small granaries along the route. Graham may have gone up Green House Canyon. Based on the natural sequence of drainages, the numbering system used by McLoyd and Graham for the canyons below Graham Canyon may have been as follows:

1. Green House Canyon
2. Step Canyon
3. East Side Canyon from Hardscrabble
4. Dripping Canyon
5. Cow Tanks Canyon
6. Polly's Canyon

January 23. Went up G.[Graham] *Canyon to look at some caves, did not get anything but a small piece of buckskin. I got the horses and watered them. Worked on trail down main canon in the afternoon.*

The caves described are likely the series of three burial caves down canyon on the north side of Graham Canyon beginning below Jail House Ruin. Water is available for the horses at Jail House Spring. This entry also indicates that McLoyd and Graham may not have yet understood how to excavate Basketmaker materials in burial caves without cliff dwellings.

January 24. Worked at house 1/2 mile below camp. Got six (6) coiled jars out of trash pile. All sizes and styles. They looked like they had been hid, were empty and had a flat stone over the top. 3 sandals, 2 ears of corn, one of them red, part of mat, 1 basket about an inch wide and same deep.

Apparently the camp remained near the mouth of Graham Canyon. If the excavation took place at a cliff dwelling one/half mile below the junction, then there is only one ruin that fits this description. It was later to become one of the main camps for all the expeditions. For lack of a better name, it is called the "Camp Ruin." Items identified at the Chicago Field Museum as having come from this location are 21382, 21383, 21385, 21387, 21388, and 21389.

January 25. Sunday I was mending pottery and working at same house as yesterday did not find anything. Mc now making trail down main canon. Opened last sack of flour this morning.

January 26. I was making a trail down canon. Mc took two jars up to where the trail come in and stored them in a cave with some others we had there. The rest of them will leave at this camp. He brought the horses down as we want to move the camp tomorrow.

Alcoves at the base of the trail in Graham Canyon are being used for storage. This reference also indicates that the horses remained pastured in the upper end of Graham Canyon.

January 27. Moved camp south to canon No. 2, camped in a cave about 200 yards from main gulch. Lots of painting in cave but no sign of house. Snowed about an inch today.

This camp in canyon "No. 2" (Step Canyon) was to become a major camp for McLoyd as well as others using this portion of the canyon. The location is at the rock art site of Quail Panel at the mouth of Step Canon. Many signatures occur here, and glass plate photographs are believed to have been taken by F.E. Leeka from Durango, Colorado during the summer of 1891. Once again, the lack of surface structures may have discouraged McLoyd and Graham from excavating. McLoyd's 1892 descriptions clearly describes deep storage pits, sometime either in the latter part of this trip in the upper reaches of Grand

Gulch or during the summer 1891 Green Expedition McLoyd was to learn of the Basketmaker people buried at a greater depth.

January 28. Went up canon No. 2 found good sized house but did not get anything. Snowed about an inch last night.

The structure described exists in one of two potential locations: Water Works Ruin a short distance up Step Canyon from Quail Panel, or Pine Canyon Ruin located near a large pour-off in the upper reaches of the canyon. Evidence points to the second location. A mystery surrounds this location and the recent discovery of a large black-on-white olla, or water jar, found below the signatures of McLoyd and Graham. The olla was not mentioned in the 1891 diary notes, but it appears to have been stashed and refilled with dirt (Hurst, 1978). Pine Canyon Ruin is the largest Pueblo III ruin in the canyon and is but a short distance upstream. This may indicate they did find something in the good sized house but were reluctant to reveal it in the diary. The vessel is now displayed at the Edge of the Cedars Museum in Blanding, Utah.

January 29. Went down the main canon to a short canon on the east side. One house of 12 rooms got 1 farm implement, 1 bone awl.

The canyon described fits canyon 3 under the proposed numbering system. In April of 1990 the Wetherill–Grand Gulch team projected that the 12 room cliff house described in the diary would be found in this canyon. Upon checking we discovered the cliff house and named it the Great Wall site. Inscriptions found at this location include "Chas. McLoyd, C.C. Graham, Jan. 1891." This ground truthing confirms the proposed canyon numbering system is valid.

January 30. Went down the main canon 2 hours walk, Worked out house, got some things, 1 wooden comb with short teeth, the houses do not yield as much down here as they do above.

Several items of information are revealed in this entry. C.C. Graham noted that the majority of occupation was to be found in the upper reaches of Grand Gulch and that he and McLoyd were concentrating on the cliff dwellings and not on the empty caves. The site they are visiting appears to be Long House, which is located below Cow Tanks Canyon. An 1891 photograph of this location was found at the Chicago Field Museum, taken by the Green Expedition (led by Charles McLoyd) during June of 1891.

January 31. Explored Canon no. 5 no good, got a pair of sandals. We went out on top and looked over the country. Saw some deer signs. This month got 9 coil jars, 3 other pieces of pottery, 60 sandals, 2 mummies, 2 skulls, 1 vase of corn, 3 samples of cloth, strings, 1 wooden dipper, 2 stone drawing knives, 1 wooden knife, 1 farm implement, 9 bone awls, 2 wooden awls, 1 stone axe, 3 baskets, 2 skins, buck and wild cat.

Important route information is revealed as the men find a trail and exit out of Cow Tanks Canyon in order to look around. It is likely that they had discovered the previously mentioned short cut trail and followed it upward towards the Clay Hills. It is unfortunate they did not describe it as being a trail. Further clues are provided regarding their inability to identify Basketmaker cists in the caves without cliff dwellings. They found nothing in the alcove known as Pornography Panel, yet it contained numerous Basketmaker cists.

February 1891

February 1. Sunday. Moved camp to mouth of No. six (6) canon.

Canyon 6 is believed to be Polly's Canyon. A large inscription and signature panel along with numerous McLoyd and Graham signatures has been found in the rincon behind Polly's Island opposite the mouth of Polly's Canyon, presumably at or near the camp site.

February 2. Worked out 2 caves close to camp, got 1 sandal, 1 wooden awl (double ender), 1 dipper with most of the handle broke off. Afternoon went up on Arrow Point Island, 2 sandals, 1 plaited ring, 1 hand wood imp, 1/2 inch wide, 10 in. long, 3 small pointed sticks, 30 arrow points, w. samples of chopping with stone axe. 1 stone axe.

This description leaves little doubt that the location is Polly's Canyon. The caves excavated are in the rincon behind Polly's Island. Documented signatures exist here in three locations. Photographs were found of men climbing Polly's Island and at least two archaeological sites on the Island at the Chicago Field Museum, attesting to the fact that the Green Party led by McLoyd was at this location in June of 1891. Dry material likely originated from the dwelling that is visible facing east toward the top of Government Trail since anything on the island would have been destroyed by the elements. McLoyd and Graham found 120 projectile points at this location; the majority of these were found on the island. Originally curated in Chicago, letters of transfer within the museum indicate that all but two of these projectile points were traded by George Dorsey (representing the Field Museum) to T.R. Roddy (a trader who established a business across from the museum) in the early 1900's and lost for any future research. Unfortunately, analysis of the projectile points may have given an understanding of the Island's history. The points may even have identified conflict with a different group of people from the Anasazi. The accession numbers for the two remaining are 21492 and 21493.

Ladle number 21408 was found at the Chicago Field Museum. Burials identified from this location are: A-21, 34, 12, 13, 14. (Burials were labeled by McLoyd in the same manner as Wetherill had completed his inventory for the 1889 collection of Mesa Verde. Using a letter first then a progressive numbering as they are discovered.

February 3. Worked on the island, I got 3 skulls and 2 stone axes. We got 25 arrow points and some leg and arm bones, we found 10 skeleton but they were not very well protected and the skulls were gone.

Skulls played an important role in the scientific community of the day. Measuring cranial capacity, as an indication of intelligence of different races, was a hotly debated subject of the time. Skulls were as important as the artifacts. The rest of the body served little purpose, and was often uncollected (R. Wetherill, 1894c; Gould 1981).

February 4. Mc went down the canon 10 or 12 miles to see where we could camp next. I worked out a house about 1/2 mile above camp. Got 1 stone axe, 1 sandal with design on bottom. 1 celt, 1 spear point, 1 horn.

Burials taken from February 3 to 5 are believed to be A-21, 34, 12, 13, 14. The identity of the exact location of this house is uncertain. There is a possibility that the site is in Polly's Canyon at the Dry Laid Kiva site.

February 5. Was out on the mesa this morning, on the island in the afternoon, got 29 arrow points.

The mesa is readily accessible in several directions. It is unclear whether all 29 points were found on Polly's Island or on the mesa during the day. It is likely that Graham spent the day arrowhead hunting.

February 6. Moved camp about 12 miles down the canyon.

McLoyd and Graham were now in the area of Collins Canyon. It is likely they took advantage of the large grass-filled rincons in this area to feed their horses. Somewhere in this area the mummy A-5 was discovered.

February 7. I went down the canon 16 miles today, did not find many houses, canon very narrow and sides high. Saw lots of sheep tracks. Mc worked out house above camp 2 miles, got one baby mummy, 5 bone awls, 4 wooden awls, 1 wooden paddle, 1 horn, empty,

2 pieces of cloth, sample of cotton, 4 sandals, 1 plaited ring, bundle of rope, (plaited yucca), 4 pointed stick plated together at one end.

Graham's trip down canyon was very near the San Juan River. It is interesting to note Graham's sighting of sheep tracks since this area was one of the last sightings, in 1972, of Bighorn Sheep in Grand Gulch. The sheep were seen by Steve Rivas leaving the canyon and appeared to be a band of ewes and lambs. The site that McLoyd worked out may well have been Bannister Ruin, which is the first major site above the junction of Collins Canyon. The cotton found in the excavated site is also indicative of a later pueblo time period. The four-pointed stick is item 21565.

February 8. Sunday. Moved up the canon to canon No. 2 out of ?

The two men have returned to Quail Panel at the mouth of Step Canyon.

February 9. Camped at foot of trail. I am going to Bluff City tomorrow.

The two men have returned to the trail in Graham Canyon.

February 10. Camped at the tanks on the Bluff City road about 25 miles from Bluff. No snow here. Was about 6 to 8 inches on divide.

This location is likely on the rim of Road Canyon in the area of the Mormon Trail known as The Twist.

February 11. At Bluff, camped at the tanks last night, clear and cold.

February 12. Camped at the tank, not as cold as it was the other night I camped here.

February 13. I got to camp at 4 o'clock. Glad the trip is over. Settled to date with Mc. We are even.

1st. 1 vessel, squash, 1 package, tied in shape of pad, horn and contents unknown. 3 sandals, 1 bone awl, 1 bunch of corn husk tied with string to suspend them. 1 wooden scraper. 1 curved wooden awl, 1 bone bead. 1 stick with curve at each end.

2nd 15 pieces of pottery, 1 stone sledge, 1 skeleton, some 1 farm impl., large bunch of cotton, one bunch of cotton and cotton twine, 1 piece of stone in size and shape like silver dollar; some squash seeds and pinon nuts in vessel found with skeleton. 1 wedge-shaped stick, 1 paint brush, sandal, 1 flint knife with wood handle, 2 arrow points, 1 odd shaped wood implement, 1 board.

3rd 1 notched stick, 1 large wooden awl with knot on end. 1 imp. wooden round at ends and notched in middle, 1 wooden imp. rounded at ends, 1 vessel made of squash rind, 1 odd shaped wooden imp.

One of the oddities of the McLoyd/Graham Collection is that very few pottery artifacts were in evidence at the Chicago Field Museum.

A unique set of pottery discovered by McLoyd on one of his expeditions to southeastern Utah was viewed at the Museum of the American Indian Heye Foundation in New York City, but unfortunately it is unclear from which expedition it originated (Pepper 1924).

February 14. I went up on the mesa to get 2 metates that I saw as I was going to Bluff. Put them on the bank of the canon. Mc went to the mouth of the canon to get some relics that we had there. We got 5 arrow points, 1 stone pipe, 2 metates.

McLoyd and Graham were not oblivious to the large surface sites on the mesa. It would seem that Graham rather enjoyed coming out of the canyon and exploring these sites.

February 15. Camped in cave at mouth of No. 2 canon on our way down canon.

The two men are again camped at Step Canyon at the site called Quail Panel. Inscriptions are abundant here.

February 16. Monday. Moved camp about 16 miles down the canon. Has been cloudy all day and rained some. It is raining tonight. 3 arrow points and some sticks.

The two men appear to be camped near Collins Canyon. Likely areas include the pour-off, Bannister Ruin, or the rincons near Collins Canyon.

February 17. Moved down the canyon about 12 miles, found 6 sandals, 1 basket, 1 sample of cloth of various colors, string.

McLoyd and Graham have begun excavating the cliff dwellings and caves near Big Panel, which is located slightly above Water Canyon (Side Canyon) in Lower Grand Gulch. Signatures have been found in several caves.

February 18. Was down the canon looking for sheep, did not see any fresh tracks, has been raining nearly all day. 3 sandals, 2 pieces of cloth, 2 farm imp., 1 peculiar basket with flints for making arrow points. 1 spinner stick with a round disk of wood in center. 1 thick slab of stone, dressed and polished about 5 x 12 x 1/2.

The most likely sites are in caves between Rope Canyon and Big Panel.

February 19. Worked in cave we are camped in. 3 bone awls and some cloth strings. In afternoon I went to look after the horses and Mc went down the canon about a mile to a cave but did not get anything.

There are few sites in this portion of the canyon where drinking water and protection from the elements can be easily found. It is likely that they are camped in what is now referred to as Wetherill Cave located downstream and across the canyon from Big Panel. It is nearly one-half mile from the mouth of Water (Side) Canyon.

February 20. We were down the canon looking for sheep, did not see any fresh tracks, I went up canon about 1/2 mile below camp and out on top to see the place for the river, could not tell where it is. 3 arrow points, 1 sandal, 1 board 10 x 18 x 3/4.

The trip to the top of the mesa must have been up Water (Side) Canyon. There are few accesses to view the river in this part of the canyon as they were still a great distance from the San Juan River. There is a chance that they were farther down canyon near the mouth of Shangri La Canyon, but that theory is refuted by the next entry.

February 21. Moved down the canon about 10 or 12 miles. Where we stopped to eat dinner, there was a stone with prehistoric tracks on it, some looked like bird tracks, some like turtle tracks.

The next entry indicates the location as being near Shangri La Canyon. Walt Loop, a geologist from Utah State University, did extensive work in the lower canyons of Grand Gulch and Slickhorn looking for similar tracks and may have documented this location.

February 22. Sunday. Mc went down the canon to the San Juan; it was only about 3 miles below camp. I went up the main canon about a mile, then up a side canon on the east side about a mile and got out on top and went across to the San Juan. It was only a quarter of a mile. (It looked like a nice level mesa. I saw a small hill and thought I would walk over to it, and look for the river from the higher point. I had only gone a short distance, maybe a quarter of a mile when I came to a cliff about 2000 feet down. The little hill was way over on the other side. It looked like a dry creek at the bottom, but when I used my field glasses I saw it was the San Juan River).

The two men likely camped in a rincon a mile below the junction of Shangri La Canyon with Grand Gulch. There appears to be an excellent place for grazing on the map. This camp has not been checked and with its isolated nature may still have intact historical remnants and possibly signatures.

Blackburn had a similar experience to Graham regarding the discovery of the San Juan River. While riding a mule named Red, a thirty-year-old remnant of the Scorup/Sommerville cattle company, he was attempting to discover the route into Shangri La from the canyon head.

He was sure that he was at the trailhead. Dismounted from the mule, he walked over to the rim and gazed upon the San Juan River canyon, the same site as Graham. He had followed the old cattle trail through Hat Flat and Hogans Valley to this point. It is likely that Graham had followed the game or Ute/Navajo trail out of Hogans Valley to this or a similar point.

February 23. We could not move camp today as the gulch was up, it rained all night, we want to go back up the canon.

The sound and fury of flooding from the upper canyon will dissuade the Lower Grand Gulch traveler. Flooding, combined with the lack of ruins in the area, surely made the location less than desirable. With flooding, this area of the canyon becomes a quagmire of quicksand that is especially treacherous to horses. Backpackers have been known to sink to the waist attempting to traverse the area during flooding. The area from Collins Canyon to Shangri La Canyon is the worst area for horseback riding in the entire canyon during high water.

February 24. We moved up the canon about 6 miles to the Arch. Has not rained any today, but is cloudy tonight. We got 1 large red dipper and 1 small dipper. 1 bone awl, 2 sandals, 1 arrow point.

The Grand Arch location gives shelter from the water and a reprieve from the canyon. The six-mile distance of the day either reflects the hardship of travel or waiting for the water to recede enough to proceed. A Pueblo II site is located under the arch. Across the canyon is a small cave in a rincon containing a site as well. Signatures occur at both locations. The large red dipper, accession 21407, is a beautiful Tusayan Polychrome design which is currently at the Field Museum of Natural History. The small dipper, 21410, was accessioned but has been lost.

February 25. We could not move today on account of the water. Snowed about 1/2 inch last night. I was up the canon making trail in the afternoon.

The worst stretch of the canyon lay ahead. Flooding would have produced log jams with pockets of quicksand found in the canyon bends.

February 26. We moved up the canon about 12 miles, could not travel in the gulch on account of quicksand.

They were likely located in the area of Collins Canyon between the Narrows and Bannister Ruin, another treacherous stretch for quicksand.

February 27. Camped at Arrow Point Island.

Their camp was once again at Polly's Island.

February 28. Camped in cave below the junction of Graham with the main canon. We got this month: 2 squash vessels, 3 skulls, 10 bone awls, 6 wooden awls, 4 pieces of cloth, 2 samples of chopping, 98 arrow points, 1 spear point, 24 sandals, 2 mummies, 11 wooden imps., 15 pc. pottery, 3 dippers, 2 plated rights, pointed sticks, strings, 3 stone axes, 1 stone sledge, 1 willow shroud, 1 large bunch of cotton, cotton and cotton string. 1 flint knife, 2 boards, 2 metates, 1 stone pipe, 2 baskets, 1 spinner, 1 polished stone.

Once again their camp was below the junction of Graham Canyon with Grand Gulch. It is particularly frustrating that no historic evidence is left within the cave to identify this location. Portions of the alcove harboring the camp have been washed away, and the wall does not retain inscriptions well. Historically, the alcove was used extensively as a camp. Most notable of these camps was in 1897 when Marietta Wetherill was photographed with the group accompaning the Whitmore Exploring Expedition to Grand Gulch.

Cotton is rarely found within Grand Gulch. Below Wetherill Cave in Lower Grand Gulch and on the north side of the canyon downstream of the entry with Water (Side) Canyon is a small alcove with a ruin. The ruin contains the signature of McLoyd and Graham as well as Ethridge. What makes this site particularly interesting is the occurrence of

cotton still (in the 1980s) lying in the churned backfill in hull form, prespinning clumps, newly spun cordage, and old remnants. Perhaps this indicates that cotton was grown in the lower reaches of Grand Gulch. Artifacts at the American Museum of Natural History from Chinle Wash just south of the San Juan River, include spindle whorls, needles, and cotton cloth. Poncho House (on the Chinle Wash) in 1990 still had fragments of cotton hulls and fiber in its trash. Blackburn had also viewed numerous implements for weaving cotton during the Wetherill–Grand Gulch Project documentation in the American Museum of Natural History (Blackburn diary 1988). The Grand Gulch site also contained numerous blanks and starts for the manufacture of beads.

March 1891

March 1. 1. Sunday. We went up the main canon about a mile, 7 sandals, 10 arrow points, 1 knife blade, 1 spinner, 1 sample of fur cloth, 2 bone awls, strings.

Speculated locations for excavation in this area is the rincon just up canyon on the north side from Castle Ruin in an alcove called Badger Cave. The site mentioned may have actually been Castle Ruin, but more artifact material would have been available at the Badger Cave location.

March 2. We are making trail up the canyon about 8 miles. 1 arrow point.

The trail was probably being built to the alcove known to them as Salt Cave (possibly Split Level Ruin).

March 3. I went up Graham Canon after the horses. Mc went to foot of trail to get some groceries we left there. 1 sandal with designs on bottom, 1 bunch of hair, 1 horn impl. may have been used to make arrow points.

They had returned for food at their stock pile in Bullet (Graham) Canyon . Evidently they spent some time digging in the ruins or alcoves of Graham Canyon.

March 4. We moved up the main canon about 8 miles to Salt Cave. 1 flint knife, 1 horn vessel, 1 mummy with feather cloth and part of the reed matting. 1 board—some cotton.

March 5. Snowed some last night, we worked in Salt Cave. Mc got his feet badly bruised by some dirt and rock falling in on him. 1 skull, 1 smooth bowl painted on inside, 1 small coil pitcher.

The painted bowl was found at the Chicago Field Museum and numbered 21431. The small coiled pitcher was listed as waste and was not found but numbered 21395. The mummy A-4 was also found at this location.

Although Split Level Ruin may be "Salt Cave," we may never know for certain. Located in the area approximately eight miles from Graham Canyon are the following sites:

1. Shelf Ruins–Shelf Ruins has a difficult access to high ledges. Wetherill used a system of tied-together logs to reach this site. Large sand deposits from flooding have covered the lower alcove, and it does not seem likely that a March 5 rock fall on McLoyd would have occurred here.
2. Kokopeli and the Dancers–The lower cave at this site did not appear to have been dug by McLoyd and Graham as Wetherill worked extensively here in 1897 and referred to it as Cave 9, finding a number of burials and materials in areas that should have been excavated by McLoyd. Signatures of J. H. Graham and C. McLoyd appear in the alcove above this site leaving open the possibility that some excavation may have taken place prior to Wetherill's excavation. The site is out of the streambed and somewhat difficult to see. There is also little midden depth and little chance for a rockfall occurring.
3. Red Man Cave–This alcove is in a western tributary, very high and near the rim of the canyon, and is likely the same site described by Graham on March 8.

4. Split Level Ruin–The alcove is enormous and would not be missed while traveling up canyon. It contains a steep midden with dwellings and plenty of potential for rock fall and movement while excavating. it is approximatly eight miles from Bullet Canyon and grazing and shelter would be plentiful within the protected area of the high overhang.
5. Lion Tracks Ruin–Lion Tracks is but a short distance upstream from Split Level Ruin. Graham was probably working here on March 6.

The experienced traveler of Grand Gulch soon recognizes that the distance between Split Level Ruin and Graham Canyon is approximately eight miles. Confidence is high that Split Level Ruin is Salt Cave. Grazing and shelter would be plentiful within the protected area of Split Level Ruin.

March 6. I worked at cave 1/2 mile above camp. 1 small skull, feather cloth, 2 pieces of cloth, 1 cradle with bark bottom, buckskin on end of bank, 12 sandal strings, 1 ring bark with lacing to go around jar. 1 small pc. buckskin, some feathers, 1 hard wood implement, centered at ends, line and dots around, 1 arrow point.

The above entries probably refer to the alcove known as Lion Tracks Ruin. It is almost exactly one-half mile above Split Level Ruin. Items recovered at the Chicago Field Museum of Natural History included 21527-28 cradle with bark bottom, 21562 grooved and carved wooden object, and the skeleton A-10.

March 7. I worked same cave as yesterday. 10 sandals, 1 bone awl, string. 1 sandal made of quills, 3 arrow points, 1 wooden imp. grooved on one side, notched on the other and man carved on side. 1 small disk 2 inches wide hole in center, 1 very small bone needle. 1 dipper.

March 8. Sunday. I went up on the mesa to look around, found a cave under the top ledge got 1 small basket, a hand bag about a foot square made of cloth, in it were several tanned skins with 6 arrow points, 2 farm imp., 1 sandal, 3 bone imp., 1 small paddle with string 1 small paddle, 1 bone scraper, 1 stone chisel hole in end.

This site is probably Red Man Cave, high in a short side drainage which enters Grand Gulch from the west and has an easy access to the rim. It is approximately one-half mile below Split Level Ruin (Salt Cave). McLoyd and Graham signatures were found in this cave. Items recovered at the Chicago Field Museum include 1 small basket, 21590; a hand bag about a foot square made of cloth, 21611; several tanned skins, 21635 through 21639 (enclosed in the bag) (these were found in the southwest display case at the Chicago Museum.); 1 small paddle with string, 21608; and 1 small paddle, 21609. Skeleton A-15 is believed to be associated with this site as well.

March 9. I worked in cave where I was yesterday, there were 4 sets of arm and leg bones with the skeleton I found yesterday from the elbow and knee down, 3 spear points. 3 arrow points. 1 bone whistle, a bunch of small twine, a bunch of hair, 1 board, 1 stick hole in end. Mc's foot is getting along all right as far as we can tell. He thinks he has a broken rib as his side hurts him worse than his foot.

Graham is exploring on his own and is once again excavating in Red Man Cave.

March 10. Worked at Sandal Cave. 5 sandals, 1 pc. feather cloth, strings, 1 grass rug. 1 small bone needle.

Sandal Cave is extremely confusing. It has the potential of either being Shelf Ruins or Lion Tracks Ruin. Lion Tracks may have been the same site as excavated on January 21. If so the alcove had already produced an extraordinary number of sandals and may well have been named at this time as Sandal Cave. Items found in Chicago include two burials A-16 and A-38, and a ladle 21409, although not mentioned, was attributed to this site (Green 1891).

March 11. I was up canon, 2 staples out of flour. 1 selt string, 1 drill, 5 bone awls.

The site has not been identified.

March 12. I went to a high house on west side of canon, nothing there, then went across the canon to examine some caves at the top of the canon, did not get much. 1 bone awl with hole in end and string in it to hand up, 1 bone awl, 1 paint brush, 1 bone hand drill.

This site is also difficult to identify. It may be below the junction of Todie Canyon with Grand Gulch. On the western side of the canyon is a small alcove site with a wall in front and a McLoyd and Graham signature on the roof. Although Graham continued to explore by himself due to McLoyd's injury, it appears that he signed both of their names in the sites he visited.

March 13. I was up the canon examining about 9. 1 stone axe, 2 skulls, 2 cradles, 1 mug with handle off, 1 painted bottle, 1 plain bottle, 1 sandal, 1 pc. buckskin, 1 bone chisel, 1 revolving fire stick, a peculiar thing supposed to be a trigger for setting trap. There were a can of hair and some strings under board in cradle, the bark around the head was 4 or 5 inches high.

If the "9" in the first line is indeed nine miles from Salt Cave (Split Level Ruin), this would place the traveler very near Turkey Pen Ruin. The type and amount of material being recovered is reflective of a site the size of Turkey Pen Ruin. The second possibility is Junction Ruin. Items recovered at the Chicago Field Museum of Natural History include 1 mug with handle missing (21394); the "peculiar thing supposed to be a trigger for setting traps" (21548), and the burial A-17. Perhaps it was in this portion of the canyon that either McLoyd or Graham identified the deeper Basketmaker culture.

March 14. I was up canon, 2 large coil jars, one of them has frame of willow around it, 1 basket, 3 sandals, 1 paint brush, 1 bone awl, string, 1 flint knife set bias.

The likely sites appear to be Turkey Pen or Junction Ruin. The large coil jar with willow frame (21379) is curated at the Chicago Field Museum.

March 15. Sunday. I was up canon today, 26 sandals, 1 small coil jar, 1 painted bowl, 1 small piece feather cloth, 1 sample of chopping.

Once again, the likely sites appear to be Turkey Pen or Junction Ruin, where large occupations and deep middens would have produced extensive numbers of Anasazi sandals.

March 16. Same place, 14 sandals, 7 bowls, 3 baskets, 1 skull, 4 bone awls, 1 bone chisel, stick with 2 disks on it, one of pottery, one of wood, 1 large farm implement.

Most likely sites are once again Turkey Pen or Junction Ruin. Of the items listed as collected, the Chicago Field Museum has a record of only 21440 that was discarded as waste. No record of the seven bowls or other items exists. The Green catalog also lists a large bundle of prepared yucca, stick with disc (21515), and burial A-19.

March 17. Same place, 14 sandals, 1 deep bowl, 1 very small pitcher, 1 farm imp., 2 pc. outer wrappings, 1 wooden knife, 1 bone awl, 1 spear point, 2 baskets, 1 cane.

It is obvious by now that Graham had found an enormous site. More than ever it appears that he was continuing to work in Turkey Pen Ruin. Junction Ruin had likely not yet been excavated heavily.

March 18. 18. Same place, 1 mummy, 2 skulls, 1 cradle, 6 sandals, 1 small coil jar, 1 pr. crutch.

The site is likely Turkey Pen Ruin. Items identified from this date at the Chicago Field Museum include: 1 cradle (21529), 1 small coil jar (21398), 1 pr. crutch (21516), possible items 21401, 21405, and skeletal material A-3.

March 19. I climbed out of the canon with three large coil jars and took them to the head of the trail on Graham canon.

Graham may have climbed out Coyote Canyon, as this would be the most reasonable and quickest route to cross the mesa to the head of the trail into Graham Canyon.

March 20. We took what relics we had there to the foot of the trail in Graham canon. It is the first day Mc has been away from cave since he hurt his foot.

Likely the two men packed the artifacts, via horseback, down Grand Gulch and then up Graham Canyon to the trail.

March 21. We moved away from Salt Cave to top of trail.

Having transferred their artifacts, they returned to Salt Cave (Split Level), to pack out their camp. They would have had a full day moving all artifacts and gear to the top of the trail.

March 22. Sunday, I was carrying relics up the hill and storing them in a cave near the top.

The horses could not pack the gear due to the rough terrain. This left the men to pack on their backs from the bottom of the trail to the top.

March 23. Rained and snowed last night, carried more relics up, went to see about road in the afternoon. 5 arrow points.

It was obvious that the number of artifacts would require freighting them to Bluff. Graham would have been looking for an easy route with a minimum of tree cutting. This route would most likely have followed the park-like sagebrush and grass "flats", avoiding the pinon and juniper forest.

March 24. We went to look for a road from here to the road from Cane Spring to Bluff. It is about six miles.

They were checking the route to the Mormon Trail, more than likely following the natural parks between the two areas. The spelling of Cane with a "C" suggests that the drainage was name for stands of cane (Pampas Grass) growing there.

March 25. I was cutting out a road today. Mc started for Bluff to see about getting a team to haul our relics out.

Cut trees along this route may still be visible. It still needs to be field checked.

March 26. I finished cutting out the road today.

Little time was spent cutting through the trees. This would seem again to indicate the use of the natural openings and parks found in this area.

March 27. I finished carrying the relics up the hill, went after a metate, found a small one.

This once again points to Graham's interest in the surface sites of the mesa and the difficulty of the climb out of the canyon.

March 28. Went out on mesa about 3 miles to a ruin, did not find anything. Went down the north side of Graham Canon in afternoon, got nothing.

Likely Graham walked a loop around the north rim of the canyon across the mesa and then to the canyon floor. He returned up Bullet Canyon to the trail he and McLoyd had constructed, perhaps past Perfect Kiva and then up canyon or the reverse.

March 29. I went up [upper reaches of Graham Canyon] *after horses after dinner. Mc got back from Bluff with a team. 4 horses and a wood rack.*

Wood racks were four-wheeled extendable wagons. It appears that the horses had remained in the pastures of Graham Canyon, while all the gear was moved to the mesa by their own muscle.

March 30. We packed the relics and got them loaded, ready to pull out in the morning.

March 31. We camped at tanks, got here all right, it snowed all morning and is cold.

The tanks are likely above the twist on the Mormon Trail, perhaps near the rim of McLoyd Canyon or Road Canyon.

April 1891

April 1. We got to Bluff in good shape. stored relics in Woods celler, he is to take them to Durango.

Samuel Wood was an early settler and freighter from Bluff City, Utah. With the burden of transporting the artifacts in his hands, McLoyd and Graham could now travel more easily. McLoyd's bank account for this period in the archives of First National Bank of Durango, Colorado, may also provide more information.

April 2. Camped about a mile above Montezuma Wash, the mail carrier told us about a canon that had cliff houses in it. It is called Lake Gulch, it drains the lake and runs into the Colorado River, 25 miles long, and 35 miles from Cane Spring.

The two men headed home to Colorado, traveling east from Bluff along the San Juan River and camping upstream from the confluence with Montezuma Creek. The mail carrier must have previously traveled along the Hole In the Rock Trail near Lake Canyon and Lake Pagahrit. His information set the stage for the 1892 expedition by McLoyd and Graham.

April 3. Camped at Berlins, 40 miles above Bluff.

Berlin's was a trading post upstream from Bluff along the San Juan River and about two miles south of the junction with McElmo Creek. It would have been near the current southwestern boundary of the Ute Mountain Indian Reservation.

April 4. Camped about a mile below Navajo Springs.

McLoyd and Graham left the San Juan River and followed the wagon road east from Berlin's past the toe of Sleeping Ute Mountain. They camped south of the original government headquarters of the Ute Mountain Tribe at Navajo Springs, about four miles southeast of the present-day town of Towaoc.

April 5. Camped on mesa about half way from the Mancos to Salt Canyon.

The most likely route would have been through Mancos Canyon to Red Mesa. Salt Canyon may have been Cherry Creek.

April 6. Camped at little Navajo Springs.

This location is unknown.

April 7. Camped at upper ranch on La Plata.

The men camped along the La Plata River, probably near the current town of Hesperus or the original Fort Lewis. Their route to this point was probably up the Mancos River and across to Red Mesa or Cherry Creek; however, they may have turned north through the Montezuma Valley as was indicated on the April 5 date.

The Helen Sloan Daniels' version of the diary concludes with the following:

"We went practically the same way on our second trip and instead of going down the Grand Gulch, we went around the end of it and took the Old Mormon Trail. The ruts made by the wagon tires still showed very plain on the rocks and it was not hard to follow. (The Mormon Trail was made when the Mormons came from Cedar City across Southern Utah to Bluff. There was no road and in some places there was no way to get around the gulches and they had to slide their horses down and then snake their wagons down with ropes. There was not always water. Scouts would be sent out ahead to scout for water and one scout found a lake this side of the Colorado River. When he came to lead the party to it he couldn't find it and they had to make a dry camp. The next morning they got up and started looking for the lake and found it within a short distance of the camp.) When we came to this lake we quit the Mormon Trail and took the canon with the stream that drained from the lake and followed it to the Colorado River. We thought there might be some good trapping on the Colorado but there were too many ahead of us. We came back and went down White Canon a little ways, but we did not find any

good houses or many relics so we came back to Grand Gulch. This time we had four horses and about five or six burros.

The bowls, jars, skeletons and other relics, we brought back in 1891 we sold to a C.H. Green, the pastor of the Baptist Church in Durango, who later took them to Colorado Springs,, Denver, and east to exhibit. On July 18, 1891, I went to Colorado Springs and stayed about a month, telling about the relics while they were on exhibition there.

When we were going over Clay Hill, we were going down one gulch going west, and we came to a place where another gulch crossed it a right angles; I have never seen another place like that.

We sold half of the collection we gathered the second trip to the man who owned the land on which the Aztec Ruins are on. I think he sold the other half to an eastern museum. Howard and McLoyd sold their collection to the Denver Museum."

Graham's reminiscences refer to a number of expeditions to Grand Gulch and southeastern Utah by Charles McLoyd. These expeditions were:

1. McLoyd/Graham 1890–91.
2. McLoyd/Green/Ayres June 1891
3. McLoyd/C.C.Graham/J.T.Graham 1892
4. McLoyd/J.H. Graham 1892.
5. Mcloyd/J.H. Graham 1893–94 (was this John Wetherill and/or with Billy Wells, Jim Jones, and Emory Knowles ?)

Signatures within Grand Gulch have been identified for four of these expeditions numbers 1,2,4, and 5. Further signature research of dates in Natural Bridges, White Canyon, and the canyons of the Colorado would likely verify number 3 as well. There is no question that these men did the most complete early excavations in southeastern Utah.

The following page of entries in Graham's diary presents further clues to the 1892 expedition to the canyons west of Grand Gulch. Graham was making notes that reveal his and McLoyd's interest in the canyons west of Grand Gulch:

about canons on East side of Grand Gulch

is there any canon between mouth of G.G. {Grand Gulch} *and the canon from the lakes.*

any houses in canon from lake

is there any canon draining into Comb Wash or into White Canon

how many canyons are there running into the Grand Canon above San Juan. do you know of any canons [unreadable] *on the other side of* [unreadable] *(San Juan) or any where else.*

get directions from cane spring on both roads to water [unreadable]

about stones

about Gold

about [unreadable]

Who were these questions for? The mail carrier?

Summary of the first McLoyd trip to Grand Gulch and southeastern Utah

Charles McLoyd and Charles Cary Graham left Colorado for Grand Gulch in December 1890 and stayed through March 1891. After following the Mormon Trail from Bluff to Kane Gulch, they searched the rims of the canyon near present day Bullet Canyon for a route into the canyon. Finding one, they built a trail to the bottom of Bullet Canyon, carried their gear to the grassy plain below, then led in their horses. Excavations began at Perfect Kiva and continued down Bullet Canyon to Grand Gulch. They explored down Grand Gulch to Shangri La Canyon near the San Juan River. Having little luck, they returned to upper Grand Gulch above Bullet Canyon, excavating heavily in the large cliff dwellings between Bullet Canyon and Kane Gulch.

Camp locations include:

1. Bullet Canyon near the forks
2. near Jail House Ruin in Bullet Canyon
3. below the mouth of Bullet Canyon
4. Polly's Island
5. near Bannister Ruin
6. the Arch in Lower Grand Gulch
7. near Shangri La Canyon
8. in Step Canyon
9. at Split Level Ruin

It is important to note that during this first expediton they began excavating only in the alcoves which also contained aboveground dwellings. Only later, perhaps on the second trip (Green Expedition) would they excavate into burial caves and collect Basketmaker material recognizing the differences in skeletons and artifacts. If more detailed records had existed, it is possible that they would have been credited with the discovery of the Basketmakers.

Charles Cary Graham's diary entries are the earliest records of archaeological excavation from southeastern Utah. His interest in maintaining these journals so meticulously, and recording his and McLoyd's names upon the canyon walls of Grand Gulch, began the examination of the archaeological record in southeastern Utah.

Expedition Reconstruction: Wetherill 1893–1894

Richard Wetherill led two expeditions to Grand Gulch. The first began in the winter of 1893–1894 and the second in late January or early February of 1897. Work has focused on documenting inscriptions found from these expeditions, reconstructing the routes traveled, and pinpointing many of the excavated sites. In addition, Richard Wetherill and his parties visited and excavated many other sites. These sites are referred to in order to provide an overall context for the explorations in Cottonwood Wash and Grand Gulch.

Richard's expeditions originated at the Alamo Ranch along the Mancos River in southwestern Colorado. Three different routes may have been used dependent upon the time of year, weather, final destinations, and archaeological sites to be visited.

Travel Routes

Both the 1893–94 and 1897 expeditions starting in winter traveled two possible routes:

1. Along the Mancos River south and west then north and west to Navajo Springs and on to the trading post of Guillet's at the mouth of the McElmo Canyon, then along the freight road to Bluff City; or

2. Along the Mancos River to the San Juan River above Noland's Trading Post to the freight road and then continuing on to Bluff City, Utah, passing Jewett, Guillette, and Berlin trading posts.

In the late spring, summer and fall months a third route is likely. This followed the northern escarpment of Mesa Verde, reaching the head of the McElmo River and following the McElmo to the San Juan. The Illustrated American Exploring Expedition led by Warren K. Moorehead encountered H. Jay Smith and Richard Wetherill on this route in 1892. The southern route would have been more practical through the winter months.

In Grand Gulch Richard Wetherill was "cleaning up" the sites previously excavated by McLoyd's expeditions. Mention of Mcloyd's name regarding damage of exposed skeletons and materials is continuous throughout the Hyde Exploring Expedition field catalog from 1894.

Expedition Members

Robert (Bob) Allan (guide/wrangler)
* Wirt Jenks Billings (recorder/excavator)
* James Ethridge (excavator)
* Harry French (excavator)

Charles Lang (photographer)

* Al Wetherill (excavator)
* John Wetherill (wrangler/cook)
* Richard Wetherill (expedition leader) (McNitt 1957a:3)

In 1947 Harry French described the expedition showing two discrepancies with names C.N. Billings who was actually W. or W.J. Billings and Alf Wetherill which evidently was a shortened version of Alfred Wetherill.

As I stated, Richard Wetherill was in-charge, Alf Wetherill, cook; Charlie Lang, photographer, C.N. Billings kept account of everything we took out of these ruins and sent a copy with the collections to the H.E.E. New York City; John Wetherill had the nice job of rustling up the burros when we moved camp. Sometimes it took him a day or two to find them. Bob Allen [sic] *accompanied by one other man would take the collections in to Bluff City and bring out supplies. He made every trip as Bluff was his home and he was acquainted with the people and conditions. Jim Etheridge* [sic] *and myself were the two that went ahead looking for a new camp site whenever we moved. Jim had been in part of that country before, which was a help to us in locating our camps. When we made these trips ahead we would start at day break so we would make it back to our camp at night.* (French, 1947)

Expedition Summary

Richard Wetherill's Hyde Exploring Expedition of 1893–1894 was the most important, lengthy and productive of his two expeditions to Grand Gulch. Eleven caves were excavated east of Comb Ridge before excavation began within Grand Gulch. Approximately 22 other alcoves and cliff dwellings were documented and/or excavated by this expedition within Grand Gulch and on their return to Butler Wash, after completion of the Grand Gulch excavations.

The following quotes suggest that John or Richard may have been familiar with Grand Gulch before the Hyde Exploring Expedition.

Mr. Wetherill was alone the first time he went to Grand Gulch. He went twice after that and it was on the second trip that I was with him. (Hand written note probably by Marietta Wetherill in margin of letter . McNitt 1957b)

The Cliff House material, that came with the McLoyd Collection came from the White Canyon, Armstrong Canyon and the Moki Canyon, tributaries of the Colorado River on the south... I was with them for awhile when they were doing this work. (J. Wetherill, 1930b)

John Wetherill indicates he was with McLoyd and either Howard or Charles Cary Graham. These were likely later trips as evidenced by the January 10, 1893 inscription at Cut-in-Two Cave.

Other scenarios also add to Richard's knowledge of Grand Gulch. Charles McLoyd and Charles Cary Graham's collection of artifacts from southeastern Utah was displayed for some time in Durango, Colorado. Undoubtedly the Wetherill family was aware of these collections and where they were obtained. Robert Allan and D.W. Ayres were two men who participated in excavations with McLoyd in southeastern Utah and were familiar with the Wetherill family. They accompanied Charles McLoyd and C.H. Green on the June 1891 expedition to Grand Gulch.

D.W. (Daniel) Ayres signed the Alamo Ranch ledger on April 19 and June 23 of 1892 (Anonymous ndd:54). D.W. Ayres was at that time supervising the excavation of Step House in the compilation of the Wilmarth Collection for the State of Colorado, signing the ledger "Chief Assistant Historian Department Colorado World's Fair Board—Durango." He had seen McLoyd's collections and visited Grand Gulch. He was also familiar with Bob Allan, a Mormon cowboy from Bluff. His discussions with the Wetherills undoubtedly included detailed archaeological, geological, and human resource information that may have inspired Richard to look westward in continuing his search of southwestern archaeology.

Bob Allan's role would have been to guide the Wetherills into the upper reaches of Whiskers Draw where his and other Bluff families had founded a dairy. His familiarity with the alcoves, archaeology, and routes into Grand Gulch played an important role in guiding Richard Wetherill to the discovery of the Basketmaker. A 1900 photograph shows a pole fence across the mouth of the box canyon which contained the alcove to become known as Cave 7, in which the remnants of the Basketmaker culture would become so important to southwestern archaeology. This corral may have been used by the Bluff families to contain their dairy cattle (Prudden 1903:Plate 29-B; Winston Hurst personal communication 1992). The Hyde Exploring Expedition to Grand Gulch would follow the route pioneered into Graham Canyon by McLoyd and Graham in 1891. This route would have been well known to Bob Allan.

Camp Locations

Camp locations are derived from Hyde Exploring Expedition Field notes, inscriptions, and logical locations for base camps while excavating.

Camp 1. *1st camp a large chimney rock at that place and ruins on all side of it. A good spring in the vicinity.* (Anonymous nda) Winston Hurst (personal communication 1993) has recently confirmed this camp location. It is now recorded as site number 42SA20393.

Camp 2. First Valley of Cottonwood

Camp 3. Upper Butler Wash, believed to be near "Giant's Cave" or Fish Mouth Cave

Camp 4. Kane Gulch or rim of Graham Canyon, somewhere on the old McLoyd/Graham route to Grand Gulch

Camp 5. Graham Canyon (perhaps near Jail House Ruin)

Camp 6. one-fourth mile down canyon below the junction of Graham Canyon and Grand Gulch

Camp ?—Water Canyon or Wetherill Cave in lower Grand Gulch

Camp ?—Polly's Island

Camp ?—Upper Butler Wash

Alcoves Excavated in 1893-1894

Thirty-three "caves" are numbered and listed in the records of the Hyde Exploring Expedition, and reference is made to several other alcoves as well as some open ("valley") ruin sites. Artifact numbers were not correlated with these sites due to the complexity and number of items, and time frame to complete this paper.

Cave 1–location unknown

Cave 2–location unknown

Cave 3–location unknown (found in debris at head of canon, AMNH; Anonymous nda)

Cave 4–location unknown

Cave 5–location unknown

Cave 6–location unknown, perhaps French Cave located in South Whiskers Draw; inscription dates place them in this site at about the right time.

Cave 7–North Fork of Whiskers Draw (see Hurst and Turner, this volume)

Cave 8–North and west of Cave 7 in the north fork of Whiskers Draw

Cave 9–Unknown, but probably in Butler Wash or Whiskers Draw

Cave 10–Giant's or Fish Mouth Cave in Butler Wash

Cave 11–Unknown, possibly one of the lower alcoves below Giants Cave;

Cave 12–Graham Canyon burial Cave 1 [Cave 1 was not numbered by the Hyde Exploring Expedition. It is used here to direct the reader to three alcoves beginning with the upper most in Bullet Canyon that were locations for Basketmaker excavation. Graham numbered

sites beginning with Cliff House 1 (Perfect Kiva), Cliff House 2 (Jail House), etc. It appears that Wetherill or Billings, the reported record keeper, began with the burial cave immediately down canyon from Jail House and labeled it 12.]

Headless mummy with Sandal on feet—dug out and left by McLeod. (Anonymous nda:32)

This cave is in Grand Gulch and one from which McLeod and Graham took so many mummies and baskets, several spots were left untouched. This child was in a grave 2 ft. deep around it was mummy cloth—similar to the previous. A string of black beads upon the neck. White ones upon the arms. A bag of corn meal upon top of it and several sandals. (Anonymous nda:26)

Found exposed on surface—dug out 1 year ago. Foot with sandal on it dug out by previous explorers. (Anonymous nda:31)

A discrepancy exists with the location of this cave in Graham Canyon. Signatures and dates clearly show progression by Harry French beginning in Perfect Kiva on January 8, 1894, and continuing down canyon.

Cave 13—Graham Canyon Burial Cave

Mummy cloth found on surface-dug out by some former parties... Headless Mummy. (Anonymous nda:29)

Both these mummies found on surface where left by McL. & G. (Anonymous nda:32)

This cave is one in which Mcleod [sic] *and Graham found so many mummies and this is one place that they did not dig over. With this* [mummy?] *was a large basket rotten but 4 feet in diameter-one small flat one-18 inches in diameter. A small string of beads on one arm-1 sandal, 2 buckskin bags. The face was up. Head north...* (Anonymous nda:28)

Cave 14—Graham Canyon (Jail House or Perfect Kiva)

Cave 15—Graham Canyon, unknown, but may be the burial cave in Graham Canyon south of Perfect Kiva or perhaps burial Cave 3 [third in succession below Jail House] down canyon three alcoves from Jail House Ruin

No body this was a burial cave but damp. (Anonymous nda: 30)

Cave 16—Graham Canyon, location unknown

Work was also carried on in the side canyon (Graham Canyon) in the caves numbered 12, 13, 14, 15, 16 of 1894. (Anonymous ndd: Camp 4)

Cave 17—Sheik's Canyon—Green Mask Site, referred to by Graham as McLoyd Cave;

Cave 18—Rope Ruin in upper Grand Gulch—located at The Thumb across from the Notch separating Grand Gulch from Sheik's Canyon

Cave 19—Cut-In-Two [Red Elk] sites in Upper Grand Gulch located down canyon from Sheik's Canyon on the west side

Mummified remains of Arms and hands from elbows and legs and feet from knees showing evidence of having been cut off before burial with them was 734. (Anonymous nda:36)

Mummy in bottom of circular grave. Man nearly 6 ft. tall. Knees drawn up Hands on Abdomen. Was cut in two at loins and sewed together again with hair string. (One of the most curious specimens ever found). (Anonymous nda:37)

Cave 20—upper Grand Gulch (Turkey Pen Ruin?)

Turkey droppings at depth of 7 feet. with large jar (Anonymous nda:38)

Cave 21—probably the unnamed alcove in upper Grand Gulch, between Turkey Pen Ruin and Junction Ruin; the roof at this site caved in during the winter of 1978

Dug out by previous explorers or relic hunters—face mashed has a spear point and shaft 6 in. long in head entered under chin. [A drawing of the dart is then presented.] *Kind*

thrown by atlatl—hair brown—cloth on face. Same kind of race—as is found in all B. [Basketmaker Caves] (Anonymous nda:38)

Cave 22—Unknown

Cave 23—Unknown

Dipper: Found on surface in an estufa. (Anonymous nda:38)

Cave 22 and 23 may be located in upper Grand Gulch or possibly in the Step Canyon or Cow Tank areas; no clues are given as to the actual location or if the expedition is now moving to the lower Grand Gulch

Cave 24—middle Grand Gulch Bannister Ruin

Camp No. 6, five miles down the canon from Grand Island on the northwest side of the canon 20 feet above the bottom. This cave had a tier of rooms on a ledge above with ...and other rooms below. We did no work here. This cave was number 24 in 1894. (Anonymous ndc: Camp 6)

Cave 25—middle Grand Gulch, BUK Cave [glass plate photographs taken here in 1894. The location to Bannister makes this cave very probable as 25]

Very little work was done from this camp. Cave No. 25 was visited again with very little result. (Anonymous ndc: Camp 6)

Cave 26—Unknown

Cave 27—Unknown

Breech Cloth and G string found in loose debris—Made of one piece of sheep skin had hair band on-balance of body burned by intruders. (Anonymous nda: 42)

Mountain Sheep horn and Bone implements 1 ft. deep done up in grass. Knife, Sheep horn found on top of basket 972. (Anonymous nda:41)

Cave 28—Unknown

Caves 26 to 29 are most likely burial caves found in lower Grand Gulch at Red Man Canyon, Rope Canyon, Wetherill Cave, and the small dwelling below Wetherill Cave in Lower Grand Gulch

No ruin...

Skull of child—3 inches below surface wrappings all decayed. (Anonymous nda:42))

Cave 29—Unknown; perhaps a small cliff dwelling below Wetherill Cave on west side in lower Grand Gulch

Yucca bundle used in tying roof timbers of estufa together. (Anonymous nda:42)

The only cliff dwelling with an estufa (kiva) found in the immediate area of Wetherill Cave in lower Grand Gulch is located below Wetherill Cave. An Ethridge inscription is also located at this site.

Note: Grand Arch was not numbered, but a short reference in the 1894 field notes sheds some information on artifacts.

Boomerang found under great Natural Bridge or Arch. (Anonymous nda:42)

Cave 30—Allen Canyon, unknown

Stone Axe-with handle at back of cave in waste heap. War club of elk horn at back of cave in waste heap buckskin loops with string. Allen Canyon. (Anonymous nda:44)

Cave 31—Allen Canyon, unknown

Mummy head of Basket Race. Head North—face up—Basket 1050 over face only portion of body found—nothing with it—this cave had been explored previously which would account for not finding anything with some of the bodies. (Anonymous nda:44)

Cave 32—Butler Wash, unknown; perhaps "Ballroom Cave"

Cave 33—Butler Wash, unknown; perhaps the cave south of "Ballroom Cave" with March 14, 1894 Ethridge signature or the second half of the Double Cave to the north (Figure 4.9)

Figure 4.9 Hyde Exploring Expedition in the east fork of upper Butler Wash, 1894. Left to right: James Ethridge (barley visible sitting on top of wall), Harry French (on ledge), Wirt Jenks Billings (in window). (Photograph courtesy of The University Museum, University of Pennsylvania Neg. #S4-140100)

Skull of Cliff Dweller found on surface dug by others who attached no value to it. Skull and hair of two women from Cave 33 back part both had been killed with a blow in the face and buried together with faces up-legs straight-out one mat covered both-nothing with them buried 1 ft. deep. This cave adjoins the forked cave where a great battle had taken place. Feather cloth Cliff Dweller dug out by other explorers. Head Bone with spear point in it found on surface-dug by other parties and overlooked. (Anonymous nda:44)

Other Miscellaneous Butler Wash and Cottonwood Wash Notations

Yucca Rope about 100 feet found in a burial cave down canon from 33. (Anonymous nda:47)

Basket from center of large cave in head of Butler Wash. (Anonymous nda:48)

This is possibly Sand Cave located in the head of the east fork of Butler Wash. A "Billings" inscription is present there.

1893-94 Chronology

A chronology of the 1893–1894 Hyde Exploring Expedition is presented to the reader as evidence of the expedition's development from the earliest contacts with the Hyde brothers through Richard's wish to visit all the sites in Arizona. This chronology is compiled from numerous references that together retell the story of the Hyde Exploring Expedition.

August 12, 1892—An entry in the Alamo Ranch ledger indicates that Fred Hyde Sr., Fred Hyde Jr., and Benny Talbot Babbit Hyde visited the cliff dwellings of the Mesa Verde and were guided by Richard (Anonymous ndd:55).

Fall 1892—*That same fall my father, brother and I began a trip that carried us around the world and we stopped at Mancos to visit the cliff ruins; the railroad folder stated that four horse coaches made the run from Mancos... We arranged then to purchase such finds as the Wetherills might make the succeeding winter; I believe they called it the Hyde Exploring Expedition.* (Hyde, 1930)

Photographs at the American Museum of Natural History show the Hyde brothers among the cliff dwellings of Mesa Verde. The photos were likely taken on this trip.

January 10, 1893—The Wetherill name is incised in Cave 12/19 [Cut-in-Two cave] in Grand Gulch, probably by John Wetherill when he was traveling with Charles McLoyd.

...*The Basket Maker material is mostly from Grand Gulch* [referring to the Hazzard Collection], *a tributary of the San Juan on the North. The Cliff House material, that came with the McLoyd Collection, came from the White Canyon, Armstrong Canyon and the Moki Canyon, tributaries of the Colorado River on the South. This work was done by Charles McLoyd, Howard (J.H.) and Charles Graham and wash and Levi Patrick Lost Canyon, Deep Canyon, Red Canyon, and Lake Canyon have very few ruins in them. I was with them for awhile when they were doing this work.* (J. Wetherill, 1930)

June 22, 1893—Charles Lang, who was to become a photographer for the Hyde Exploring Expedition, signed the ledger at the Alamo Ranch.

> Sometime before 1890, Lang made his way into Utah's forbidding Grand Gulch with a companion named J.B. Nielsen [Nielson] and brought back photographs of cliff and cave dwellings similar to those of Mesa Verde. Possibly a few Mormons had been there in search of stray cattle, but as far as the record shows, Lang and Neilsen were the first white men to enter Grand Gulch. (McNitt 1957a:55).

A recent discovery of an historic photograph of Charles Lang with Joseph Nielson's name on it has been located in the photo archives of the San Juan Historical Society in Blanding, Utah. This was confirmed to be a portrait of Charles Lang in March of 1992 during an interview with his son, Charles Lang, Jr. who supplied several other photographs as well.

> As a consequence of Lang's discovery, Charles McLoyd and C.C. Graham of Durango explored Grand Gulch in the winter of 1890-91, bringing out a large collection of Cliff Dweller relics... (McNitt 1957a:55).

It is likely that C.H. Green, D.W. Ayres, and Charles McLoyd were responsible for Richard Wetherill's interest in Grand Gulch.

> John Wetherill had accompanied McLoyd and Graham on their second trip to Grand Gulch, in the fall of 1892. (McNitt 1957a:55)

John Wetherill indicates that he did indeed accompany McLoyd and Graham on a trip, but it could not have been the second McLoyd and Graham trip to Utah because Reverend C. H. Green was on that one. John Wetherill was likely in the canyons of the Colorado River, not the San Juan River and for a short time in Grand Gulch as is indicated by the inscription from January 10, 1893. (J. Wetherill, 1930)

> The stories Richard heard of these prehistoric ruins determined him to see Grand Gulch for himself. But Charles Lang was again in Mancos this summer of 1893 and he and Richard went into business as photographers. With an eye to the tourists flocking to Mesa Verde they inserted an advertisement in the "Mancos Times": Lang & Witherill, [sic] Photographers. Mancos, Colorado. Cliff Dwelling Views a Specialty! Rocky Mt. Views, orders by mail promptly attended to. (McNitt 1957a:5)

August 1893—*Richard Wetherill went back to Chicago with me to the World's Fair and to visit my folks. He had never been east before. We spent the month of August 1893 in Chicago.* (French, 1947)

When Richard traveled with Harry French to Chicago, he once again contacted the Hyde Brothers and confirmed his funding plans for the Hyde Exploring Expedition to Grand Gulch.

1893 (Perhaps fall)—Richard Wetherill wrote Benny and Talbot Hyde some time after their meeting in Chicago:

I arrived here [Brooklyn, New York] *night before last and will commence on Monday to outfit with such articles as cannot be procured at Durango. I send a form of work that will meet all requirements unless something else occurs to you that would be of special interest. I find there are none printed but I can do as heretofore, secure blanks and mark them myself in this manner...*

Plan of all houses and sections to be made on paper or book to be ruled both ways.

1. Number of house or ruin 2. Number of article. 3. Name of article. 4. Number of room. 5. Number of section. 6. Depth 7. Number of floors if any. 8. Remarks.

Every article to be numbered with India ink and fine pen or with tube paints white, red or black.

Drawings of article to be made on paper with numbers and name. Photograph each house before touched, then each room or section and every important article in position as found.

I think you will find this will meet all the requirements of the most scientific but if you have any suggestions whatever I will act upon them. This whole subject or rather the subject of it is in its infancy and the work we do must stand the most rigid inspection and we do not want to do it in such a manner that anyone in the future can pick flaws in it. (R. Wetherill nda).

Marietta commented on this letter many years later when interviewed by McNitt:

Mr. Wetherill never learned that no matter how perfect the work was done, the jealous would find flaw in it. (Handwritten note in the margin of letter in McNitt archives nd)

November 12, 1893—Richard wrote of a delay in the start of the Hyde Exploring Expedition.

I am unable to secure suitable pack animals...I am receiving inquiries almost daily for such relics as we have. (R. Wetherill 1893a)

November 14-27, 1893 and December 2-11, 1893—Alamo Ranch ledger entries include a Bill of Materials for the 1894 Hyde Exploring Expedition.

a. To Photographs	*$12.00*	*Nov. 18,1893*
b. Bill groceries	*$35.25*	*Nov. 15,1893*
c. Bill groceries	*$44.00*	*Nov. 18,1893*
d. To Hardware	*$21.75*	*Nov. 14,1893*
e. Buros	*$75.00*	*Nov. 20,1893*
f. Drugs	*$ 2.85*	*Nov. 21,1893*
g. George Bauer	*$ 3.50*	*Nov. 21,1893*
h. George Bauer	*$ 8.70*	*Nov. 21,1893*
i. Pack Saddles	*$20.00*	*Nov. 21,1893*
j. Bill Bauer	*$ 4.50*	*Nov. 27,1893*
k. 400" Flour	*$ 9.00*	*Nov. 27,1893*
l. 120" Potatoes	*$ 1.20*	*Nov. 27,1893*
m. Exp on Pho. Mat	*$ 8.70*	*Dec. 2, 1893*
n. 2942 chop	*$36.78*	*Dec. 4, 1893*
o. Cash to Olds	*$ 1.50*	*Dec. 4, 1893*
p. For to Bluff	*$23.80*	*Dec. 11,1893*
q. 50" Graham	*$ 1.00*	*Dec. 11,1893*

(Anonymous ndf: 40)

November 29, 1893

> He left Mancos on November 29, his party including his brothers Al and John, their friend Charles Lang (McNitt 1957a:63).

Charles B. Lang, photographer for the expedition, paid for four months of board at the Alamo Ranch (Anonymous ndf:83).

Figure 4.10 Hyde Exploring Expedition packing out from Bluff City, Utah, 1893. Left to right: Richard Wetherill, James Ethridge, Wirt Jenks Billings, John Wetherill. (Neg. No. 128415, Photo: C.B. Lang, Courtesy Department of Library Services, American Museum of Natural History)

November 22, 1947—*We left Mancos, Colorado about the middle of October 1893, and returned to Mancos the following spring.* (French, 1947)

Harry French's statement disagrees with the dates proposed by McNitt and Wetherill-Grand Gulch Research Project information, but it reflects his memory 50 years after the expedition.

December 11, 1893—Ledger entries for the bill of materials indicate that Richard resupplied in Bluff City, Utah on or about this date (Anonymous ndf:40) (Figure 4.10).

After resting at Bluff City we followed up Cottonwood Canon and then heading the canons and washes to the west struck directly for Elk Mountain and the Bear's Ears twin peaks which are visible for a long distance to the south and west. It took all of one day to break trail up Elk Mt. and we made camp near an excellent spring for four days; our burros mixed with a bunch of wild colts and were not so easily found. (Hyde 1930b)

This likely refers to the expedition in which Richard Wetherill took the Hyde brothers to Grand Gulch in the summer of 1894. It provides clues to the routes the expedition may have taken during the fall of 1893.

My notes in addition to the field notes and letters indicate that Richard Wetherill made expeditions to Grand Gulch in 1893–94 and again in 1897 (not in 1896). Talbot Hyde incorrectly informed Clark Wissler, in the early '30,s that RW also went to Grand Gulch in the winter of 1894-95. (McNitt 1953)

Evidence suggests that at least a portion of the Hyde Exploring Expedition left Bluff City on or about December 11, 1893, perhaps guided by Bob Allan. They went up Cottonwood Canyon from Bluff City to the Chimney Rock Camp and went on to "First Camp in the First Valley of Cottonwood" (see Figure 4.11). Wetherill's party had deviated from the earlier routes of Charles McLoyd and C.C. Graham, which followed the 1879 Mormon Trail route from Bluff City to Kane Gulch. Perhaps this deviation was due to a need in finding water and grass for the animals in an area that had been intensely grazed by cattle. It is probable that Bob Allan,

Figure 4.11 Camp of the Hyde Exploring Expedition, First Valley of Cottonwood, December 1893. Left to right: Harry French, Wirt Jenks Billings (standing), James Ethridge (sitting), and Richard Wetherill. (Neg. No. 338265, Courtesy Department of Library Services, American Museum of Natural History

being familiar with the country, was able to solve a combination of problems using this alternate route. Adequate grass and time for their animals to recover, combined with an ample supply of caves not looted by McLoyd and Graham attracted the expedition to First Valley Cottonwood.

No inscriptions have been found in lower Cottonwood Canyon north of Bluff City, Utah from this expedition to date.

December 12, 1893—Harry French signed his name in a ruin in Whiskers Draw. The Wetherill–Grand Gulch project has named this "French Cave." (Figure 4.12)

December 17, 1893—*First Valley Cottonwood Creek—30 miles North of Bluff City. In the cave we are now working we have taken 28 skeleton with two more in site... I am satisfied to work here for a couple of weeks.* (Richard Wetherill, 1893b)

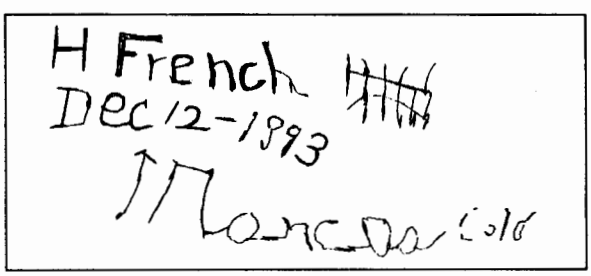


Figure 4.12 Inscription from French Cave, south of Whiskers Draw. Hyde Exploring Expedition (Blackburn drawing)

Figure 4.13 Cave 7 during the December 1893 excavations. Front: Wirt Jenks Billings, Rear–left to right: James Ethridge, Harry French, Al Wetherill, Robert Allan and John Wetherill (Photograph courtesy of The University Museum, University of Pennsylvania, Neg. # S4-139872)

Richard Wetherill is referring to Cave 7 in Whiskers Draw.

December 20, 1893—James Ethridge wrote his name in Cave 7 Whiskers Draw.

December 21, 1893—*Bluff City, Utah. We have only worked one Cave there is hundreds of them here, but all of this class of digging is deep... You would be much interested we have now taken 90 skeletons from one cave the heads are different from the Cliff Dweller.* (R. Wetherill 1893c) (Figure 4.13)

I remember the arrow points we found in the vertebrae in Hamond with about 90 skeletons we dug out after you followed the dark streak in the sand about four feet below the two feet of cliff house rubbish that covered it. Also the many pipes and atlatl points. I started Earl Morris out right in Canon del Muerto in 1924 before he had his permit to dig. I found five at the bottom of the cliff at Mummy House. (J. Wetherill 1930a) (Figure 4.14)

Figure 4.14 John Wetherill excavating in Cave 7, December 1893. (Photograph courtesy of The University Museum, University of Pennsylvania, Neg. # S4-139899)

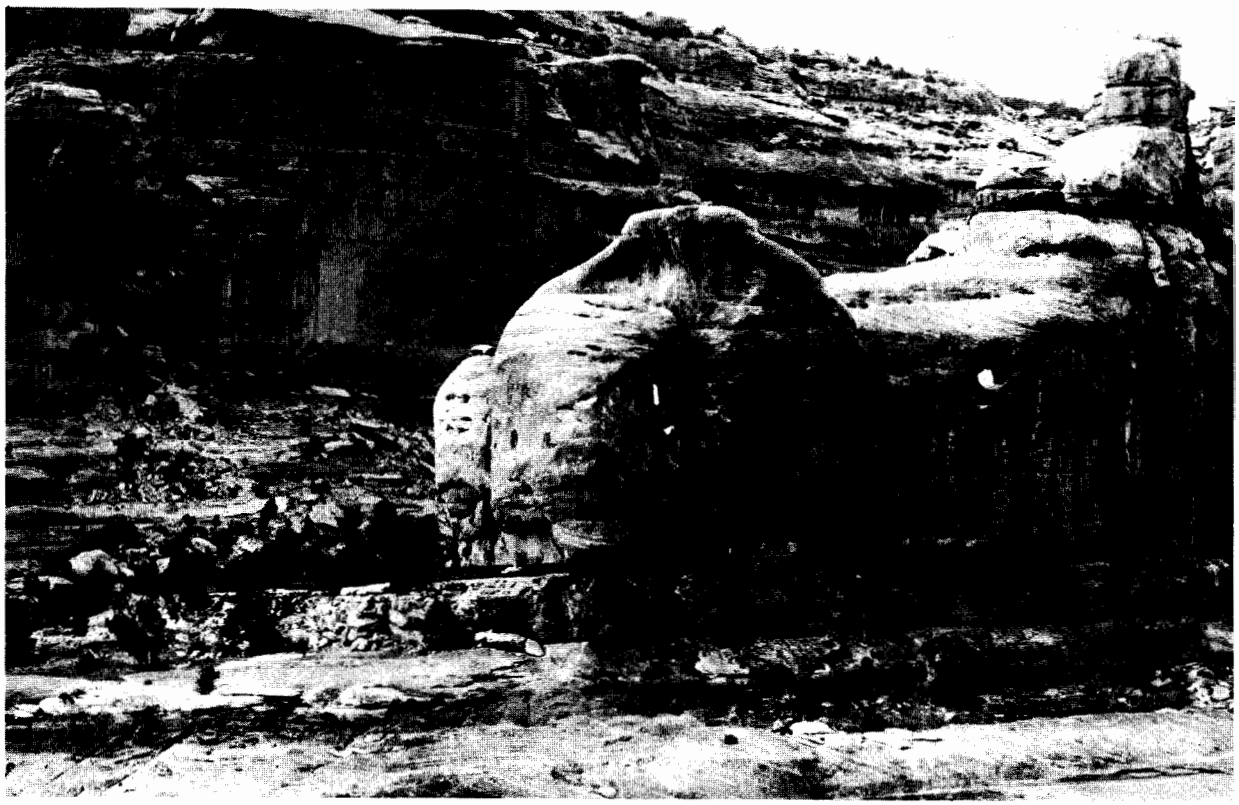


Figure 4.15 Jail House Ruin, Bullet (Graham) Canyon, 1894, Hyde Exploring Expedition. (For a close up of Jail House Ruin in 1891, see Figure 4.8.) (Neg. No. 338266, Courtesy Department of Library Services, American Museum of Natural History)

December 25, 1893—*The entire party never went into Bluff City together except Christmas 1893. While we were there, we were generously entertained by the high moguls of the Mormon Church. This was arranged by Bob Allen [sic], who was a Mormon... This particular winter was wonderful for our trip. It was a mild, open winter and we had very little snow.* (French 1947)

December 31, 1893—Wirt Jenks Billings signed his name in Cave 10 (Fishmouth or Giants Cave) in Butler Wash.

January 1, 1894—Wirt Jenks Billings and Harry French signed their name in Cave 10 (Fishmouth or Giants Cave) in Butler Wash.

The sequence of letters and dates indicates that the entire party left north Whiskers Draw on December 20, 1893. Perhaps they hauled their artifacts for storage, warmed up, and then resupplied for the second portion of the expedition to Butler Wash and on to Grand Gulch.

As our collections accumulated, we took them to Bluff City, Utah by burros. From there, they were transferred to wagons and sent to Durango, Colorado, and from there to New York City. Two men at a time would go to Bluff City with our findings, load up with provisions and return. (French 1947)

Burros were very important in the transport of artifacts. Their small size, sturdy nature and hardiness would play an important part in following the trail into Graham Canyon.

January 8, 1894—*A resupply was completed in Bluff City, Utah, that included 300 pounds of flour and 100 pounds of pork.* (Anonymous ndd:40)

Harry French inscribed his name in Perfect Kiva in Bullet (Graham Canyon). The location and date of this signature provides a clue to the route followed by Bob Allan. They likely followed the previous route pioneered by McLoyd and Graham, entering the middle reaches of Graham Canyon. This date is the earliest found thus far in Grand Gulch from the Hyde Exploring Expedition.

Wetherills's cave numbering system for Graham Canyon in 1894 was explained in the 1896–97 field notes. Caves 12–16, the first after leaving Butler Wash, were excavated in Graham Canyon.

January 19, 1894—Harry French signed his name at Jail House Ruin in Bullet or Graham Canyon (Figure 4.15).

This inscription was left eleven days after the inscription in Perfect Kiva. This would suggest that a camp had been established at or near Jail House Spring in Graham Canyon. Caves that have the highest probability of being caves 12–16 include Perfect Kiva, Jail House, Burial Cave 1, Burial Cave 2, and the burial cave south of Perfect Kiva on the southern wall. The Cartier Expedition indicates little or no excavation had occurred in Burial Cave 3 prior to their excavation in 1920.

January 25, 1894—John or Al Wetherill inscribed his last name on Quail Panel at Step Canyon. Richard indicates that the party had split. He had sent Al and John into the lower reaches of the canyon for exploration of archaeological sites worth excavating.

January 25–26 1894—Wetherill inscription with elf face in Wetherill Cave lower Grand Gulch.

January 26, 1894—James Ethridge writes his name at Cave 17—the Green Mask site in Sheik's Canyon.

One of the Wetherill brothers (Al?) left his name in three locations: Ghost Panel in Dripping Canyon, Pornography Panel in Cow Tanks Canyon and in Wetherill Cave.

Al Wetherill is believed to be the artist for an elf-like caricature drawn with the dates mentioned above. Comparison of Ethridge's inscription with the same date as these and a note in Richard's journal, we can place these two individuals in the area at this time. Al Wetherill was later to guide Alice Eastwood on botanical expeditions in and around John's Canyon. A Wetherill inscription near the mouth of John's Canyon also shows the elf caricature. The elf appears again in Wetherill Cave in lower Grand Gulch, and at Quail Panel (Step Canyon). Another recurring motif, a rear view of donkeys loaded with pack saddles, also occurs at the same locations (Ghost Panel, Pornography Panel in Cow Tanks Canyon, and at Wetherill Cave).

During the fall of 1992 Blackburn cross-identified letter styles used by Al Wetherill. Blackburn found a message scribbled on the wall at Inscription House in the Ute Mountain Tribal Park of Mancos Canyon. Comparing letter styles with those of Al Wetherill at Tree House in the Ute Tribal Park and that of John Wetherill, he found no similarity between John's writing of his name and at least four matching styles with Al's. Although not completed as of this writing, it should hypothetically be possible to cross match drawn inscriptions from Grand Gulch and verify whether Al or John completed the signature inscriptions in that area.

January 29, 1894—Harry French signed his name in Cut-in-Two Cave.

Documented inscriptions clearly indicate that the party split and explored different parts of the canyon. John and Al Wetherill were in the lower canyon below Bullet (Graham) Canyon, while James Ethridge and Harry French excavated in Green Mask and Cut-in-Two caves (Figure 4.16).

February 1, 1894—*Richard, Al and John have been in Utah all winter, excavating for a party in New York, I think for the American Museum. They are having splendid success...* (B.K. Wetherill, 1894a)

Figure 4.16 Climbers into Cave 18, Grand Gulch, Hyde Exploring Expedition, 1894. Top to bottom: James Ethridge, Harry French, Wirt Jenks Billings, Richard Wetherill (Photograph courtesy of The University Museum, University of Pennsylvania, Neg. # S4-140105)

February 4, 1894—*It is now three weeks since I left here for Grand Gulch...* (R. Wetherill 1894a)

Richard must have left directly from Bluff City to Grand Gulch after completing excavations in Cave 10 (Giant's or Fish Mouth Cave).

We worked in two caves two days where McLoyd dug out so many mummies... (R. Wetherill 1894a)

Richard's information may be referring to Cave 17 and Cave 19 (Green Mask and Cut-in-Two caves).

I sent Al and John fifty miles down the canyon to look at some caves. In the meantime, the rest of us moved seven miles up the canyon to some ruins that McLoyd worked... (R. Wetherill 1894a)

This is perhaps Split Level Ruin (Salt Cave).

On Al and John's return from the lower end of the canyon, they told of several caves that had been overlooked entirely by previous explorers... (R. Wetherill 1894a)

McLoyd and Graham had not returned to this section of the canyon after their initial visit during the winter of 1890–1891. This gives further credence to the concept that they did not know how to identify Basketmaker burial alcoves during the initial days on their first expedition.

They dug a few minutes in each and found human remains. The next day after their return we worked in a cave that had a cliff house in it, and which had been previously worked. There we found nine mummies more or less perfect, one of them a remarkable

specimen, and a greater find than any we have yet made. I saved all the skeletons from the first cave as I thought you would want them for study, but I will not save any more; the distance is too great, but will save all skulls. (R. Wetherill 1894a).

This discovery occurred in Cave 19 (Cut-in-Two Cave) down canyon on the west side of Grand Gulch from Shiek's Canyon.

Whether it is a specimen of surgery or not, I have not yet determined but think it is... We find that the cave dweller, or whatever you may name them. (which you should do. I named the cliff dwellers, and you should have the honor at least of naming these, since it is your expedition...) I wish, if you can, you would send to the First National Bank at Durango, one hundred and fifty dollars, ($150) to be placed to my credit, the balance, if you can, place to the credit of B.K. Wetherill... (R. Wetherill 1894a)

Bank records show this deposit was made from the Chemical Bank (First National Bank of Durango, 1894:581). Al Wetherill also is listed. (First National Bank of Durango 1894:586).

It has taken a good deal in provisions up to date. I am now buying them at Bluff, on expectation. I have furnished all hands with horses to ride, for which I am charging you nothing, also three pack mules of my own. I do this on account of my interest in the work. (R. Wetherill 1894a)

Entries for purchases on this date in the Alamo Ranch ledger are absent. It would seem, however, that at least Richard and perhaps the entire crew returned to Bluff City probably to pack artifacts for storage and to prepare for a return to Lower Grand Gulch to investigate the caves found earlier by John and Al.

February 6, 1894—Richard was still in Bluff City and had written Gustaf Nordenskiold who was dying of turberculosis in Finland at the age of 25 (R. Wetherill 1894b).

February 20, 1894—*The boys are still in Utah excavating and meeting with good success.* (B.K. Wetherill, 1894b)

February 21, 1894—James Ethridge signed his name and date in an alcove near Side Canyon or Water Canyon (Wetherill Cave) in lower Grand Gulch.

Clayton Wetherill stakes notice of location for a mineral claim in Cedar Gulch with the San Juan County assessors office in Monticello, Utah. (Anonymous 1894).

February 22, 1894—James Ethridge inscribed his name and date in an alcove near Rope Canyon in lower Grand Gulch. Wetherill and Wirt Jenks Billings inscriptions were also found in this area. The cave known as Wetherill Cave in lower Grand Gulch contains numerous inscriptions which may indicate a camp and excavation location.

This evidence indicates that the Hyde Exploring Expedition re-entered Grand Gulch in February 1894 to excavate in the lower canyons of Grand Gulch. The sites excavated were likely located in Red Man, Rope and Water (Side) Canyons as previously reported by John and Al on their exploratory trip. These caves were likely labeled 26–29. No further inscriptions or dates past February 22 have been found in Grand Gulch for the year 1894.

March 10, 1894—Charles Lang "expressed" four dozen glass plates (Anonymous ndf:38).

March 14, 1894—James Ethridge inscribed his name in Ballroom Cave in upper Butler Wash.

March 15, 1894—Wirt Jenks Billings inscribed his name in Sand Cave in upper Butler Wash.

March 17, 1894—Entries were credited to Richard for $300 and to B.K. Wetherill for $431.15 (Anonymous ndf:40).

March 18, 1894—Robert K. McNeely payed $100 cash for artifacts (Anonymous ndf:41).

McNeely donated these artifacts to the University of Pennsylvania in 1895. Alessandro Pezzatti, curator at the University of Pennsylvania Museum, confirmed that glass plate photographs pertaining to the 1893–94 expeditions were included in the donation (Pezzatti to Blackburn November 25, 1992). These photographs correctly identified Cave 7 and provided enough inherent information to enable identification of the famous Basket-maker burial site. The collection includes a mummy and associated material from Cave 17 or the Green Mask Site in Sheik's Canyon. McNeely's purchase also indicates that some collections had already been received at the Alamo Ranch.

Wirt Jenks Billings inscribed his name in Ballroom Cave in upper Butler Wash.

March 20, 1894—*I will be able to send on 12 or 13 skulls of the new race...They will be the only ones outside of this collection so will send photographs when we finish them showing names of burial and caves in which...they were found.* (R. Wetherill 1894d)

I have now laid the most of the outfit off until I hear from you. Our last trip out up to Blue Mountain has been very successful having found a billet of elk horn, very heavy and strung on small end. Another back bone with one leg attached, with spear point in it yet. Another thing is 50 feet of rope, the only one ever found. The collection should really be renumbered and I think the plans will yet have to be drawn from the measurement that I have. I gave up trying to do all that part of the work in the field-too much dirt and sand and no way to get rid of it unless I took a great deal of valuable time. I think also before the collection is shipped you should see it. You cannot realize what a valuable collection it is. I have a good deal of work to do on it when I get back to the ranch which will take about a month... On the way home I will stop at Snyder's in Montezuma Valley. They have started a well there and dug down about twelve feet and struck a layer of skeletons and have now taken out fifty and many more in site. (R. Wetherill 1894e) (Figure 4.17)

Figure 4.17 "Snyder's Well" visited on the return of the 1894 Hyde Exploring Expedition. Top–left to right: Robert K. McNeeley (?), Snyder family (?), Harry French (sitting), James Ethridge (in bottom of kiva) and Wirt Jenks Billings (leaning on shovel). (Neg. No. 337421, Courtesy Department of Library Services, American Museum of Natural History)

March 28, 1894—*I am in the field where I like to work and have no thought for anything else while here, but it is necessary to have supplies enough as soon as I can so that you can write a couple of articles for the American Archaeologist. They are anxious to have it. I told Mr. Moorehead that I would write them with your permission if you did not wish to but I think you should do it, by all means.* (R. Wetherill 1894e)

This likely refers to a later article published by the *American Archaeologist* and authored anonymously by "H."

While the boys were waiting they have gone down the canyon to locate some placer claims for themselves. (R. Wetherill 1894e)

This reference to staking claims, combined with Clayton Wetherill's previous filing, indicates the Wetherills were not ignoring the potential gold discoveries in the area. At this point the expedition team was waiting for approval from Hyde to continue explorations in Chinle and Tsegi Wash areas of northeastern Arizona as well as for additional funding. The Hyde brothers' erratic funding may have forced Wetherill to sell some of the collections to pay his debts. This may provide the answer to the missing collection from Cave 10 where no artifacts are noted and yet numerous inscriptions and Harry French's letter indicate a large number of Basketmaker artifacts originated.

Recollections, 1894—*The plan of Kit Seal and description was written out by Teddy Whitmore, the tutor of George Bolles, the man who was supposed to be putting up the money for the trip. They held both Whitmore and Bolles Captive on Moqui Rock, until they could get a man out and cash a check to pay off, some of the men.*

The creek you are calling Chille, is the one named by Kit Carson, Laguna Creek, we call it Kayenta Creek now as all the lakes have been washed out, Laguna Canyon is now known as Sagie Canyon. Moqui Rock is about three miles from here. The short creek you mention is known as Kay Kuddy. The other ruins you describe are very easy to locate, but the distances are wrong. The large Cliff house you speak of on the Chinlee is between the mouth of the Kayenta and where the Chinlee runs into the San Juan. Richard called both the Chinlee and the Sagie, Chelle. Chelle or Chin Lee means water flowing toward you through a canyon. Both streams are called Chin Lee at certain points by the Indians.

The work done on Kit Seal, was done in April 94 and also in April 96... I was not with Richard on either of his trips in the Sagie but from his descriptions it is easy to locate anything he mentions and follow his work through. He did his work so thorough, that in the ruins where he worked there is very little of value left, except the ruins. (J. Wetherill 1918)

April 11, 1894—I am at Mancos and working on the collection...beside the Chelle relics will have to be marked. (R. Wetherill 1894f)

April 13, 1894—*Enclosed find shipping receipt for box of 12 skulls of the Basketmakers we call them that because they made no pottery and did not make houses but lived as the Indians now do except they made their caches in the caves in the Cliffs and buried their dead there as well as using these places for storage.* (R. Wetherill 1894g)

Skulls shipped to Nordenskiold were not from Cave 7 but there may be information regarding their provenience in Nordenskiold's papers, which have not been located or examined.

May 18, 1894—*I am glad you are coming so soon. There is no detailed map of this country except one made here, and that is not very accurate. ...your friends can provision themselves and one of the boys can do the cooking.* (R. Wetherill 1894h)

This trip with Hyde may have been a fishing expedition in the La Plata Mountains, north of the Alamo Ranch, as well as a trip to Grand Gulch and Cottonwood Canyon.

Recollections—*I urged the accurate measuring and plotting of caves or cliff houses, with a map of Grand Gulch to be made in the field and promised special record keeping equipment should the work be continued...The reports we received were so encouraging, after our year's absence, that we decided to send the Wetherills' into Grand Gulch again, this for the winter of 1894–95.* (Talbot Hyde 1930a; 1930b)

Talbot Hyde is not a reliable source for dates. He is again confusing the expedition with the 1896-97 work. Hyde did not initially fund this expedition, however, he later bought it from a financially troubled Teddy Whitmore. There is no evidence to indicate Wetherill excavated in 1894–95.

Frank McNitt agrees:

My notes, in addition to the field notes and letters, show quite clearly that Richard Wetherill made expeditions to Grand Gulch in 1893–94 and again in 1897 (not in 1896) Talbot Hyde incorrectly informed Clark Wissler, in the early 30s, that RW also went into Grand Gulch in the winter of 1894–95. Also my notes show that Richard discovered Kiet Siel in the spring of 1895, probably in March. There are a number of references (two in letters written by John) to a diagram or floor plan of Kiet Siel made by Richard at this time, as well as a map he made of what he called Chelle Canon, but unfortunately I have been unable to locate either. (McNitt 1953)

May 26, 1894—Richard Wetherill's bank account was credited with a deposit for $600.00 (First National Bank of Durango 1894:570).

June 20, 1894—Barton and Perkins, both known Mormon freighters from Bluff City, Utah, were paid for freighting (Anonymous ndf:40).

July 3, 1894— *...but I can give you an outline of our finds by sending you a copy of notes and ground plans of caves. We did not do as scientific work as should have been done if I had been well supplied with funds. The photographs Al sent he wrote on the back of them some explanations. They are made on scraps of old paper and are not very good but will give you an idea. On my lists a note. Art. stands for the number of article H stands for the number of house or cave. R. for room-S. for section. F. for floor. 1st, 2nd, etc. Minus figure before figures means depth-this-5. 5'5" means 5 feet 5 inches. B.C. means burial cave or mound. All skeletons are of the Basket Race unless otherwise specified... as the ground plans correspond with those in quotes and the direction of the arrows—indicate the position of the bodies. These notes may be so meagre that you can do nothing with them but I hope you can... I made the photographs of which I am very proud...* (Richard Wetherill, 1894j)

July 24, 1894—*Richard and Al have not yet returned from Utah and Arizona.* (B.K. Wetherill 1894c)

Richard and Al must have returned to Utah in order to explore the canyons south of the San Juan River. There are no indications that they were north of the San Juan during this time period.

July 31, 1894—*Think the boys must have written you from Bluff. I therefore enclose slip. We are all enjoying good health. Think the boys will be back at the ranch about the 7th of August.* (B.K. Wetherill 1894d)

Benjamin's letter supports the idea that the two brothers continued to explore after completing the cataloging.

September 4, 1894—*I shipped by express all relics except the bones of the 96 skeletons. The heads of these skeletons were all shipped... You did me a great deal of good while here. I now begin to feel the effects of it. Everyone that has been here lately wants Cliff Dweller relics or Basketmaker. The mound relics they do not seem to care about, except for comparison.* (R. Wetherill 1894j)

Richard was selling artifacts at the Alamo Ranch. Were these artifacts from Butler and Cottonwood Washes? Where are these collections today?

October 16, 1894—*Yours of the 4th just received. You must remember there are still eight boxes of relics here of yours consisting of bones. They are stored in a dry place and can remain where they are until you want them... They are still working the gold fields but it takes capital to work the claims we have. Clate got his horse back and he certainly is a fine one... I got the old mummy from* [William J.] *Nix at Bluff, on what he owed me and a large basket.* (R. Wetherill 1894k)

The tone of this letter indicates that Richard has access to other Basketmaker material from southeastern Utah.

Figure 4.18 George Bowles, student of Teddy Whitmore, on the plaza wall at Perfect Kiva, Graham Canyon, 1897. (Neg. No. 338270, Courtesy Department of Library Services, American Museum of Natural History)

January 12, 1895—*I will return by way of Arizona and visit every ruin known of by the Indians if I can possibly do so and get back in time to go with your expedition which I am pleased to do.* (R. Wetherill 1895a)

This expedition reference is confusing. Was this another visit by Hyde to Grand Gulch?

This concludes the expedition chronology from the 1893–94 Wetherill expeditions to Grand Gulch as sponsored by the Hyde brothers, in addition to side excursions into northeastern Arizona. Richard's explorations were extensive during this two-year time period. His travels to numerous parts of the Southwest make it difficult to unravel the true extent and provenience of collections. Many items collected on the Hyde Exploring Expedition never made it to the American Museum of Natural History. Although more notes may have been made than have been found, the field catalogue from the 1893–94 expedition is likely the only existing record for the expeditions. Records should be checked thoroughly when the Heye Foundation collections are transferred to the new National Museum of the American Indian.

Expedition Reconstruction: Wetherill 1897 (Whitmore Exploring Expedition or WEE)

Richard Wetherill began his second expedition to Grand Gulch during the winter of 1896–97. Unlike the first expedition, Richard headed directly to Grand Gulch. His focus was to excavate in the large cliff dwellings and alcoves found in upper Grand Gulch. Richard made many of his plans for this second expedition at Chaco Canyon, New Mexico, where he was excavating with George Pepper as part of the continuing Hyde Exploring Expeditions. The expedition excavated in 12 separate alcoves and was to be his last in southeastern Utah. The winter weather was snowy and very cold, and artifacts were few. Glass plates were frozen and broken while being developed. Although documentation for

this trip is extensive, many of the cave locations have been difficult to relocate and verify.

Expedition Members

George Bowles (ward of C.E. Whitmore) (Figure 4.18)
* Orian H. Buck or Buk (excavation)
E.C. Cushman (packstock)
* James Ethridge (excavation)
George Hangrove or Hairgrove (kitchen)
Hal Heaton (kitchen)
William Henderson
* C.C. Mason (excavation)
Clayton Tompkins (artifact inventory & packing)
Clayton Wetherill (riding stock)
* Marietta Wetherill (recorder)
* Richard Wetherill (leader)
C.E. Whitmore (financier)

(McNitt 1957a:155–156)

Clayton Tompkins may have been missing both legs and performed his part of the work while based in Bluff City during the expedition (Tom Wetherill, personal communication 1990; Carol Ann Wetherill, personal communication 1992).

Richard Wetherill describes the expedition roles as follows:

Levi Carson and E.C. Cushman had charge of the pack train after camp was located in Grand Gulch. Making weekly trips for supplies and horse feed to Bluff City which was the base of supplies.

Clayton Wetherill and George Bowles looked after the riding stock and pack animals not in use, looked up fresh workings and kept the camp in fresh meat... (Anonymous ndd:1)

Very little work was done from this camp [Polly's Island]. *Cave 25 was visited again with little result. The plan was for a part of the outfit to go to the Colorado River to visit a few caves and the balance to work on down the canon. Provisions failing, the animals getting poor and weak, the plan was changed. Buck, Mason, and Bowles starting from here to go to Mysterious Canon. The balance of us with the relics to go to Bluff and refit. Thence Clate, Henderson and Etheridge* [sic] *to make the Colorado and Moki Canon trip. The others of us to go to Marsh Pass, Arizona.* (Anonymous ndd:7)

The camp Wetherill refers to in the latter paragraph was located at Polly's Island.

Expedition Summary

No grass whatever was found. The animals subsisted on the grain fed them with the tops of brush which they picked. Before leaving there were many very weak and thin. We had several extra ones on the way down to use in case of accidents which proved of frequent occurrence. One animal fell off the trail where it wound about a ledge going into the canon and was killed instantly. (Anonymous ndd:1, 2)

The Whitmore Exploring Expedition pioneered a route down present day Kane Gulch during the winter of 1896–97 (Anonymous ndd:Cave 1). The ledge referred to is still evident in the modern trail down Kane Gulch.

Another fell off a cliff with the same result. Two gave out completely and were abandoned. 3 others when nearing Bluff were left exhausted. A cache of grain we had on the road had been taken leaving our animals without food for two days.

Another animal when near Bluff fell about 20 ft. with a pack and could go no farther making a total loss of 9 horses. (Anonymous ndd:1, 2)

By 1896 many of the sites had been completely excavated. Little Basketmaker material was found. A combination of weather, lack of artifacts and animal hardship forced the early ending of the expedition in Grand Gulch. It is likely that even in the 1890s overgrazing of the canyon had already destroyed the riparian habitat, leaving little food available for the animals.

On our return to Bluff our party was broken up—and relics shipped to Mancos by wagon. Mormons being willing to do this work for 1 1/4 cents per pound.

A side expedition was sent to Moqui Canyon—it was barren of results as far as Relics were concerned. Gains of the Geological Survey told about the wonderful caves to be found there but did not know of anything in them except Pot holes in the floors.

Clayton Wetherill, with Wm. Hendersen and James Ethridge as assistants–with ten pack animals loaded with supplies for a month's trip–visited this canyon for the purpose of finding out about Basket Maker materials.

On their return they reported wonderful caves with many Pot Holes in them but all entirely empty. (Anonymous ndd:4)

The Moqui Canyon area had been dense with Basketmaker occupations but was previously worked by McLoyd and Graham between 1892–1894.

The severity of the weather and the weakened condition of the horses made Richard change his plans as the work in Grand Gulch came to an end. Instead of the entire party enduring the unrelieved hardships of a trip to Mysterious Canyon, some fifty miles west of Grand Gulch and south of Navajo Mountain, he sent only Orian Buck and Charlie Mason accompanied by George Bowles. These three departed with the strongest of the horses. With the rest of the party he returned to Bluff City and rested there for a few days while outfitting the next stage of the expedition.

Then with ten pack animals and enough supplies to last a month, Clate Wetherill, with William Henderson and Jim Ethridge, started for Moqui Canyon, due west of Grand Gulch and emptying into the Colorado River above Hall's Ferry. Clate's task was to explore the large caves there for Basket Maker material. He found the caves without trouble and in them many of the now familiar and oddly-shaped cysts, but others had come before him and the cysts were empty.

In the meantime, Richard left Marietta with his friends the Allens, in Bluff City, and with the remainder of the party headed down the Chinle Wash toward Marsh Pass, stopping on the way to dig once more in the large ruin now called Poncho House. In Marsh Pass, according to plan, his group would be met in several weeks by the two parties working in the other canyon(McNitt 1957a:160).

It is likely that the Mysterious Canyon and Moqui Canyon groups left Grand Gulch via Collins Canyon or out the trail at Cow Tanks Canyon. The Moqui Canyon group crossed the San Juan River near Paiute Farms. Richard's group returned via Kane Gulch or the old trail out of Graham Canyon.

Expedition Members and Destinations after Grand Gulch

Moki [sic] Canon
- Clayton Wetherill
- W. H. Henderson
- James Ethridge

Mysterious Canon
- Orian Buck
- Charles Mason
- George Bowles

Marsh Pass
- Richard Wetherill
- Teddy Whitmore
- Others?

Camp Locations

Camp 1—Wetherill Cave at the Junction of Kane Gulch and Grand Gulch

Camp 2—Split Level Ruin (or Salt Cave)

Camp 3—The Thumb near Rope Ruin below Coyote Canyon

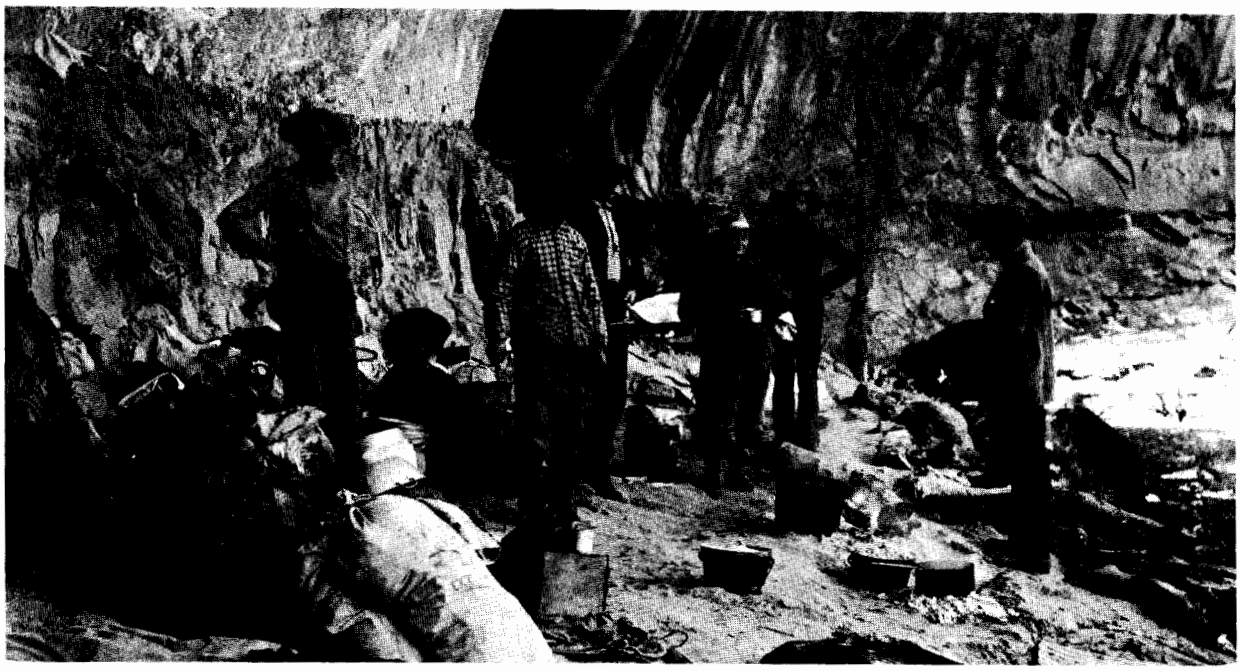


Figure 4.19 Whitmore Exploring Expedition at Camp 4, Grand Gulch, 1897. Left to right: Orian Buck, James Ethridge (sitting), George Hairgrove, Levi Carson, Marietta Palmer Wetherill, Teddy Whitmore, Charlie Mason (washing face), Hal Heaton and dog (Neg. No. 338269, Courtesy Department of Library Services, American Museum of Natural History)

Camp 3 was on bare rock in Rincon on which there was a large circular pinnacle of Sandstone about the base of which are small detached room of Cliff Dwellings. This in the previous expedition was almost directly under what was numbered Cave 18. And in the same Rin Con in which the house was situated that was so difficult of access. From here Cave 11 was worked. (Anonymous ndd:Camp 3)

A photograph was found at the University of Pennsylvania, and a print of the same photograph at the Museum of New Mexico archives, showing the Wetherill party attempting to reach the ruin "that was so difficult of access." This ruin is located in the rincon behind the pinnacle now known as the Thumb. Historic trash, including datable soldered-sealed tin cans have been found (and left in situ) at this camp location, under a mushroom rock at the downstream end of the same rincon.

While camped here it stormed almost continually—making it impossible for us to secure the negatives or make exposures that should have been done. Our time being limited, we had to push the work early and late. (Anonymous ndd:Camp 3)

Camp 4—Small alcove on the northwest below the junction of Grand Gulch and Bullet Canyon. This site originally contained the remnants of an apple box and a large "W" initial. The box was mentioned by Cartier in 1920 and was still there as late as 1976 when it was burned by backpackers. Granaries at the mouth of Bullet Canyon were used by Wetherill on this expedition in an attempt to develop glass negatives. It was at this camp that we have verified that the photograph of Marietta with other members of the expedition was taken (Figure 4.19).

> One night it snowed softly for several hours and with it there was something that Marietta always remembered as a part of her honeymoon. By her side in

the darkness she felt him stir and then sit up. "It's snowing," Richard said. Marietta mumbled a few syllables and shrugged deeper into the blankets. Maybe if it snowed hard enough they wouldn't have to get up so early in the morning. "Those mummies," Richard said. This made little sense to his bride but she sighed agreeably. "They'll get wet," said her husband. And suddenly he was out of their bed and Marietta was asleep again. "They're all here. Where would you like them- at the head of the bed or at the foot?...At the foot, Mr. Wetherill. At the foot of the bed"(McNitt 1957a:157–158).

Since Wetherill did not excavate any mummies until shortly before this camp was located, it is likely that this quote refers to Camp 4.

Camp 5—Grand Island or Polly's Island, in an alcove located within the rincon.

Camp 5 was made in a small cave at the south side of Grand Island, 14 miles below camp 4... From this camp parties were sent out in every direction to hunt up fresh digging. With instruction to bring in everything found stating where it came from. The top of the island was also explored, many small things were picked up. The result of the time spent in this vicinity proved that the work had been very complete previously, since Mcleod [sic] *and Graham spent two seasons there.* (Anonymous ndd:Camp 5)

Marietta made a reference in the artifact journal from this expedition concerning what is now known as Wrong-Side Ruin which serves as a point of reference for locating caves below Polly's Island.

Camp 6—Bannister Ruin

Camp #6, five miles down the Canon from Grand Island, on the Ute west side of the Canon 20 feet above the bottom. This cave had a tier of rooms on a ledge above with and other rooms below. We did no work here. The cave tallies with the Cave Number 24 in the 1893–94 work. Very little work was done from this camp. Cave 25 was visited again with little result. The result of the time spent in this vicinity proved that the previous work had been very complete—since Mcleod and Graham had spent two seasons there... Yet the regions about the heads of the canyons contain fine Parks (natural) with Ruins of good size upon the intervening Ridges—All worked. (Anonymous ndd:Camp 6)

Inscriptions are lacking at Bannister Ruin; however, historic artifacts such as tin pans and old bullet casings were found (and left) here in 1976. Either the stone here has faded or inscriptions are in the second story.

<u>Alcoves Excavated in 1897</u>

(Cave's Historic Number—Description)

Cave 1—Wetherill Cave [John Wetherill inscription] at the Junction of Kane Gulch and Grand Gulch

Cave 1 At upper forks of Grand Gulch: Cave is 200' long 40' high and 50' deep. About the center of the cave is a pile of debris and sand in which the work is being done on either side of this pile is a depression 25' square and 3' to 7' deep. Back wall of cave is perpendicular. (Anonymous ndb:1)

Cave 2—Junction Ruin

50 or 60 feet above this cliff house in cleft running nearly the full length of the cave was another cliff house or a part of the lower one. This we could in no way get to with means at our command. (Anonymous ndd:Cave 2)

Cave 2 is 132 paces long 50' deep with an overhanging cliff at 400'. Cave contains Cliff Houses. (Anonymous ndb:3)

The cave is situated in the main Grand Gulch about 200 yds. above Cave 1. It opens to the Southeast (Anonymous ndd:Cave 2).

Two catalogs of drawings and descriptions exist from 1897. One is probably Marietta's and the second appears to be Richard Wetherill's.

Cave 3—Small cave opening to the Southeast between

Turkey Pen Ruin and Junction Ruin, in Grand Gulch.

Cave 3 is down the Canon about 4 miles from Camp and Cave No. 1. This cave had been pretty thoroughly worked during previous expeditions. It being a regular cave of the Basket Makers, it was considered worth while to go over it again to pick up anything previously overlooked. Of course nothing was in situ as originally. But as no one else had disturbed the place since 1894 it was worth the while... This is the same cave worked in 1894 and numbered (21) Twenty-one, in which headless bodies were found also head with Atlatl point in it. It might even be worth while to go into this cave and remove all the dirt, wheel it outside and remove some of the rocks in the north end, as there is a chance of Early burials being covered with them. The pictographs also may be on the under side of these rocks. (Anonymous ndd:Cave 3)

This cave suffered a large rock fall in 1976 making it nearly impossible to view any early expedition evidence.

Where Mr. Hyde found Headless Body (Anonymous ndd:Cave 3)

Cave 3 is 250' long 75' deep 8' high and is filled with large rock and digging in North end is impossible. In the south end are pot holes dug down in the sand from 1' to 6' deep and 1' to 3' wide. (Anonymous ndb:12)

Cave 4—Turkey Pen Cave

Cave 4 is 700' long 150' high 100' deep Large rock in front in North End. Small fallen cliff houses along the wall in South End. Burial pot holes in South End. Cliff house in cliff 20' above lower cave in north end Pot holes had all been worked also the estufa. (Anonymous ndb:13)

Cliff house in Cliff 20 feet above lower cave in North end Pot Holes had all been worked. As also estufa. The debris seemed to be to much for us in the limited time we had. Also the fill in it was composed almost entirely of desiccated Turkey Droppings. We dug into them to a depth of 7 feet. (Anonymous ndd:Cave 4)

The earlier excavations in the "estufa" recognized by the 1897 party had been likely done by Charles McLoyd and the Green Party in 1891.

Cave 5—"Goat on the Bicycle" Site

Cliff Houses along the wall of Northside of Grand Gulch (Anonymous ndb:19)

Cave no. 5 is a short way down the canon on the same side as No. 6. Very little was done here consequently notes are meager. It is about 200 feet and 40 feet deep with a dozen detached rooms counting the small plaza and estufa. (Anonymous ndc: Cave 5)

Maps have been matched by the Wetherill–Grand Gulch Research Project.

Cave 6—Split Level Ruin 6

Cave # 6 is about 5 miles down the Canon from Cave 1. It is an immense ampitheatre about 1000 feet in diameter. In this 2/3 of a circle the cliff is perhaps 500 feet high and overhangs one hundred and fifty... The upper cliff house was reached by trail marked on plan—very difficult unless one had steady nerves since the ledge at one point is but a few inches wide along which we had to creep. A misstep would land one in the bottom of the canyon 80 feet away. This cave was thoroughly worked, could get no photos. (Anonymous ndd:Cave 6).

Cave 6 is 1256' deep 500' high 150' deep and faces the South. Cave wall slants to the South. Small caves and cliff houses in West end. Larger Rocks in front and center of cave. Cliff Houses in cave on ledge 50' higher than lower level. (Anonymous ndb:22)

Inscriptions of James Etheridge [sic] and C.C. Mason are located at the end of the narrow passageway. Many other inscription remnants are present in this alcove, including those believed to be of Richard and Marietta.

Cave 7—Unnamed small alcove between Split Level Ruin and the location of Cave 10

Cave 7 is in a Large Bend of Canyon and in the bend are a few fallen cliff houses and debris pile which is in center of bend of canyon or cave. Cave no. 7 is in a bend of the canon containing small cliff house with only 6 inches of debris scattered about. A party having an abundance of time might gather considerable material by removing all loose debris. (Anonymous ndb:35)

Wetherill–Grand Gulch project members found Cave 7 difficult to positively identify. The geographic description and an Ethridge inscription, combined with historic surface artifacts point to the small alcove location.

Cave 8—Lion Tracks Ruin

Cave 8 is 300 feet long 50 feet deep with an overhanging cliff as a roof 300 feet in height. It would be immediately noticed by any one in passing... At the extreme eastern end were Pot holes 15 in number in the lowest part of the Cave which is on a level with the bottom lands on the outside... Painted pictures are here on the cliff in profusion, with others of a later date cut into them, later ones being characteristic Cliff Dweller pictures of mt. sheep, turkeys, snakes etc. and scroll... Here we undertook to change Plates in the holders but could make no room dark enough. Not an exposure was made here unfortunately. It seemed an utter impossibility to get the proper condition. Long focus lens with a good shutter, a wide angle lens, and an Astigmatic will be o.k. with a trip in the summer or fall. (Anonymous ndd:Cave 8)

Cave 8 is in a bend of the canon Cave proper is 300" long 50' deep and 300' high. The walls of the houses have fallen. In cliff above is a series of ruins running along back walls of cliff and twelve feet higher is a fort with look holes covering every point of rock. Upper tier of houses were filled with corn husks and cobs. (Anonymous ndb:36)

Cave 9—Kokopelli and the Dancers Site

Cave 9 is 280' long 26' deep and 30' high opens to the east along the front and in North end are Cliff Houses but badly tumbled down along the cliff from center to South End is rock and sand which are pot holes. (Anonymous ndb: 38)

The site of Kokopelli and the Dancers is the first major alcove below Split Level Ruin. The site is named for the rock art panel depicting a flute player and two dancing figures. It is located on the southern end of the alcove, high on desert patina.

Cave #9. 7 miles down the canon from Camp no. 1 on the West side of the arroyo. The bottom of which is not more than 6 feet above the bottom of the arroya. The mouth or front is so closed with a luxuriant growth of brush that a person passing in the canon 20 yards away would scarcely notice it. It is a cave that seemed... [sentence ends here] (Anonymous ndd:Cave 9)

Richard's most comprehensive and thorough excavation occurred in Cave 9. Many notes and excellent maps were produced by Marietta and perhaps George Bowles. The Wetherill–Grand Gulch project team believes an "MW" carved in mud may have been left by Marietta (Figure 4.20).

Figure 4.20 "MW" inscription at Cave 9 (Photograph by Bruce Hucko)

Cave 10—Red Man Cave

It was numbered on account of its being the only one visited that was so high in the cliffs. It being directly under the Rim Rock 500 feet above the canyon bottom. It was very difficult of access yet was one of the few Natural ways for entering the canyon by a footman. (Anonymous ndd:Cave 10)

Red Man Cave is located between Kokopelli and the Dancers site and Shelf Ruins located high on the west side of the canyon. A footpath also provides a route out here.

Cave 10 is at the head of a small side canyon tributary to Grand Gulch and between Caves 8 & 9 no digging was done of note and four relics were scratched out. (Anonymous ndb: 44)

Cave 11—Green Mask site in Sheiks Canyon

Cave 11 is in a side canyon running into Grand Gulch on the left. It is 200' Long 50' deep and 50' high and opens to the southeast. Center and Southwest end is filled with large rock. In the North East end are the partly fallen walls of two rooms and in front and center of the cave is an estufa. On the walls at the back the cave are many pictographs. The top ones are made in brown and green and those lower down are men, animals and etc. Made in white. Over South West portion of cave is a small cave with one room and red and white pictographs on the walls. (Anonymous ndb:45)

Cave #11. Is in a small side canon draining into the Grand Gulch from the East—about 12 miles below camp #1. The cave is on N or NE side of the canon and opens very little above the bottom of the arroya. (Anonymous ndd:Cave 11)

Cave 12—Cut-in-Two Cave Below Sheik's Canyon

Cave 12 same as #19 in previous expedition. This cave had been worked so thoroughly before not much was to be done this time. It is about 40 feet above an acre or two of fine bottom land. At foot of the cliff in front of cave have been pot holes. We did not measure them but could see burials had been there from the human bones lying about. At the extreme east end of the cave were a number of small rooms of a cliff dwelling which one man worked out in a short time finding only a sandal. The important part of the cave had nothing in it this time. But the front central part had much fallen sandstone in it among which the remains of a child were taken out. Photo shows rocks on either side and very dim outline of remains... This cave is not accessible to every one as poles or ladders have to be climbed to get into it... Water for this place can be had down the canon, or up near Cave 11, which is not very distant. (Anonymous ndd:Cave 12)

1897 Chronology

Richard Wetherill began an intensive exploration of the Southwest after the Hyde Exploring Expedition. His fascination with the country, people, and archaeology merged with an understanding of the landscape. Although Richard was beginning his excavations in Chaco Canyon, New Mexico, his interest and investment in Grand Gulch continued.

June 3, 1895—*The early part of the winter I spent in New Mexico looking for relics. The latter in Utah and all this year in Arizona at the Head of the Rio De Chelle.* (R. Wetherill 1895b)

Richard was excavating in the areas of Tsegi Canyon and Marsh Pass. He had not yet returned to work north of the San Juan River.

July 25, 1895—J. Harry Frome from the University of Pennsylvania visited the Alamo Ranch. (Anonymous ndf:62)

Alessandro Pezzati (personal communication, 1991) at the University of Pennsylvania Museum believes that Frome's trip to the Southwest was unrelated to the accession of the McNeely collection that same year. McNeely had purchased artifacts from Sheik's Canyon in Grand Gulch on an earlier visit.

Figure 4.21 Orian Buck at Sponsell, Colorado, freighting to Chaco Canyon for the Hyde Exploring Expedition in 1896. (Neg. No. 338268, Courtesy Department of Library Services, American Museum of Natural History)

Robert K. McNeeley donated objects collected by the Wetherill Brothers to University of Pennsylvania (accession 12992–13107).

October 1, 1895—*I have made the shipment of pottery to you that I planned... I made the visit to the Moqui villages and saw the snake dance...* (R. Wetherill 1895c)

Further on in the same letter Richard revealed plans to excavate under the guidance of Professor Putnam (see Phillips, this volume).

December 1, 1895—Richard was writing Talbot Hyde from Albuquerque continuing his extensive tour of the ruins of the Southwest:

I have the opportunity to visit the ruins of New Mexico. Those of Chaco Canyon being the greatest in New Mexico and almost unknown. Everyone so far having tried to get relics there making a total failure of it... Just as soon as I can write it out I will send your map and description of the different regions in which it will pay to work... The collection for you is still at the ranch and will not be shipped until my return. (R. Wetherill 1895d)

Richard displayed artifacts at the Alamo Ranch Museum, where they were viewed by visitors to the cliff dwellings.

January 6, 1896—Richard wrote Talbot Hyde from Thatcher, Arizona, and described various ruins in Arizona and New Mexico (near Fort Grant) that he had or planned to visit:

You already know what it takes to go to Grand Gulch and vicinity... P.S. I wish also to say that Yellow Jacket Springs and Goodman Point are great ruins one days drive with wagon from our place... One other place such pottery is found is on the lower Animas in N.M. (R. Wetherill 1896a)

July 25, 1896—Al Wetherill left an inscription near Charles Lang's Battle Cave in Allen Canyon.

August 10, 1896—Dr. T. Mitchell Prudden visited the Alamo Ranch. (Anonymous ndf:64)

Both the inscription left by Al on July 25, 1896, and the Prudden ledger signature are likely related to the visit during which Prudden collected data for the "Elder Brother to the Cliff Dweller" publication.

October 23, 1896—Richard wrote Talbot Hyde from Mancos, Colorado:

Should an opportunity present itself I should advise disposing of this wagon for about $75.00 and replace it with a new one next spring, then we will have no bills for repairs. This one looks first rate yet but it is worn a good deal on the thimbles and boxes... Mr. Buck has proven to be all and more than I expected and is worth more money than he has gotten this season and should you continue the work an advance of $5.00 per month would be fair. (R. Wetherill 1896b)

Orian Buck proved to be a valuable member of the 1897 Grand Gulch expedition (Figure 4.21). A mummy was excavated on this expedition that was named "The mummy Joe Buck" and photographed (now part of the Heye Foundation collections). Marietta commented:

> They called the mummy Joe Buck after one of the fellows on the trip. I don't know who did it but the boys all blamed me when (Orian or Oscar?) Buck got mad every time anybody would say that mummy looked like him (Gabriel 1992:66–67).

Perhaps this mummy was long and lanky like Orian Buck and wrapped in a blanket reminiscent of Orian in his bedroll.

October 31, 1896—*Today I learned that the Field Columbian Museum of Chicago intends putting an expedition in the field this winter to work in Grand Gulch and Southern Utah... The prof. (Putnam) suggested you might carry on the work in that way. We would not start out before the first of January in any event... If I succeed in doing work for the Academy of Sciences of San Francisco I can almost live at home since there is good work to be done in the vicinity of the ranch... C.B. Lang who worked for us before had gotten this up.* (R. Wetherill 1896c)

Yours recd. today. I should be glad to give you all possible assistance in regards to the Basket people. I can send you a copy of plans and notes made while in the Field which will help some and Photographs. My position is such that I can do this since I would not go into the field for Mr. Hyde without his giving me a copy of notes and photos... I understand that the Columbian Museum intends putting some part to work there. (Grand Gulch) If that is the case I shall have to forestall them and put my own outfit there first. I would have liked Mr. Hyde to have completed this work but he is slow about things of that kind. I have not written him yet in regard to it. But have thought it not much use since he has all the confidence in the world in the Museum representative as he wished to go home, this work can wait, he thinks but others do not is where the trouble lies... I will leave in a few days for San Francisco for... [sentence ends here] (R. Wetherill 1896d)

Richard realized that interest in Southwestern artifacts was building. More people had become interested after the Chicago World's Fair. Collections were being assembled by numerous institutions and individuals. His concern may well have been to complete a more thorough job of his earlier work in Grand Gulch.

November 15, 1896—Richard refers to the discoveries of Cave 7 as well as other locales in a letter to T. Mitchell Prudden explaining the Basketmaker artifacts recovered in 1893:

Ninety seven skeletons were taken from the cave. Many of the men showed evidence of having been killed as spear points were found between the ribs and arrow points in the back bones. One case where the hip bones were pinned together with a huge obsidian spear point shows no small amount of force was used to bury a point of that size in two inches of bone—crushed heads were quite common—one case the face was mashed in and the skull

contained an Atlatl point that had been fired in under the chin or below as the point sticks out of the top of the head—The mummy cut-in-two which was sewed together with human hair string. After this had gotten to the museum an Atlatl point feel out of it...

The Basket People, as we call them, seem to be confined to a very small area. How far west they may extend we do not know. But the Cottonwood seems to be the eastern limit and the Elk Mt. the northern. Canyon de Chelle at the mouth is the southern on this side of the Colorado. What may be of the kind on the other side I do not know.

The first cave in which these remains were found was in the Cottonwood. A cliff house was there and had previously been explored. By digging through about two feet of Cliff Dweller debris we came upon a layer of sand about two feet in thickness.

Sometime in the future I hope to do something in the way of putting my work in book form. But first I must be educated. This is rather a slow process. (R. Wetherill 1896e)

See also the original Cave 7 descriptions from the December 1893 Hyde Exploring Expedition field catalog as well as Hurst and Turner in this volume.

November 25, 1896—*It is not the Field Columbian putting the expedition on the field but private parties. I think they can be turned from that region into Arizona without much difficulty.* (R. Wetherill 1896f)

December 8, 1896—Richard Wetherill married Marietta Palmer.

December 14, 1896—C.E. Whitmore had a charge account at the Alamo Ranch. Entries were being made into the ledger (Anonymous ndf:151). C.E. Whitmore financed the 1897 expedition which may have been referred to as the Whitmore Exploring Expedition. W.E.E. inscriptions at Split Level Ruin and also at Polly's Island were found near the inscriptions of several members of this expedition. The W.E.E. would also have been in character with the 1893–94 H.E.E. abbreviation used by Richard.

December 24, 1896—A $10.00 check was written to C.E. Whitmore from B.K. Wetherill (First National Bank of Durango 1896:556).

December 1896—James Ethridge inscribed his name at Split Level Ruin. This date seems early compared to the rest of the expedition inscription. Perhaps Ethridge was sent ahead to scout.

January 13, 1897—C.E. Whitmore paid boarding charges at the Alamo Ranch (Anonymous ndf:151), reflecting departure for Utah.

January 16, 1897—James Ethridge inscribed his name in Turkey Pen Ruin of Grand Gulch.

February 6, 1897—James Ethridge inscribed his name at Lion Tracks Ruin in Grand Gulch.

Al Wetherill paid O.E. Noland $100.00 (First National Bank of Durango 1897:575). This debit likely refered to the purchase of Navajo rugs for the Hyde brothers by Al Wetherill at Noland Trading Post along the San Juan River.

February 10, 1897—James Ethridge inscribed his name at Cave 7 (1897) in Grand Gulch.

February 11, 1897—James Ethridge inscribed his name near "The Notch" separating Grand Gulch from Shiek's Canyon.

February 15, 1897—James Ethridge inscribed his name at Cave 10 between the sites of Kokopelli and the Dancers and Split Level Ruin in Grand Gulch.

Mr. Whitmore is putting up the money and carrying on the work first, to keep a ward that he has with him occupied and next with the idea of getting his money back at some time in the future. He is to have one half of all returns after the collection is disposed of, he is putting up about eighteen hundred dollars ($1800), for

the three months we are out. Prof. Putnam did a bad piece of work for me, but it is all o.k. now...

Dr. Prudden is getting out something on his last summers trip, and 1896 travels through this canyon... (R. Wetherill 1897a)

T. Mitchell Prudden's visit to Grand Gulch was the first of his many expeditions to southeastern Utah. Photographs indicate that he traveled much of Cottonwood Wash and Grand Gulch following routes and excavations of the H.E.E. 1893–94 expedition. He was to write the article "Elder Brother to the Cliff Dweller" as a result.

Not much material of the Basketmaker has been found yet. Our next move will take us to their burial places... We hope soon to cross the San Juan and visit Mysterious Canyon in which are many great ruins... My wife is in the party doing the work Pepper did last summer... We will return to Mancos the latter part of April... The sweaters came in with the mail. Thank you very much; they are nice ones. I presume you meant one for Buck or Clate, but did not know... (R. Wetherill 1897a)

February 19, 1897–James Ethridge inscribed his name at Cave 12 (Cut-in-Two Cave) within Grand Gulch. The expedition party concurrently camps near "The Thumb" located between Coyote Canyon and Sheik's Canyon (Camp 3).

February 23, 1897—James Ethridge inscribed his name at Burial Cave #2 in Bullet (Graham) Canyon in Grand Gulch.

February 25, 1897—James Ethridge inscribed his name and date near the rock art panel of Kokopelli and the Mountain Sheep site near Polly's Island.

Ethridge again inscribed his name and date along with "W.E.E.," "C.C. Mason 97," "Buck 97," and "Wetherill" at a site in an east-running canyon downstream and directly east of Kokopelli and the Mountain Sheep rock art panel.

These inscriptions are the last found from the Whitmore Exploring Expedition in Grand Gulch. James Ethridge was the only member of the party that left his name and full date during the 1897 expedition. Without this evidence, re-establishing cave locations would have been next to impossible. The earlier December dates surely must reflect his advance scouting for unexcavated sites. Slightly over a month was spent in Grand Gulch before heading south of the San Juan River.

Letters and other information between February 25 and May 7 are totally absent. This lack of information is suspect. Jonathan Haas (personal communication, 1990), suspects a large collection exists from the Tsegi Wash area, but no record of the dispersal of that collection has been found. This gap is inconsistent with Richard Wetherill's correspondence style and his thorough documentation.

May 7, 1897—We have been outfitting and waiting for the last eight days, subject to your orders. Pepper was telegraphed that we would be ready... The expedition we have just returned from has been a great success. [Success must have been south of the San Juan, certainly not in Grand Gulch.]... *but the Cliff Dweller material is practically exhausted as well as the Basketmaker in that region...* (R. Wetherill 1897b)

Richard was likely preparing for a return trip to Chaco Canyon and the continuance of the Hyde Exploring Expedition as was indicated by the reference to Pepper.

May 17, 1897—*This expedition has been a successful one and contains material that I don't believe can ever be found again. We did not succeed in finding any more of the Basketmakers Caves South of the San Juan or about Navajo Mt. the home of the Pah Utes. But we found a very interesting region for a desert country. Laguna Creek with two fine lakes and a fine Cliff House of 122 rooms which was rich in Relics and the west Canon which drains all the Country south of Navajo Mountain. Few Cliff houses or ruins were here*

but some fine Navajo farms with good water. On the High mesa East and north of Navajo Mt. are ruins similar to those in Chaco, New Mexico... Enclosed find Cass Hite's direction to Mysterious Canon which we failed to get to on account of lack of time. I should like to go there this summer if time can be found. But there is but certain ways to get into that region and quite difficult. (R. Wetherill 1897c)

Cass Hite was a friend to the Navajo. His Navajo name was Pishlaki, obtained when he prospected for silver. He established the ferry crossing along the Colorado River near the present day marina of Hite at Lake Powell.

Ocotober 24, 1897—*We left Mancos on the 13th of May for the Chaco... Buck made seven trips of two weeks each on an average... All work in Arizona in ruins is prohibited. New Mexico is waking up to that point also. I must get the collection off my hand very soon. I will ship it to you for your inspection if you will take care of it for me provided you do not want it.* (R. Wetherill 1897d)

Does this refer to the Tsegi collections? If so, the reference to Arizona work being prohibited may have contributed to the lack of thorough documentation and the unknown location of the collections today.

December 23, 1897—During the summer Clate and Al made a trip with Dr. Prudden taking mules along with them, one of which died... Mr. Whitmore and Mr. Bowles both wrote me that they had become involved in some serious trouble whereby a little ready money would relieve them... They decided to sacrifice the collection if they could and are now willing to take $1500, for their share, of course that means cash, but $1250 is an enormous loss, it seems to me. That means $4250 for the collection on the $2750 time can be had, as I proposed to you. (R. Wetherill 1897e)

The size and cost of this collection suggests a great number of artifacts. Once again, this suggests the majority of these artifacts may have been acquired during the second half of the W.E.E. south of the San Juan in Arizona.

January 23, 1898—*I have been considering the matter and feel very much as you do that this ought to go with the other collection... so will complete photos and ship at once by express... I have a good deal of Basket material purchased from parties at Bluff. You may remember part of it from the Cliff house in Grand Gulch where the mummy hung up in the sack.* (R. Wetherill 1898a)

January 24, 1898—*This is the small material, I hope to ship the Princess tomorrow.* (R. Wetherill, 1898b)

The Princess and the Companion to the Princess were two well-adorned mummies discovered by Wetherill's party at the Green Mask site in Sheik's Canyon in Grand Gulch, during the 1897 trip.

On the cliff. 7 feet above mummie 488 and 489 were three pictures in white with red nipples. Those pictures are of large size being 3 feet long at least. Higher up on top, centre (sic),, *sand had blown in filling up enough for potholes which we dug put in 1894 except a small space behind a fallen rock. This we came very near to previously (in 1894). See description mummy 488 and 489.* (Anonymous ndd:Cave 11)

Marietta Wetherill described the discovery of "The Princess" in an oral interview with Lou Blachly of the Pioneers Foundation:

> Here was the main cliff and here was this rock laying here and Mr. Wetherill walked and looked in there behind that. He says, "You're not in a hurry to go home, are you?" And he dug around there for a few minutes and he called me and he says, "I found something." And I went there and he was down on his knees with his brush. After he'd find any evidence of human habitation, why then the shovel was taboo. Well, he brushed there for quite awhile and I helped him. And we uncovered this beautiful basket shaped like an oval *(Figure 4.22)*. Well, under the basket was another basket laying over a human... we could see that there

Figure 4.22 In situ basket of "The Princess" from the Green Mask site, Sheiks Canyon, Grand Gulch, during the 1897 Whitmore Exploring Expedition (Neg. No. 338267, Courtesy Department of Library Services, American Museum of Natural History)

> was a mummy and over the face of that mummy was another basket. And on that mummy there was first a turkey feather blanket with big spots of bluebird feathers on it and then under that was another feather blanket with yellow bird feathers on it, wild canaries. I couldn't believe she was dead. And her face was painted red and her body was painted yellow and her hair was combed nicely down and she had on some little shells... And we got back late for supper and the cook was madder than Hades (Niederman 1990: 80, 81).

January 27, 1898—*Have shipped box containing Princess and all her belongings just as we found her.* (R. Wetherill 1898c)

February 16, 1898—*What negatives we had were shipped. Unfortunately several were broken so that I could not save them. The notes and plans will be forwarded next week... P.S. Relics are in 10 boxes and barrels. Negatives in one small tea box. Will mail notes today, Feb. 21.* (R. Wetherill 1898d)

This entry concludes the dated material concerning the 1897 Whitmore Exploring Expedition trip to Grand Gulch. Richard Wetherill and his brothers continued their exploration of the Southwest, as may be evidenced by an 1898 Wetherill inscription found in Mummy Cave, Canon Del Muerto. This inscription was placed when Al and Clayton Wetherill were guiding T. Mitchell Prudden in July of 1898 (Prudden WGG Archives 6: 27: 9: 37) (Prudden nda).

Figure 5.0 This assemblage of artifacts accompanied the burial of a Basketmaker child. Removed by the Hyde Exploring Expedition in 1893–94, from Cave 12 (Cut-in-Two Cave) in Grand Bulch, the artifacts are now at the American Museum of Natural History in New York. Artifacts (clockwise from top left) include: a coiled basket filled with pinyon nuts, parched and popped corn and squash seeds (H-13133); tanned mountain sheep skin (H-13560); small basket (H-13506); flat, large-coiled basket (H-13961); Large unfinished apocynum fiber bag filled with cornmeal (H-13476); bone needles woven together (H-13134) in basket (H-13961); faded apocynum fiber bag (H-13371); polished mountain sheep horn fragment (H-13149); small apocynum fiber bag (H-13411) containing chipped stone flakes (H-14007) and yellow ochre (H-14010).

Archaeological Expeditions into Southeastern Utah and Southwestern Colorado between 1888–1898 and the Dispersal of the Collections

Ann Phillips

Introduction

The source and fate of artifacts from the Colorado Plateau have mystified historians and archaeologists for the last hundred years. Few historical situations offer a greater challenge than unravelling the tangle of expeditions into this region between 1888 and 1898. Artifacts were sold off indiscriminately by the early cowboys, miners, and entrepreneurs who were part of the frantic race to locate and excavate Anasazi relics. Records were generally poorly kept, if at all, and frequently were lost. Confusion has been compounded by historians and others who relied on memories faded after many years.

Benny Talbot Babbitt Hyde (B. T. B. Hyde), responsible for placing several collections from these early expeditions in museums, years later confused the locations of the first and second Wetherill collections. He wrote to the Colorado Historical Society twenty-five years after financing several expeditions: "I am about to make a special study of the Wetherill Cliff Dweller Collections deposited by my brother and myself in the American Museum of Natural History, New York City. If I am right the very first material [second collection, not the first] taken by the Wetherills was exhibited at the Chicago World's Fair and formed the basis of the collection sold to the State of Colorado" (B.T.B. Hyde 1918:1–2). Hyde was confused; yet it has only been within recent years that the locations of the first two Wetherill collections have been determined (Sharrock 1964; Kane 1985). The Lang, Green, and Moorehead Collections, also forgotten or misplaced, have been "rediscovered" by the Wetherill–Grand Gulch Project team and examined for the first time. The team has also identified locations of excavations and a number of specific artifacts, obscure and forgotten for almost 100 years.

The research by the Wetherill–Grand Gulch Research Project team has focused on reconstructing these years of history on the Colorado Plateau and analyzing the shifting and changing monetary, humanistic, and scientific values placed on these collections by the individuals who excavated them, and by the museums that have retained these collections for nearly 100 years. Even after examining the way collections were made and maintained, relying on as much primary material and as many sources as possible, the archaeological history about this time and place is frustratingly incomplete. Many mysteries are still unsolved.

"Ancient Aztec Relics"

After Al Wetherill discovered Cliff Palace in Mesa Verde in 1887, he and Wetherill family members made many trips into the area. In an attempt to accurately record the subsequent events of the Wetherill family in Mesa Verde between 1888 and 1898, C. C. Mason, on behalf of the Wetherill family, wrote a letter in 1918 which documents the early expeditions.

In December 1888, Richard Wetherill and Charles C. Mason were returning from the canyons of the Mesa Verde:

> "...on our way home [from discovering Spruce Tree House and what we call Square Tower House] we came across the camp of some old friends, Charles McLoyd, Howard Graham and L. C. Patrick. They were much interested in what we had discovered, and decided to go to the big house and try to make a collection of relics. John Wetherill went with them. As it was a long way around to get there with horses, they took just what camp outfit they could carry and made their way up the canyon as best they could. They only had provisions for three or four days, but before this was gone they had found as much stuff as they could carry out. Many of the rooms had only a few inches of rubbish in them, and it appeared as though the inhabitants had left everything they possessed right where they used it last (Mason 1918: 2-3).

As a result of several trips into the Mesa Verde area (B. K. Wetherill 1890), this group of artifacts was sorted and combined into a collection called, "Ancient Aztec Relics," believed to have come almost exclusively from Cliff Palace (Nordenskiold 1891:11). About 410 entries in the catalog were organized by artifact categories, from A to J depending on the type of material: A, Human Remains; B, Pottery; C, Baskets, basket lids, etc. Except for the "A" Category, we have no record or description of the original location of these artifacts. The "A" category, however, notes where each human remain was found. For example, "A-4, Skull found in left fork of Cliff Canyon and in largest Cliff House found. This house has 112 rooms on the ground floor, and about 300 rooms in all, was called by the party 'Cliff Palace.' With this skull was found No. 10 of Group B" (McLoyd et al. 1889:1). Group B, Number 10 is described as "an elaborately painted bowl" (McLoyd et al. 1889:2). In addition, "signatures" of some members of the excavating parties have been located in southwestern Colorado and southeastern Utah along the canyon walls in alcoves where artifacts were found, thereby helping to document the sites. Sometimes signatures included dates, perhaps marking where participants had successfully found artifacts or as recognition that they had reached some precarious niches in sheer walls hundreds of feet above the canyon floor.

The Wetherill–Grand Gulch Project members, particularly Fred Blackburn, have located over five hundred signatures, using these to assist in documenting excavation sites and in tracing expedition routes (Wetherill–Grand Gulch Project, Signature Documentation 1986–1990; see Blackburn and Atkins this volume). While many of these signatures are in excellent condition after a hundred years, others are barely readable. Many more, we suspect, have eroded completely or have been rubbed out by later visitors to the canyons.

In May 1889, Charles McLoyd took the "Ancient Aztec Relics" Collection first to Durango and then to Denver where it was placed on exhibit. The Colorado Historical Society purchased this "First Wetherill Collection" for $3,000 "to prevent its removal from the State" (Hafen 1953:176). This purchase established a precedent: there definitely was an interest in ancient Anasazi relics, and collections potentially were very valuable.

Green Collection

The Wetherill family continued to focus their digging in the Mesa Verde area. Meanwhile Charles McLoyd and the Graham family shifted their exploration for Indian relics to southeastern Utah. Between January 1 and April 7, 1891, McLoyd, along with Charles C. Graham (Howard's brother) and Graham's father, visited Grand Gulch. C. C. Graham kept a day-by-day account of where they were excavating in the Gulch and what artifacts they had accumulated (Daniels 1976:10). On the last day of each month they

counted their treasures, categorizing them all according to materials. If an artifact was particularly unique, or if it was excavated in a noteworthy place, it received a few extra descriptive words, but in general the items were simply listed.

The Reverend Charles Henry Green purchased this McLoyd and Graham Collection for $3,000 sometime in the spring of 1891, believing that this was "the most thorough and extensive as well as most daring exploration that had ever been made... American history will soon have to be rewritten" (Green 1892:18, 20).

Based on a number of photographs (Field Museum of Natural History, Photographic Collection) and on Green's signature found on "Quail Panel" in Grand Gulch , it appears that Green accompanied Charles McLoyd and other Durango residents into Grand Gulch in the summer of 1891 to photograph sites and to supplement the collection he had purchased earlier in the year (see Hayes this volume). A catalog, either compiled by Mcloyd and Graham before selling the collection to C. H. Green, or first published by C. H. Green, accompanied the collection, first to Manitou Springs and eventually on to Chicago (Green 1892). McLoyd and Graham's names are not mentioned in the catalog, perhaps adding to the subsequent confusion about the location of this collection. Green may have wished to take full credit for the collection.

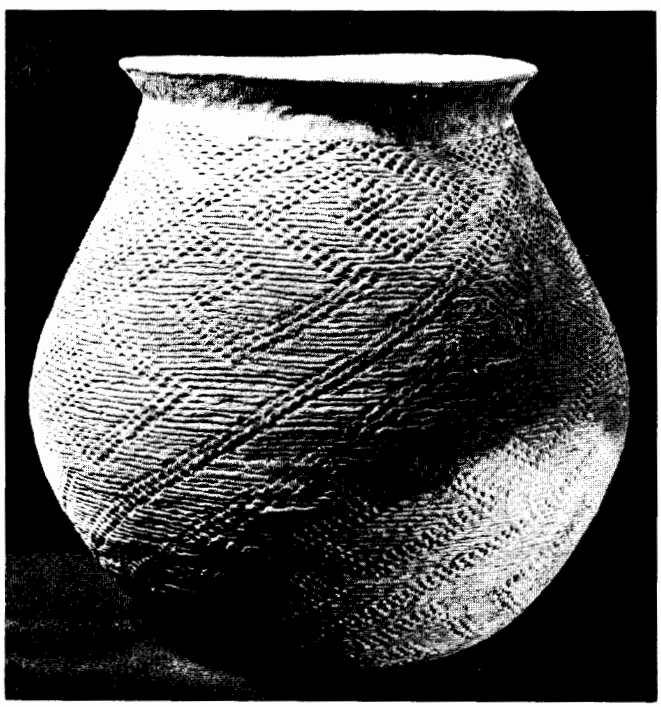


Figure 5.1 Large coiled pot located at the Field Museum by Wetherill–Grand Gulch team members and described in the McLoyd and Graham Green Collection catalog. Field Museum Accession #121, no. 21384 (Photograph by Bruce Hucko)

The catalog entitled "A Unique Collection of Cliff Dweller Relics" was organized in much the same fashion as "Ancient Aztec Relics," listing each artifact by material. Each artifact was given a catalog number. Since little or no provenience information is given in the catalog for individual articles, one would suspect that the collection was reassembled after it was removed from the canyon with the benefit of only the briefest of field notes. Catalog entries such as "F-16: 200 sandals" (Green 1892:13) provides the only information on these items, making it impossible without additional information to trace them back to their place of origin.

The Wetherill–Grand Gulch research team has been able to correlate C. C. Graham's journal information with geographical information in Grand Gulch and to trace McLoyd and Graham's journey up and down Grand Gulch, identifying places they described: places where they left their signatures, and places where they excavated. Using this information, it has been possible for the team to correlate excavations made on several specific days in Graham's journal with specific items described in the catalog (Wetherill–Grand Gulch Project, Green, McLoyd and Graham Photograph Collection Index 1990–92:1–14). For example, B-6 in the catalog is described

as a "large coil vase, geometrical design. Found in Cliff House in Graham's Canyon 3 mi. below where the trail enters. Vase full of shelled corn. Cliff House No. 33 has three circular signs painted above it" (Green 1892:7). This particular vase is illustrated in the catalog; it matches the entry in Graham's journal for January 12, 1891: "In the afternoon worked in house no 2, Graham C. got two coil jars, one of them with designs, 2 bone drawing knives, 1 wooden knife, 1 wooden dipper, the large coil jar was full of shelled corn in perfect condition" (Daniels 1976:10). Graham Canyon is now called Bullet Canyon, and the cliff house with "three circular signs painted above it" is easily recognized as Jail House Ruin. A McLoyd signature is still readable there.

In the fall of 1988 when several Wetherill–Grand Gulch team members recognized a beautiful and elegant coiled vase stored at the Field Museum (Figure 5.1) as the same one illustrated in Green's catalog and described in Graham's journal, the mystery of the location of Green's collection and also the McLoyd and Graham Collection was finally resolved. Despite literature stating otherwise, the collection was indeed in Chicago.

Confusion by archaeologists (Sharrrock 1964) about the McLoyd and Graham (Green) Collection and where it had been kept for a hundred years arose partially because of an outline about the history of Grand Gulch by N. C. Nelson (Nelson 1920b) based on information from B. T. B. Hyde. Although Hyde had seen this collection at the Field Museum (B.T.B. Hyde 1918), he apparently either did not realize that the Green Collection had in fact been collected by McLoyd and Graham or he may have inadvertently stated or implied to Nelson that the Green Collection was located with the Hazzard Collection at the University Museum, University of Pennsylvania.

Kunz or Koontz Collection

Even though no field notes have been located, McLoyd and Graham signatures with 1892 dates in Grand Gulch and other canyons verify another expedition into Grand Gulch and also into Lake, Red, and White Canyons and to the Canyon of the Colorado River (see Blackburn and Atkins this volume). A catalog entitled "Catalogue and Description of a Very Large Collection of Prehistoric Relics" (Anonymous nde) probably written by McLoyd, is organized in the same manner with similar detail as the "Green" catalog. Because of the date, 1894, printed on the inner page of the catalog, one concludes that John R. Koontz, "the man who owned the land on which the Aztec Ruins are located" (Daniels 1976:15), did not purchase the collection immediately. After purchasing it, Koontz later sold this collection to Fred and B. T. B. Hyde, perhaps on a trip the two brothers took to the Southwest in the summer of 1894 (Anonymous ndf). The Hyde brothers gave this collection to the American Museum of Natural History in New York City in 1895 where it was later renamed the "Kunz Collection"; the reason for the spelling change is unknown.

McLoyd and Graham, A Portion of the Hazzard Collection

In his journal, Graham writes about several expeditions, although three collections exist. McLoyd and Graham either made other expeditions into the "Canyons of the Colorado" or one large collection was divided into two parts. The "Hazzard" portion of the collection was accompanied by a typed catalog. The catalog, sparse in detail and organized by material categories, indicates that the artifacts were collected in Lake, Red, Lost and Deep Canyons, and the Canyon of the Colorado. As in the "Kunz" and "Green" catalogs, this catalog also carefully notes what artifacts were found with human remains, and sometimes indicates where these particular artifacts were found (Anonymous ndc). Warren K. Moorehead, leader of the American Illustrated Exploring Expedition, saw this McLoyd and Graham Collection displayed in Durango in 1892, and he was "much impressed." As a suitable culmination of his own expedition, he suggested that his sponsors purchase it for display at the World's Columbian Exposition

(Anonymous 1892:71). His suggestion was ignored. Instead, this fourth McLoyd and Graham Collection was purchased by Mr. C. D. Hazzard of Minneapolis, Minnesota, possibly during a visit to southwestern Colorado in December of 1892, and certainly before the opening of the World's Columbian Exposition in May of 1893 where it was later displayed. This assemblage is now part of the "Hazzard Collection" at the University Museum, University of Pennsylvania.

Wetherill Exploring Party

While McLoyd and Graham focused their collecting in southeastern Utah, the Wetherill family continued exploring the Mesa Verde area. They were recognized by some as "the only people who knew the labyrinths in this region" (Nordenskiold 1891:11). In 1889, four Wetherill brothers and their brother-in-law, Charles C. Mason, known as "The Wetherill Exploring Party," made another collection; "this time we went at it in a more business-like manner. Our previous work had been carried out more to satisfy our own curiosity than for any other purpose, but this time it was a business proposition" (Mason 1918:3). Mason writes extensively about their finds in *The Story of the Discovery and Early Exploration of the Cliff Houses of Mesa Verde.* Sandal House and Johnson and Acowitz Canyons were explored, as well as the reworking of Cliff Palace, Spruce Tree House, and Square Tower House: "We continued in this way until all of the many branches of Navajo Canyon had been explored" (Mason 1918:5).

Two documents exist: a handwritten report describing the work of excavating, as well as the general living conditions within the dwellings, and a set of field notes without field numbers. Although the artifacts listed in the field notes are not recorded by number, the names of the canyons and dwellings where the artifacts were found are recorded, and associated artifacts were listed together. For example, Sandal House: "Mummy of Child, skull broken, wrapped with feather cloth, willow matting outside next to the body was found, ring of flax wrapped with cotton, cloth, two small boards, a round stick, a woven belt or cinch; also a piece of cotton cloth on body of child" (R. Wetherill et al. 1889:3). In a later catalog this description was shortened to "Mummies of children as found in their burial costumes" (Smith 1892:51.

A portion of an undated and unsigned manuscript in the Wetherill family papers indicates that someone in the Wetherill family took this collection first to Pueblo and then to Denver to sell. H. J. Smith met them in Denver, presumably in 1890 (B.A. Wetherill[?] n.d.:1), and took this collection, probably on consignment, to the Sixth Minneapolis Industrial Exposition in 1891. "No sooner had the Sixth Exposition closed, than art director, H. Jay Smith, in the interests of the Seventh Annual Exposition, commenced at once to organize a party for a thorough and systematic search of the Cliff Dwellers Region" (Smith 1892:42). C. D. Hazzard, who purchased this collection, and Alex J. Fournier, "Artist in oils, water colors and pen and ink drawings" (Smith 1892:42), accompanied him. Richard Wetherill wroteGustaf Nordenskiold on April 27: "We have had the art director of the Exposition with us the past two months and he has been taking plans and photographs of Cliff Houses, but has taken no photographs that are as good as Al or John can take, nor has he been doing any excavating" (R. Wetherill 1892:2). Fournier's detailed drawings and measurements eventually provided the material for a highly acclaimed one inch to ten inch exact model of the cliff houses which became the backdrop for Hazzard's extensive collection which was housed at the World's Columbian Exposition in 1893. The collection was displayed at the Fair within the replica of Battle Rock in McElmo Canyon, Colorado, a dramatic, artificial mountain to the north of the Anthropology Building (H.J. Smith 1893:1–5).

Nordenskiold Collection

Baron Gustaf Nordenskiold of Sweden was impressed by the relics displayed and owned by the Wetherill family when he arrived at the Alamo Ranch on July 2, 1891. Nordenskiold enclosed a catalog of relics collected by the Wetherill Exploring Party in a letter home to his family in hopes that money could be raised to purchase the collection. When that idea was vetoed, Nordenskiold wrote: "I am sure that in a month or two I can make a fine collection [myself], which should be extremely valuable. It will cost me about $400, a sum which will be recovered several times over. From my own experience this is not at all impossible" (Nordenskiold 1891:11). Nordenskiold received permission from the Indian Agent at Ft. Lewis, Colorado, to visit the Ute and Navajo reservations to proceed with his work, and "as long as the buildings were not damaged no one would disturb him at his work" (Nordenskiold 1891:21). With the help of four men, Nordenskiold excavated in the Mesa Verde region for about two months. On September 9, 1891, however, he was detained by state authorities for illegally excavating on Ute Indian Land and for attempting to send nine boxes of relics to the Swedish Consulate (Nordenskiold 1891:40). Even though he was acquitted of these charges within a month, and the boxes were sent to Europe, Nordenskiold discontinued excavating and instead spent the next three weeks completing his notes, photographing the ruins carefully, and recording the place, direction, time of day, and the exact exposure of each photograph.

The great value of Nordenskiold's work is his clear, careful, and insightful observations, and his effort to compile all his information, maps, photos, floor plans, artifact illustrations, and descriptions in book form. He stressed the importance of keeping a careful and detailed record of his work; ground plans were prepared for each ruin, and ruins were recorded by name with each room identified. He noted the original location of each artifact as well as its association with other artifacts. Nordenskiold physically identified the ruins themselves by carving an "N" in front of the ruin and then numbering each dwelling in sequence (Nordenskiold 1893).

Richard Wetherill recognized the skill and methodology used in acquiring this excellent collection. After Nordenskiold returned to Sweden, Wetherill wrote to him stating, "As it now stands you have the only collection that has been taken out properly" (R. Wetherill 1892:1). Nordenskiold's collection, however, contains some artifacts that are not associated with a specific site or identified with a specific place within that site, nor did he always make measurements of sites and rooms. Conrad M. Viets, a resident of Cortez, employed by F. W . Putnam to do excavation work for the Peabody Museum at Harvard, wrote on September 7, 1891: "There is a man in this part of the country who styles himself Baron Nordenskiold who is ransacking the cliff houses... Steps should be taken immediately to secure the relics to this country either for your use at the World's Fair or for the Smithsonian Institute, not taken out of the country" (Viets 1891:1).

Willmarth Collection

In 1891, the Colorado State Legislature approved funding for another collection of relics to be exhibited at the Chicago Fair. The collection was made "under the supervision of A. F. Willmarth of Denver with D. W. Ayres of Durango and Richard Wetherill, successively in charge of the fieldwork" (Mason 1918:6). Wetherill wrote to Nordenskiold that "we will not work a great while as the appropriation is very small and you know it requires money to carry the work along properly" (R.Wetherill 1892:1). A description of the cliff dwellings, written in the third person (Willmarth 1893), and a typed catalog accompany this collection. The list of artifacts lacks detailed descriptions, interpretations, or any information about the association of artifacts. Maps and notes of the locations where the artifacts were found might have been kept in the field, or the locations may have been well enough known to the

excavators that some sites were only identified by number, implying the assumption that the locations were obvious. Photographs, however, were taken by Richard Wetherill and are located at the Colorado Historical Society (Willmarth 1892).

Concern for assembling all these collections and taking them out of southwestern Colorado was voiced by B. K. Wetherill, Richard's father. He wrote as early as 1890 to the famed John Wesley Powell, head of the Department of Ethnology in Washington, D.C., with the suggestion of reserving the Mancos and tributary canyons as a National Park, and preserving the ruins and collections of relics in one place rather than having them scattered all over the country. "Since the relics were discovered last year[1889] the country has gained quite a national reputation. My son has guided 52 tourists during the past summer, and we expect hundreds of them next year" (B.K. Wetherill 1890:3). W. K. Moorehead places the responsibility and blame for the destruction of the ruins on a "number of wealthy relic collectors in the East who have been corresponding with traders with a view of securing specimens from the caves and ruins. They do not care to make primitive man a study, but are mere curiosity hunters" (Moorehead 1892g:23). For several reasons, interest in these relics was building, not only from the Southwest but from all over the world. The World's Columbian Exposition added to this interest.

World's Columbian Exposition

The World's Columbian Exposition held in Chicago in 1893 "stamped itself indelibly upon the closing years of the Nineteenth Century, and has left a mark upon our times particularly in matters of taste and refinement" (Higgenbottom 1893:323). Six hundred and thirty acres of land were transformed for the Exposition by Frederick Law Olmsted. "An entire city was constructed; temporary buildings made of 'staff,' a combination of plaster of paris and hemp, changing this barren piece of land next to Lake Michigan into a fairyland, the marvelous "White City" (Dean 1895:iv). Forty-six nations participated with exhibits, resulting in 250,000 displays involving 72,000 tons of exhibit material, ranging from milk sterilization machines to works of art. Paid admissions numbered 25,836,073 during the time the World's Fair was open between May 1 and October 30, 1893 (Chicago Historical Society n.d.:2). "The Fair was a success as a work of art, especially in the noble way in which it formed a harmonious whole" (Johnson 1897:523).

A major motivation for sponsoring an exhibit at the Fair was the desire to attract and impress people world-wide. States and nations advertised their resources to the world. The Colorado Exhibit displayed in the Anthropology Building, for example, was assembled by A. F. Willmarth for this reason (Willmarth 1893:9; Hafen 1953:177).

Lyman Collection

The exhibit "of greatest importance [in the Utah pavilion] was perhaps that of prehistoric remains, collected and prepared under the direction of Dan Maguire of Utah" (Johnson 1897:483). Dan Maguire had been hired by the State of Utah to gather specimens at a number of sites within the state. His exhibit from southeastern Utah, borrowed from Platt Lyman, a Bluff resident, reportedly was the most popular, and included "King of the Blue Mountains", a large mummified male surrounded by a collection of artifacts (Maguire 1894:105). The Deseret Museum in Salt Lake City purchased Lyman's collection at the close of the Fair in 1893 (Deseret Museum Accession Records 1893–1894).

Gustaf Nordenskiold also had a small display in the Anthropology Building. He limited his exhibit largely to photographs, maps, and a model (Handy 1893:104), perhaps as a result of concern about bringing artifacts back into the same country from which he had so much difficulty removing them previously.

Frederick W. Putnam

In January 1891, the position of Chief of the Department of Ethnology at the World's Columbian Exposition was offered to Frederick W. Putnam, a professor of American Archaeology and Ethnology at Harvard University, who was trained as a naturalist. The major focus of the Fair was educational, but Putnam imposed another important goal contingent upon his acceptance. On February 13, he "made a condition that the Directory should appropriate sufficient money for original research and exploration to enable him to bring together as much new scientific material as time would permit" (Johnson 1897:316). Besides appropriating sufficient funds for extensive New World archaeological research, Putnam was in the unique position of establishing explicit and exact methods for careful, scientific excavation (Johnson 1897:319–322). At this time, contemporary archaeologists were beginning to use stratigraphic techniques involving comparisons of the depth and sequence in which artifacts were found in order to determine their relative age (Webster 1990:35); Putnam, however, had been actively advocating this technology at least as early as 1885 (Putnam 1885:1).

Illustrated American Exploring Expedition

As part of Putnam's plan to support original research, Warren K. Moorehead was appointed on April 1, 1891, as an assistant in fieldwork (Johnson 1897:326). In August of that same year, Moorehead was appointed as leader of the Illustrated American Exploring Expedition to explore, survey, map, photograph, and secure specimens in the upper Colorado, San Juan, and smaller tributaries. The expedition was jointly funded by the Smithsonian Museum, the Peabody Museum at Harvard, and the American Museum of Natural History. Moorehead wrote about this expedition in a series of articles for the American Illustrated Magazine. He departed on his expedition from Durango on February 29, 1892, for "the upper Colorado, the San Juan River and its smaller drainages." He had an elaborate goal:

> Should information unknown to the world be elicited it will be so carefully arranged that it will be of permanent value; and if on the other hand, nothing new and instructive is to be obtained, the doubts and speculations of scientists as to what might be discovered will be forever dispelled (Anonymous 1892a:305).

Throughout his articles Moorehead, who had excavated sites previously in Ohio, expressed astonishment as to the vastness and ruggedness of the western land and as to the extensiveness of the Indian ruins: "We used to call ourselves fortunate when we obtained permission to open one mound in Ohio. Here we have thousands of them" (Moorehead 1892a:550). He describes the degree of vandalism present in the ruins: "Cowboys and Indians, tempted by the flattering offers made them by traders, have despoiled the ruins and the relics easiest of access" (Moorehead 1892g:23). Moorehead and his party photographed, mapped, and measured locations of caves, cliff houses, valley ruins, and carefully excavated a number of burials, indicating the orientation of the skeletons and the artifacts found with them. "The American does not want us to spend a great length of time in making excavations, of course illustrated articles are desired above specimens." He recognized that in "less than two years it would be well-nigh impossible to secure a large collection of utensils implements and skeletons of the lost race that inhabited the San Juan Valley" (Moorehead 1892g:23). Moorehead's modest collection of forty-six pieces was exhibited at the World's Fair even though his return to civilization was less than the triumphant success he had anticipated. He wrote to Professor Holmes at the Smithsonian Institution: "The Illustrated American failed, left me in Utah with the whole outfit. Putnam was to pay us $100 a month for the work (getting the objects)... I sent him the whole collection but never

received a cent. So I was out (even after the suit against the Illustrated American was settled) for freight and transportation of the party home" (Moorehead 1897:1–2).

Viets Collections

Frederick W. Putnam was known for influencing archaeological excavations and insisting on rigorous standards in field work well before assuming his duties with the Exposition. On April 7, 1890, Richard Wetherill wrote Putnam stating, "I also received a number of pamphlets from you, which I have not yet had time to study" (R. Wetherill 1890). These were probably the same pamphlets Putnam sent to those interested in archaeology (Putnam 1885), and mentioned by Conrad M. Viets, a farmer living in the town of Cortez. In a letter from Viets to Frederick Putnam dated December 19, 1888, he said:

I suppose it would cost about $60 or $75 to explore one of these burial places according to your plan as in pamphlet. If you think the contents of one of these burial places would justify the expense of exploration I would employ one or two men to help me and explore the one sketched or take an entirely undisturbed mound and go over it saving everything according to your directions. (Viets 1888:2)

In a letter dated January 22, 1889, Viets continues: "The work will be of special interest to me, and I believe I understand and appreciate your idea of careful conscientious and scientific work that should be done in exploration" (Viets 1889). In one letter to Putnam, Viets includes a rough sketch of three pieces of pottery, their exact location in relation to a skeleton four feet below the surface "in dry soil of ashy appearance containing bits of charcoal. The pottery was all full of the same dirt that covered the grave" (Viets 1888). During the period of his excavations from 1889 and 1891, Viets continued to have problems with the Ute Indians and difficulty in hiring help: "I have had considerable trouble this fall in finding undisturbed mounds. Many mounds when last seen have since been dug in more or less by relic hunters" (Viets 1890). Moisture in the ground, storms, frozen ground, and his continual need for money also thwarted his excavations.

Putnam continually demanded a thorough and complete job of excavating: "Do go ahead and complete the exploration of the mound of which you say you have explored one half. There is no knowing what the other half will tell and I am very desirous of having the complete evidence of at least one of these mounds" (Putnam 1890:1).

In one letter dated December 31, 1889, Viets responded to "being raked over the coals" by Putnam for being careless. Viets justified his excavation techniques to Putnam:

Perhaps I was not careful enough in search or in taking care of teeth and some of the smaller bones such as the toe or finger bones. [They] *may have been thrown out with the dirt and lost, but no large bones, such as the radius fibula or tibia could by any possibility have been over looked or lost. The skeleton was approached and uncovered from the side and when the first bone was seen, the shovel was laid aside and a case knife used to loosen dirt, and the bare hand used to scrape it* [the dirt] *away. Viets trenched along one side, and "worked in about four feet"* (Viets 1889:1).

The missing bones can be explained by burrowing animals, and the position of the body as it was laid out.

From the position of the femor elevated at the knee, I believe the legs from the knees down were doubled back and under. In this position they may have received more moisture from the viscera and decayed faster. This doubled back position of the legs also explains why I found no bones below the knees (Viets 1889:2).

Three of four collections remain at the Peabody Museum. One small collection, purchased by Hazzard in 1892, is part of the Hazzard Collection at the University Museum, University of Pennsylvania.

Hyde Exploring Expedition

Richard Wetherill spent the month of August 1893 at the World's Columbian Exposition and was exposed to collections made according to Putnam's standards. During August Wetherill again met B. Talbot and Fred Hyde, former students at Harvard, who had visited the Alamo Ranch the previous year (Anonymous ndf:54). Sometime between this period and early fall, the Hyde brothers made arrangements to purchase "such finds as the Wetherills might make" (Hyde 1930:2). Almost forty years later B. Talbot reminisced: "I urged the accurate measuring and plotting of caves or cliff houses, with a map of Grand Gulch to be made in the field and promised special record keeping equipment should the work be continued" (Hyde 1930:2).

Early in the fall of 1893, Richard Wetherill designed data entry forms to take with him on his expedition to Grand Gulch with specific places for listing site location, number of the house, article, name, number of the room, number of the section within the site, depth, number of floors, and remarks. He planned to mark each article with India ink, to show the plan of all houses made on paper ruled both ways, and to make drawings. "I think," he wrote to B. Talbot, "you will find this will meet all the requirements of the most scientific but if you have any suggestions whatever I will act upon them" (R. Wetherill 1893e). Eight members of the Hyde Exploring Expedition, financed by the Hyde Brothers, departed for the field on November 29, 1893, visiting Cottonwood Canyon, Grand Gulch, and several other canyons in southeastern Utah. R. Wetherill wrote Baron Nordenskiold: "I will give you an outline of the finds by sending you a copy of notes and ground plans of caves" (R. Wetherill 1894i:1). He goes on to explain his excavation methodology and note-keeping technique, including the depth of artifacts, the position of bodies, and the associations and places of artifacts. "One reason they [the photographs] look so dark is because they are several feet below ground and were timed from three to five minutes to get anything" (R. Wetherill 1894i:1).

The discoveries of the 1893–94 Hyde Exploring Expedition were significant and well documented. "We are making new discoveries having found a people still older than the cliff dwellers who occupied the same caves" (R. Wetherill 1893d:1). A major discovery of the Expedition was a Basketmaker cave containing 96 skeletons with evidence of a violent slaughter. Recently this cave, Cave 7, has been identified by Winston Hurst . The artifacts, field catalog, and skeletal material have been reexamined, yielding new and significant information about the Basketmaker culture.

Relative to the Hyde Expedition, 1893–94, Richard Wetherill wrote to Baron Nordenskiold, "We have only $2,500 to work with and need as much more to carry this through successfully" (R. Wetherill 1893d). He states again on July 3, 1894, "We did not do as [great] scientific work as I should have done if I had been well supplied with funds" (R. Wetherill 1894i). As to further work needed, Wetherill wrote to Hyde that "the collection should really be re-numbered and I think the plans will yet have to be drawn from the measurements that I have" (R. Wetherill 1893d:1).

F. W. Putnam appears to be one of the first in the United States to have recognized the significance of excavating entire sites, saving everything, and keeping collections together and intact (Putnam 1895). His standards for collections were not always followed, however. Several artifacts were removed from the Hyde Exploring Expedition's collection before it was sent to the Hyde brothers and then on to the American Museum of Natural History where Putnam was Curator of Anthropology. Further evidence of fragmentation occurred at Cave 17, an important cave on the 1893–1894 Hyde Expedition. Robert McNeeley, a guest at the Alamo Ranch in 1894 (Anonymous ndf), apparently purchased a "Basket found on the face of mummy in a pot hole in the center of Cave 17, Grand Gulch Utah. The remains beneath the basket were decayed" (McNeeley 1895:1).

Friendship, in addition to revenue, also appears to have been a motive for partially breaking up collections. Wetherill wrote to Nordenskiold after the Expedition, "I will be able to send you 12 or 13 skulls of the new race (Basketmaker)... There is no money in sending them at the price you offer but I want you to have them. They will be the only ones outside of this collection I will send" (R.Wetherill 1894c).

Whitmore-Bowles Expedition

In 1896, C. E. Whitmore and his ward, George Bowles, financed the Whitmore-Bowles Exploring Expedition of 12 men plus Richard Wetherill's new bride, Marietta Palmer, into Grand Gulch, Moqui Canyon, El Capitan, Laguna Creek, Rio de Chelle, and Marsh Pass in the winter of 1896–1897. The team kept careful records and measurements, took photographs, and drew maps and floor plans of alcoves (Anonymous ndb; Anonymous ndd). Before selling it to the Hyde brothers, Wetherill wrote: "I am in receipt of several offers for parts of the collection but think it should be held together" (R. Wetherill 1897e). In early 1898, Richard Wetherill reported, "very few things were missing and all unimportant. The numbers between 5-5 and 6-0 we never did have, and in one other place, ten others are entirely missing. Even then there are nearly 2,000 articles" (R. Wetherill 1898d). Indeed, Richard Wetherill's methodological concept of archaeological investigation had greatly advanced over a ten year period. After negotiating, the Hyde brothers purchased this collection for $3,000 and gave it as a gift to the American Museum of Natural History.

Lang Collections

Countless smaller and unrecorded collections, and several other carefully documented collections, also were removed from the canyons of southeastern Utah between 1893 and 1900. C. B. Lang, employed as the Expedition photographer on the 1893 Hyde Exploring Expedition, participated in four other expeditions. Lang, together with Franklin J. Adams and Robert Allan (who packed and loaded artifacts and provided fresh supplies on the 1893 Hyde Exploring Expedition), visited Hammond, Cottonwood, Battle, and Butler Canyons, and Grand Gulch in 1894 and 1895 (Ryerson-Lang Collection 1894–1895:1). They learned the techniques of recording artifacts, keeping detailed and accurate records, depths, measurements, specific locations of caves, and noting associated artifacts as they were found. Their collection, housed first at the Walker Museum at the University of Chicago and later transferred to the Field Museum of Natural History in Chicago in 1923, has remained nearly complete and in excellent condition. However, a number of items excavated and recorded in their field catalog (Ryerson-Lang Collection 1894-95) are not listed in the museum record (Field Museum, Acc. No. 1468).

Another Lang collection was acquired by the Deseret Museum in Salt Lake City prior to June 14, 1894. Henry Montgomery, a geologist and professor at the University of Utah at the time, wrote an extensive article about this collection (Montgomery 1894:227–234). It was later transferred to the LDS Museum of Church History and Art, and divided between Salt Lake City and Brigham Young University in Provo, Utah. Unfortunately, over the years a considerable portion of the collection has been misplaced or inadequately cataloged (LDS Church Museum after 1981). The third collection, principally a Basketmaker collection, made in 1897, was in the possession of Mr. Stengel, "Furrier," Main Street, Salt Lake City, Utah, but a brief mention in T. M. Prudden's notes is all that is known of it (Prudden nda:60). The

whereabouts of a fourth Lang collection, collected in 1897–1898 in Chinlee, Cottonwood, and Montezuma Canyons and Comb Wash, also remains a mystery. C. B. Lang wrote to Dr. T. M. Prudden about this collection, at the time in the possession of Mr. Bixby of Salt Lake in 1900 (Lang, Allan, Adams 1895). A typeset catalog is in Accession File No. 1468 at the Field Museum of Natural History in Chicago.

T. M. Prudden Expeditions

T. Mitchell Prudden, a Doctor of Pathology from Connecticut, made several trips to the San Juan Watershed, collecting a great amount of data and some artifacts. He first published an article about the Basketmaker culture in 1897 based on Richard Wetherill's excavations and observations (Prudden 1897), and then focused on surveying small Pueblo unit dwellings. Dr. Prudden widely photographed, collected, and surveyed archaeological sites across the Colorado Plateau. The time he spent with the Wetherill brothers collecting field data is clearly reflected in the excellent quality of his field notes, his published articles, and his well documented collection. The Prudden Collection and archives are housed at the Peabody Museum of Natural History at Yale University and contain a rich source of archival material.

Museum Collections

One would expect that once these collections reached museums, they would remain intact forever, and that inter-museum loans or transfers would be carefully documented. This was the history of some collections. Willmarth's collection for the State of Colorado was returned to the Colorado Historical Society after the World's Columbian Exposition where it has remained. The Platt Lyman Collection was purchased by the Deseret Museum and was taken back to Salt Lake City after the World's Fair (Deseret Museum 1894). The H. J. Smith Collection, combined with the Hazzard Collection at the Fair, was displayed both within Battle Mountain and in the Anthropological Building (Smith 1893). After the Fair, the expanded Hazzard Collections were placed in storage in Chicago for a time, then loaned by Hazzard to the University Museum at the University of Pennsylvania for a two year period (Hazzard nda; Hazzard ndb). Soon after this exhibit was installed, Mrs. Phoebe Hearst purchased the collection for $14,500 for the University Museum (Hazzard ndb), following this with the request that a representative portion be sent to the Lowie Museum at the University of California in Berkeley (Smith-Harner Collection, Acc. No. 11).

Upon returning home to Sweden, Nordenskiold wrote *The Cliff Dwellers of Mesa Verde* which was printed in 1893. After his death, his collection was sold to Mr. Herman Fritjof Antell, and it was ultimately placed in the National Museum of Finland (Steen 1978:27–28). In 1982, Charlie Steen was sent by the National Park Service to the National Museum of Finland to inventory the Nordenskiold Collection. He returned with a handwritten list of 768 items recorded under 762 catalog numbers. He was able to locate and itemize 388 artifacts, approximately 51 percent of Nordenskiold's collection. The remainder of the collection could not be located and there was no record as to their disposition (Pearson 1982).

Field Museum of Natural History

F. W. Putnam apparently made the first public proposal that a permanent museum should be created from the exhibits connected with the World's Columbian Exposition (Farrington 1930:1). Marshall Field of Chicago, with a donation of $1,000,000, made this possible (Johnson 1897:500). A number of exhibitors such as W. K. Moorehead donated their collections to the new museum, the Field Columbian Museum of Chicago (Field Museum, Acc.No. 498). After a number of attempts to sell the Green Collection and a series of negotiations (see Hayes this volume), the Rev. Green's Collection was purchased by

the Field Museum for $2,000 just before the museum doors were opened on June 2, 1894 (Green 1894). The collection, however, was not as safe or permanent as one might expect. T. R. Roddy, a dealer of "Indian curios from all states, museums and dens" (Roddy 1902), negotiated with the Field Museum for "a bunch of stuff on hand you would care to exchange for good museum pieces" (Roddy 1911). A number of items, including 154 arrow points from the Green Collection, which would have been very valuable for recording Basketmaker activity in Grand Gulch, were part of this exchange (Field Museum, Acc.No. 121).

American Museum of Natural History

After the Hyde brothers gave their collections from Grand Gulch and southeastern Utah to the American Museum of Natural History in 1895 and 1897, the two Wetherill collections were renamed, the "First and Second Wetherill Collections" and the McLoyd and Graham Collection was renamed the "Kunz Collection." With Frederick Putnam well established as the Curator of Anthropology at the Americal Museum of Natural History, it appeared that the collections would be well cared for and maintained. In an unsigned and undated note to Richard Wetherill attributed to B. T. B. Hyde at the American Museum of Natural History, Hyde wrote:

We have just made the formal gift of the collection to the museum, although we unpacked it about a month ago in the work rooms. The way in which the articles were numbered has greatly astonished and pleased Prof. Putnam. I am going over your field notes and making lists grouping the numbers of articles of each cave, house, etc. together. Then the articles will be placed in drawers accordingly about the room. Each drawer then carefully worked over and treated for mounting. Am gradually getting the photos printed and writing an account of the work you did to submit to Professor Putnam" (B.T.B. Hyde nd).

B. T. B. and Fred Hyde not only gave their collections to the Museum "but also arranged to continue explorations in the Southwest for several years, under the general direction of the Curator of the Department, until the Museum is supplied with an extensive and authentic collection from the cliff houses, ancient pueblos, and burial caves and mounds of the Southwest" (Weitzner nd). The salary of Mr. George Pepper, who was responsible not only for curating the Grand Gulch and other Southwest collections, but also for supervising Mr. Richard Wetherill in Chaco Canyon, New Mexico, was paid by the Messrs. Hyde as well. The brothers continued supporting the American Museum in this capacity until 1903, the same year Professor Putnam resigned as Curator of Anthropology at the American Museum of Natural History (Weitzner 1952:21).

George Pepper remained on the staff at the American Museum until October 19, 1908, when he received a curt message from the curator demanding to see him in his office two days later. By October 24, 1908, he "was in a position to resign from the American Museum" (Pepper 1908). However, his involvement apparently lasted until August 24, 1909, when the choicest and most important pieces from the Kunz and Wetherill collections had been packed up by George Pepper and removed from the Museum, "98 barrels and boxes total" (Pepper 1909b); "and careful revision of certain parts of the catalog has been necessary" (Pepper 1909a). To understand the abrupt disruption of the collection, one must back track and examine a developing friendship between George Pepper and George Heye, "a very wealthy young man and [one who] seems to be thoroughly enthusiastic" (Pepper 1904b).

George Heye

George Pepper wrote to Professor Putnam on June 28, 1904: "My Dear Professor: This letter will introduce Mr. George G. Heye... He is greatly interested in Indian work and has considerable valuable material of his

own. He is anxious to get in touch with the work of the various scientific institutions" (Pepper 1904a). Other letters written by Pepper on the same day indicate how captivated Pepper had become by his new acquaintance, George Heye, who must have had an infatuating and compelling personality.

By at least 1906, Pepper had begun collecting Indian artifacts for Heye (Pepper 1906:2). In 1908, Heye gave his highly prized collection to the University of Pennsylvania. G. G. Gordon, the Director of the University Museum at the University of Pennsylvania, wrote to Heye expressing the deep "gratification which your offer to deposit your collection in this museum has given them" (Gordon 1908a). During that same year, Gordon offered Heye a position on the Central Committee; ultimately Heye was elected to the Board of Managers (Gordon 1908a). Following his resignation in December 1908, from the American Museum of Natural History, Pepper was employed at the University of Pennsylvania, on January 15, 1909, "provided such appointment imposes no expense upon the department" (F. Pepper 1908). The bulk of Pepper's salary was paid by George Heye (Heye 1911).

For seven years, operations at the University of Pennsylvania Museum ran smoothly. An inner-museum memo of April 13, 1916, from Gordon at the University of Pennsylvania states: "Mr. Heye... will tell you that the promise was then made that [his] collections should remain undisturbed in the Museum and will probably ultimately be given to the museum by will" (Gordon 1916a). Gordon must have been shocked, therefore, when a little more than a month later George Heye resigned as Vice President and Director of the University Museum and Chairman of the American Section and withdrew his own very valuable collections. Prior to May 22, 1916, the University had disclaimed any attachment they thought they might have had on the collection. "The University Museum of Philadelphia has no claim against or upon the collections of Mr. Heye. Same are on deposit as a loan and will be surrendered to him or his assigns on request" (Gordon 1916b).

Museum of the American Indian

Concurrently with or shortly after Heye's resignation from the University Museum at the University of Pennsylvania, the Heye Foundation and the Museum of the American Indian were founded by Heye, a passion and a focus which for him lasted the rest of his life. Promises made by Heye and University positions he held before 1916 may have been designed by him from the beginning to increase his own stature since he had been conceptualizing plans for his own elaborate museum as early as 1905 (Bandelier 1905). Fifty years later, Heye was criticized by his former staff for being ruthless in acquiring collections (Burnett nd:14), for requiring staff members to prepare reports on field work on their own time, and for abruptly dismissing all the scientific staff from his museum (Nusbaum 1962:1–4; Wallace 1960).

By 1912, the Wetherill and Kunz collections in the possession of George Pepper had been packed away in barrels and boxes for three and a half years, according to the instructions of B. T. B. Hyde. Nothing had been published about them in ten years even though their existence and value were well known. In 1912, responding to a request, Pepper wrote to Gordon:

"...the major part of their material [McLoyd and Graham and Wetherill] is within our reach. We have the notes, plans, and photos of the Wetherill work and the printed descriptive catalog of the work done by the other parties so there is enough material in hand to show what the artifacts were and how and where the old people lived" (Pepper 1912).

Meanwhile, without these valuable documents and with the most important artifacts missing from their own collection, the American Museum was thrown into a state of confusion. The curator wrote to Pepper in 1917:

A [staff member] recently discovered the very large amount of skeletal material secured by the Hyde expedition and noticing that it was not catalogued is working on cataloguing of it. He naturally wishes to know what numerals on specimens mean... Being a museum man you will realize at once just what this means; how comparatively useless this very large and otherwise very valuable collection is without definite location. If you can help us in this difficulty I shall be very grateful to you" (Wissler 1917).

Soon thereafter, the portions of the Kunz and Wetherill collections, removed from the American Museum of Natural History in 1909, reappeared at the Museum of the American Indian, a gift of Mrs. Thea Heye, George Heye's wife (Thea Heye Collection 1918). In the meantime, the American Museum staff was attempting to organize their remaining collection and to publish information on the Wetherill work done in Grand Gulch.

B. T. B. Hyde

In 1918, the American Museum of Natural History hired B. Talbot Hyde to finish the uncompleted work of the Hyde Expeditions (Weitzner nd:43). His employment was not entirely satisfactory for the Museum. B. T. B. Hyde was called a "boy scout" by members of the staff, but the "real serious phase of the matter is that Mr. Talbot Hyde has made promises in the name of the Museum which cannot possibly be fulfilled and seems repeatedly to have been over enthusiastic and perhaps indiscreet in this connection" (Goddard 1920). Hyde was instrumental, nevertheless, in organizing the Cartier Expedition, an expedition which re-entered Grand Gulch to identify the sites where the early Wetherill material originated (Nelson 1920a, 1920b). By the time B. Talbot Hyde's employment was terminated late in 1920, he had located a number of photographs (Hyde Photographic Collection 1921) plus the field notes and catalog for the 1896–97 expedition. The field notes for the 1893–94 expedition, as well as a number of other photographs, are still missing.

In November 1989, the Wetherill–Grand Gulch Project team located the 1916 contract between George Heye and B. Talbot Hyde at the Museum of the American Indian. This contract explains what happened to the Wetherill and McLoyd and Graham collections. Talbot and Fred Hyde gave the collections to the American Museum of Natural History in 1895 and 1897; however, on January 16, 1916, Hyde "agreed to sell and transfer my right, title, and ownership in said collections to G. G. Heye for the sum of $1200" (Hyde 1916). George Pepper was the witness to this transaction. Talbot Hyde, one suspects, also was captivated by George Heye's compelling personality and lost his resolve to keep the Wetherill and Kunz collections intact. This transaction may have been arranged between Pepper, Hyde, and Heye as early as 1908 (Heye 1909), only to become official when Heye's Museum, the Museum of the American Indian became a reality.

One of the great archaeological losses is that many of the original Wetherill and McLoyd and Graham field numbers and American Museum numbers were removed from the artifacts at the Museum of the American Indian and replaced with numbers referring to the Museum of the American Indian. Without a correlation chart, which has never been found, to reference back to the original field numbers, many of these artifacts have lost their identity and association. Consequently the collections may never again be reconstructed.

Conclusion

The search for lost collections and documents continues in the Wetherill–Grand Gulch Project team's attempt to retrace expeditions back into Grand Gulch and southeastern Utah and to reestablish the location of artifacts taken and removed from that area. Archaeological and historical research questions remain to be answered. Where are the missing Lang collections from southeastern Utah? Where are the missing field notes, maps, and photographs from the Wetherill Collections? Where are the missing collections taken from several caves by the 1893–94 Wetherill Expedition and not included with the majority of the collection? The Wetherill–Grand Gulch project has made significant progress in locating the major collections, but much work remains. With the passage of time, it will be even harder to reconstruct the collections taken from southeastern Utah.

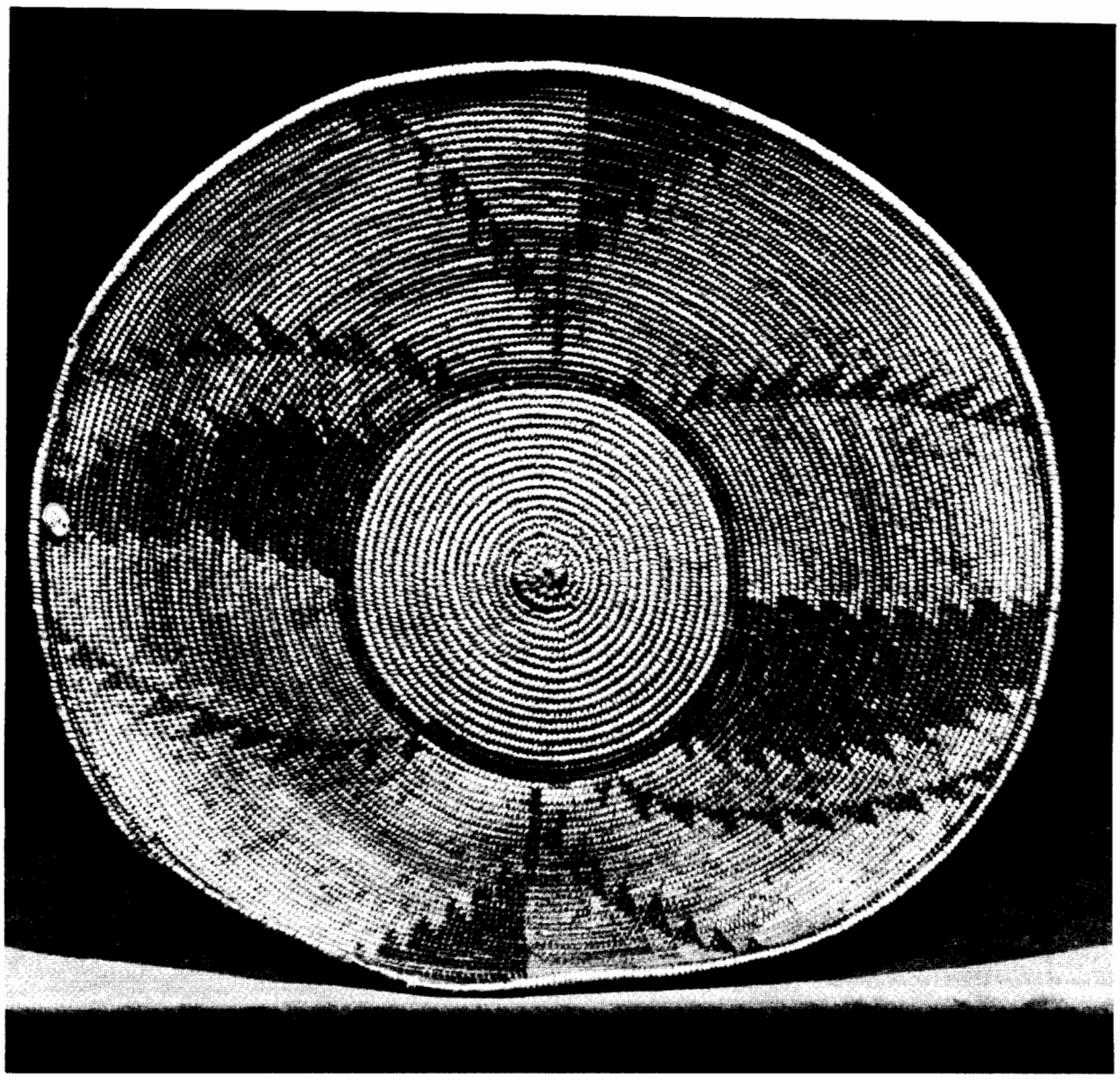


Figure 6.0 This closely woven and well-preserved basket (H-12288) was collected from Grand Gulch by McLoyd and Graham in the 1890s and is now part of the Kunz Collection at the American Museum of Natural History in New York. (Photograph by Bruce Hucko)

THE CHICAGO CONNECTION: 100 YEARS IN THE LIFE OF THE C.H. GREEN COLLECTION

Ann Hayes

The Wetherill discoveries at Mesa Verde in the late 1880's touched off an epidemic of archaeological explorations in the canyon country of the San Juan River Basin. Many important prehistoric collections were made during the decade that followed. This period of intensive southwest exploration coincided with one of intensive collection-building on the part of anthropological museums in urban centers of the eastern United States, thus creating a market for these antiquities. This account of the journey of one important Grand Gulch collection to its permanent home at the Field Museum of Natural History in Chicago is a case in point.

The story begins in 1891, or perhaps even earlier. Apart from the U.S. government-sponsored Hayden survey, which was mainly geared to mapping the western territories and searching for sources of mineral wealth, the earliest explorers of the San Juan's tributary canyons were the sons of pioneering families who had homesteaded there. Charles McLoyd and the Graham brothers, Charles and Howard, of Pine River, Colorado were three such young explorers (Schalles 1961:68). Charles McLoyd and Howard Graham had worked with the Wetherills at Mesa Verde and had caught the passion for "relic hunting." Tales of their discoveries inspired Howard's brother Charles to try his hand. On New Year's day 1891, Charles McLoyd and Charles Cary Graham headed down Utah's Grand Gulch to a virgin territory of their own. In the three months that followed, they covered the canyon from end-to-end, digging for Anasazi treasures. They were the first Anglos to explore it "in depth," and were amply rewarded. On April 18 they emerged with the first known archaeological collection to come from Grand Gulch (Daniels 1976:15).

Their collection was purchased by Reverend Charles Henry Green of Durango for $3,000 in cash (Green 1894). Background on Reverend Green is scanty. Born in Copiah County, Mississippi, he graduated from the Southern Baptist Theological Seminary in Louisville, Kentucky in 1887. A peripatetic pastor, he was constantly on the move. He held the pastorates of four Baptist churches, in Florence and Ludlow, Kentucky, and in Durango and Denver, Colorado, in the space of five years (Lynch 1990). Green's salary from his pastorate at the time of this purchase was $700 per annum (Bennett 1990). Thus there is reason to believe that Green was "a man of independent means."

Church records from the Ludlow church explain that Green's resignation in August 1890 was due to ill health, and because he needed a change of climate (Bennett 1990). Perhaps the need for "a change" had something to do with reports of the Wetherill findings at Mesa Verde. Green tells us that "the Wetherill collections were a new inspiration to look further into the history of America's prehistoric races." He wanted to purchase one of the Wetherill Mesa Verde collections but could not afford it, and so bought McLoyd and Graham's less expensive one instead (Green 1892:18).

Reverend Green was enthusiastic about his collection. He wanted to view first hand "the very ruins from which these relics had come" and to try his own hand at relic collecting. Signatures found in Grand Gulch lead us to believe that he accompanied Charles McLoyd and D.W. Ayres of Durango into the canyon in June 1891 (Blackburn and Atkins this volume). Green mentions that a photographer went along "to catch the very images of homes and fortresses that had been abandoned centuries ago" (Green 1892:18). A Field Museum photo album contains a handsome glass plate photo from this trip. It shows a kneeling man in cowboy boots removing large corrugated jars from an open burial pit(Figure 6.1). The photograph suggests that the expedition was fruitful, though Green's published catalog does not explain which (if any) pieces from it were added to McLoyd and Graham's original group.

Green was adroit with a pen. From 1892–1894, he served as editor of the Rocky Mountain Baptist Magazine and also as editor of Our Church Messenger, the newsletter of the Immanuel Baptist Church of Denver. A self-styled expert on the subject of the Cliff Dweller, he authored two publications about them: *The Cliff Dwellers, a Descriptive History of the Lost American Race* and a booklet titled *A Unique Collection of Cliff Dweller Relics* (Lynch 1990).

A copy of the latter work was found in the archives of the Field Museum. It contains a 17 page catalog of Green's collection which lists the pieces by type of material and gives some provenience information. Was this McLoyd and Graham's original catalog or did Green write it from their field notes? Whatever happened, the collection was henceforth to be known as the "Green Collection", after its second owner.

Figure 6.1 A member of C. H. Green's Grand Gulch Expedition with three large corrugated jars. June, 1891. Field Museum of Natural History (Neg# 63228), Chicago.

The rest of the booklet comprises writings that freely interpret the Cliff Dweller findings. An essay on the Cliff Dweller by Green introduces several newspaper and journal articles on related topics. These provide fascinating glimpses of the perplexed Victorian mind grasping for understanding of "a race of men whose end and origin are alike lost in the obscurity of the ages" (Green 1892:20).

Though techniques of relative and absolute dating were unknown at the turn of the nineteenth century, Green states that his Cliff Dweller relics are "scientifically estimated to be the oldest in the world." He argues that the Cliff Dwellers were ancestral to the more advanced civilizations of Mexico, Meso-America, and Peru. An article by Andrew S. Fuller (1891) titled "The Cradle of the Race—Why not in America instead of Europe or Asia?" follows on the heels of the Green essay. It theorizes that man originated in the Americas and that human migrations across the Bering straits proceeded from the Americas toward Asia instead of the other way around (Green 1892:21–26). Green may have believed that his collection represented a kind of American genesis—the earliest evidence of man on this planet. Such a notion would have been thrilling to a young man of the cloth. Perhaps this is what impelled him to seek a wider audience and to exhibit his collection at the World's Columbian Exposition of 1893 in Chicago.

This greatest of all great fairs is pivotal to our story. Its purpose was to celebrate the quadricentennial of Columbus' Discovery of the Americas and to illustrate the progress that had taken place in those 400 years. The luminous "White City", with its network of waterways and adjoining Midway Plaisance, sprawled over six hundred acres of reclaimed swamp land on the shores of Lake Michigan. It was by far the largest World's Fair to date, covering five times the area of its model and predecessor, the Exposition Universelle of 1889 in Paris. To see everything at the fair briefly, one would have needed about three weeks and would have had to walk over 150 miles (Applebaum 1980:5). Tens of thousands of people tried.

Opportunities for our states and territories and all nations to exhibit their most advanced technologies, as well as their natural and cultural resources, were manifold. News about the discovery of the Cliff Dwellers of the American Southwest had caught the attention of the world. They would be well-represented by many impressive exhibits at the fair (Diamond 1988; Webster 1990:8–15). Green wanted a share of this notoriety for his own collection. There he intended to sell it, though not to just anyone—to a particular buyer, as we shall see.

In the summer of 1891, Green resigned his Durango pastorate and began travelling east with his collection. The itinerant pastor was Chicago-bound, but the journey was not a hurried one. There was a six week stopover in Colorado Springs during July and August, where Green, accompanied by Charles Cary Graham, gave stereopticon lectures about the Cliff Dwellers. Awed by his presentations, the Manitou Springs *Daily Journal* remarked, "The scientific people of Chicago are anxiously awaiting Mr. Green's visit" (Green 1891:30).

It is unlikely that the arrival of the small-town pastor with his crated relics was a heralded event in the big city. Chicago had many other things on its mind. In February of the preceding year, President Harrison had signed into law a bill awarding Chicago the honor of hosting the World's Columbian Exposition. The civic pride of this energetic yet cultured metropolis was on the line. The target date for the opening of the fair was October 12, 1892, and preparations were lagging behind schedule (Applebaum 1980:2).

The fair opened more than six months late —on May 1, 1893. It closed on October 30 of the same year. We know from dated correspondence that Green was in Chicago in November 1891. The Denver City Directory lists him as pastor of the Immanuel Baptist Church of Denver in 1982 and 1893. Unless

he made interim trips to Chicago after taking over his Denver pastorate, Green must have missed the fair entirely.

Let us return to the autumn of 1891. On November 14th, Green, recently arrived in Chicago, mailed a thick envelope to Frederick Ward Putnam in Cambridge, Massachusetts. Putnam was Curator of the Peabody Museum of Natural History and Peabody Professor of American Archaeology and Ethnology at Harvard University (Platt 1935:276–277). In January 1891, Putnam had been appointed Chief of Ethnology at the fair. Green's envelope contained a proof of his catalog accompanied by a personal letter offering to loan his collection to Putnam's department for a fee of $3,000, the price he paid for it (Green 1891). No record of Putnam's response to Green's letter has been found. However, it is unlikely that Green was compensated for the loan of his collection.

Frederick Ward Putnam, one of the most influential anthropologists of his day, approached research as a discipline with stringent rules. In 1885 he had said, "The time has come when we must know the exact conditions under which every object was obtained, and its association with other things, in order to draw conclusions of any scientific value..." (Putnam 1885; also see Appendix G this volume). This is one of the earliest expressions of a credo that is central to the practice of archaeology today.

Professor Putnam's assignment as the fair's Chief of Ethnology placed him in full charge of a unique empire of anthropological research. In accepting the Chief's position, he'd made a condition that exposition funds be granted for original research on the archaeology of the Americas under his direction. During 1891 and 1892, costly expeditions traveled to important sites in North, Central, and South America. These were led by Putnam's "Special Assistants," accomplished scientists such as Franz Boas who could be trusted to do meticulous work. Only these expeditions would be supported by Putnam's special funds (Johnson 1897:316). In the eyes of Professor Putnam, McLoyd and Graham were a pair of reckless amateurs. The Green collection was, therefore, a wildcat of uncertain lineage.

Despite all this, the Green collection was displayed inside the vast Anthropological Building, under the same roof as Putnam's highly respectable "Department M" exhibits (Conkey 1893:1099). A total of 362 domestic and 452 foreign collections were exhibited there (Johnson 1897 Vol. 2:318). Green's is listed as being among those that were "novel and rare, highly important, and of fascinating interest" (Johnson 1897 Vol. 3:417).

Reverend Green now turned his mind to securing the future of his collection. He wanted to keep it intact, and he wanted to find a permanent home for it (Green 1893a). Green was aware of Putnam's idea that a major museum of natural science, to be named "The Columbian Museum of Chicago," should result from the exposition. This, to Green's mind, seemed the appropriate repository. All of Green's correspondence from this point on is focused on promoting the sale of his collection to the museum.

For reasons not clear to the writer, Green decided to sell shares of ownership in the collection. In several of his letters to Putnam and to trustees of the Columbian Museum, he referred to the collection's "stockholders" (Green 1893b). The hope was that the stockholders would receive a return on their investment when the sale took place. They had reason to believe that the new museum would pay a good price, as it would be generously endowed by Chicago's wealthy benefactors of culture (Horowitz 1989:52). However, Green told Putnam, "There are a large number of our stockholders who would give a part if not all their equity in the collection if it could remain in Chicago." Placement of the collection, not profit from the sale, seems to have been their overriding concern.

Because Green was not living in Chicago at the time of the fair, he needed a well-connected local person to assume responsibility for the collection and act as an agent in making the sale. Selim Hobart Peabody filled the bill. A former president of the University of Illinois, the holder of Ph.D and LL.D degrees, Chief of the Department of Liberal Arts at the fair, and widely recognized as one of the the foremost educators of his day, Peabody had the kind of credentials that would impress officialdom at the Columbian Museum (Johnson 1897 Vol. 2:248).

The Green-Peabody alliance is reflected in the "Society of Cliff Dweller Archaeology of America" letterhead that Green used for correspondence with Putnam and the trustees of the Columbian Museum. The object of the society, as noted on the letterhead, was "To conduct American exploration, with the view of ascertaining the antiquity, as well as the progress, of man upon this continent." The officers are Selim H. Peabody, Ph.D., LL.D., President, and C.H. Green, Secretary (Green 1893a). One suspects that Dr. Peabody owned equity in the Green collection and that the two men were associated mainly for the purpose of selling it. The other stockholders, if there were any, would also have been members of the society.

A letter from Peabody to Putnam written ten weeks after the closing of the fair (Peabody 1893) requests that the exhibit be properly packed and sent to the Columbian Museum "until some other disposition can be made of it." Putnam's scrawl in the lower left can be deciphered to read "Packed in five boxes - FWP." The boxed-up collection was moved from the Anthropological Building (soon to be razed) to the Columbian Exposition's former Palace of Fine Arts, a Greco-Roman edifice in Jackson Park that housed the museum's collections until the completion of the stately building in Grant Park that has served as its permanent home since 1920 (Farrington 1930 Vol. 2:19).

As we look in on the Columbian Museum during its formative stages, we see that it was, in every respect, heir to the human resources and collections that had been assembled for the exposition. Its staff positions were filled by dignitaries who had held important posts at the fair. Frederick J. V. Skiff, Chief of Mines and Mining, was its first Director. William Henry Holmes, head of the U.S. Bureau of American Ethnology, who had arranged the ethnological exhibits in the fair's U.S. Government building, was chosen as the museum's Curator of Anthropology (Farrington 1930 Vol 2:6–7).

The young and brilliant Franz Boas, Putnam's Special Assistant, who was in charge of the Laboratories of Physical Anthropology in the Anthropological Building and who had arranged for the importation of Native American tribes from the Pacific coast as part of an ethnographic display on the shores of South Pond, was not offered a permanent position at the museum. He did stay on temporarily to assist in the work of organizing the exhibits, which allowed him a role in the concluding phase of this saga. (Cole 1985:132–135).

The Columbian Museum's solvency had been assured by generous gifts from Chicago's philanthropic leaders, which included a stunning million dollar donation from Marshall Field. The Marshall Field gift is reflected in the museum's change of name from Columbian Museum of Chicago to Field Columbian Museum on May 21, 1894, shortly before the opening. These funds made possible the purchase of some of the most desirable exposition exhibits. Material illustrative of the natural sciences, botany, anthropology, geology, and zoology had become available in quantity. Putnam's "Department M" collections were earmarked for the new museum (Farrington 1930 Vol. 2:11). The Green collection, packed in five boxes, was parked like an orphan on the doorstep, hoping to be let in.

In February 1894, the countdown toward the opening of the Field Columbian Museum on June 2 had begun. Director Skiff was now seriously considering the purchase of the Green collection. He wrote to Putnam, "What do you know about the Green Collection? I am aware that the excavation was that of an amateur, but it must be considered that the trustees desire to make as good a showing as possible on opening day, and are willing to pay for it" (Skiff 1984a). Putnam's answer must have been affirmative, for Skiff next directed Boas to negotiate with Peabody (Skiff 1894b). Finally, on April 19, a contract between the Field Columbian Museum and the Society of Cliff Dweller Archaeology was signed by Selim H. Peabody, President, and Charles H. Green, Secretary & Treasurer of the Society (Field Columbian Museum 1894b). It was sealed and delivered in the presence of Dr. Boas, representing the museum.

The price paid by the museum for the collection was $2,000. A separate agreement was made with Reverend Green for the sale of "500 catalogs and all negatives he holds of Cliff Dweller Ruins," for $100 (Field Columbian Museum 1894a).

The good news was that the C.H. Green collection, now accession number 121 at the Columbian Museum, had found a home at last! Has it been a good home? What had happened to the collection since those five boxes were unpacked? Early in January 1990, six Wetherill–Grand Gulch Project researchers spent six days at Chicago's Field Museum of Natural History (the Field Columbian Museum's present name), photographing and documenting the Green collection in its present state.

There were many good reasons for doing this. Green's collection is representative of the Basketmaker culture. It has been especially important for the Wetherill study because each stage of its history can be documented from primary sources. Ann Phillips, archivist for the Wetherill Grand–Gulch Research Project, was able to identify burial assemblages by coordinating three sources: Graham's journal of the 1891 Grand Gulch expedition; Green's published catalog; and the Field Museum's Inventory Record (which had preserved Green's numbering system). These three links in the chain, confirmed by signatures scrawled in Grand Gulch alcoves (Blackburn and Atkins this volume), have made possible the association of many artifacts to burial locations (Phillips 1990).

Those objects that could be associated to a burial or to a known site in Grand Gulch were identified and photographed. The same was done for a companion collection, the Ryerson/Lang. (The Ryerson/Lang, which came from several southeast Utah canyons including Grand Gulch, had been excavated in 1894 and 1895 by Charles Lang, Robert Allen, and Franklin J. Adams [Lang 1895]. It was donated to the museum by Martin A. Ryerson, Jr., one of the Field's early benefactors.)

Most of the artifacts were kept in one of the high security curation areas of the museum. Huge corrugated jars, classic basketmaker baskets, woven and plaited sandals, flint, stone, and bone tools, cradle boards, crooks, canes, ladles, hammers, awls, feather blankets, and skin pouches, arranged by catalog number, were stored on open shelves. Experience of the genuine articles far surpassed expectations based on album photographs and the Field's inventory lists. Some of the finest specimens from both collections were on permanent display in one of the public areas of the museum.

Museum records showed that the entire Green collection had been transferred to the Columbian Museum in 1894. In the museum's inventory record there are 350 entries representing the collection, some with several specimens per entry. However by the time the Wetherill group arrived, 96 years later, about one-tenth of the collection had been "consigned to waste." Many items had been traded to T. R. Roddy, "White Buffalo Chief of the Winnebago Indians," a local artifact dealer whose place of business was opposite the museum (Roddy 1902). This sort

CHARLES HENRY GREEN

Figure 6.2 Is this the Reverend C. H. Green? Photo from Representative Men of Colorado, 1902:237. Courtesy of the Denver Public Library, Western History Department.

of trading was a permissible museum practice through the 1920's. Everything that remained was stored on open shelves in temperature and humidity-controlled curation areas.

Wetherill research has continued to the time of this writing. On April 23, 1990, a team of Grand Gulch hikers deciphered an undated Green signature (exhibiting his distinctive twin-lobed "e's") within 12 inches of a dated D. W. Ayres signature near Quail Panel in Step Canyon. Ayres was a member of Green's Durango pastorate who shared his interest in antiquities (First National Bank of Durango 1891). The Ayres signature was dated June 19, 1891. The proximity of the two signatures written with the same material and the known common interests of the two men were reasons to believe they had been together on this expedition. Here was dated evidence of Green's visit to the canyon. It was an exciting discovery. This, the only Green signature found, seemed to confirm his presence in Grand Gulch during the brief period that followed his purchase of the first McLoyd and Graham collection and preceded his departure with it for Chicago. That's exactly what would have been expected.

What took place in the life of Reverend Green after the sale of his collection to the Field? The Rocky Mountain Baptist Association does not list him as a member after 1901 (Lynch 1990). A photo of Charles Henry Green, as he looked in 1902, appears in the glossy pages of Representative Men of Colorado (Figure 6.2). A meticulously-groomed gentleman with a handlebar mustache fixes us with a hypnotic gaze. He has dropped the "Reverend" and become Secretary and General Manager of the Union Accident Stock Co. Is this is the same man? His transformation from pastor to entrepreneur can be followed through listings in the Denver City Directories for 1893–1915, because he did not drop the "Reverend" until established in his business career. His involvement with "stockholders" in the sale of the collection to the Columbian Museum seems to be a preview of this development. Subsequent business deals fared better. By 1911, he was President of the C. H. Green Canning Co., the Plattsville Canning Co., the Ft. Morgan Canning Co., the Colorado Printing Co., and the Western Mortgage & Investment Co. of Brighten, Colorado. His residential address at 812 Marion is in a fashionable district of Denver. Then, in 1915, his name vanished from the directory. Only Mrs. Green's name was listed at their former address. No obituary has been found in Denver papers for this prominent man of business.

The sagas of the C. H. Green and other Grand Gulch collections continue to unfold. As we enter the 1990's and the fifth Columbian Age, well-documented, beautifully-preserved archaeological collections such as Reverend Green's will become increasingly important sources of information on the fascinating culture that produced them.

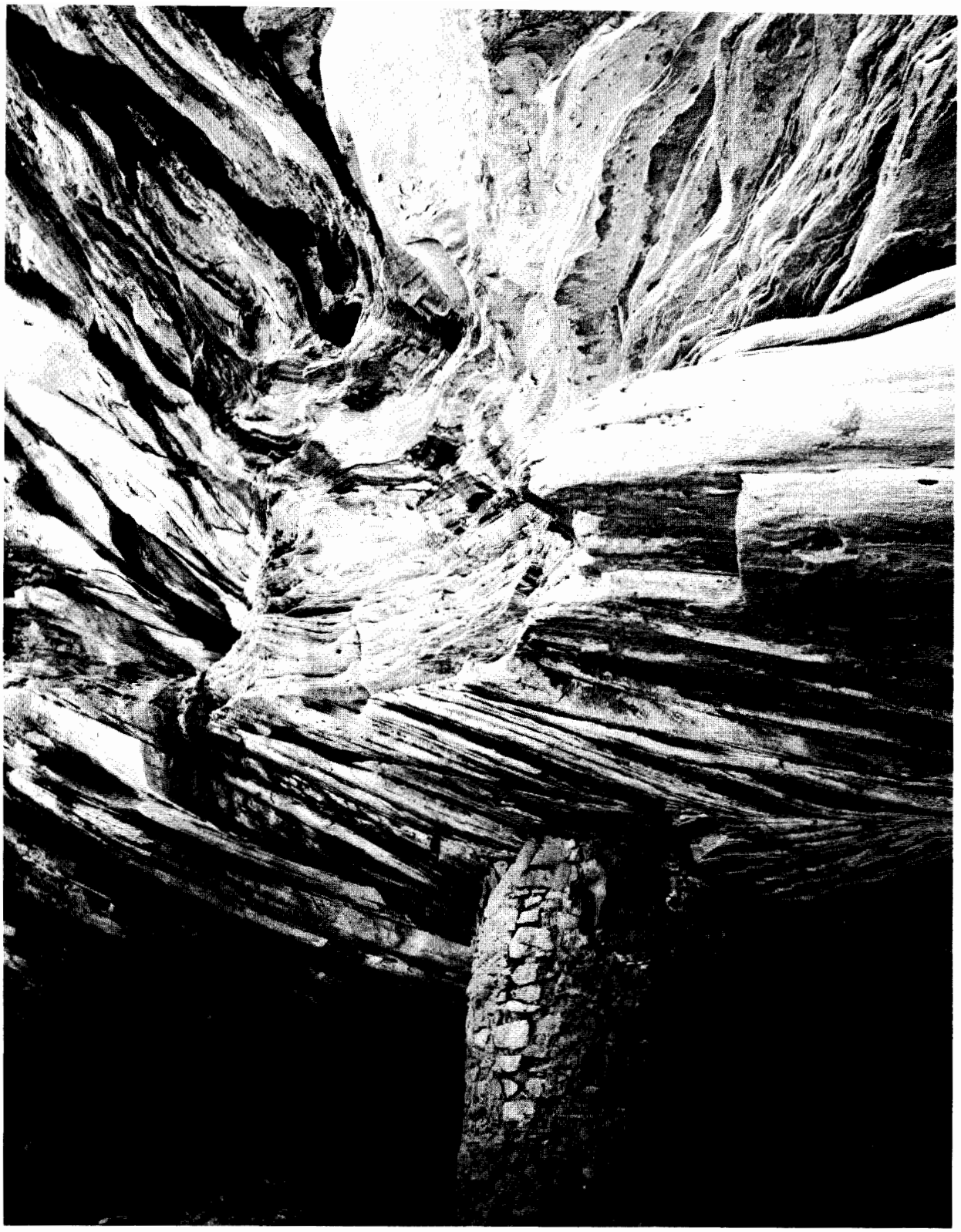


Figure 7.0 Granary at Rincon Ruin, Grand Gulch. (Photograph by Bruce Hucko)

Cave to Cave–Canyon to Canyon: Photographing the Wetherill-Grand Gulch Research Project

Bruce Hucko

Having spent years roaming the realm of the Anasazi in the canyons of Cedar Mesa in southeastern Utah, it was an ironic pleasure to be on an eastbound train in October following their trail once again. Rumbling along at dawn, past picture window views of Iowa cornfields with coffee cups in hand and maps of New York City and Chicago on our laps, we plotted our forays into the cave-like depths of the Chicago Field Museum and the American Museum of Natural History. The Anasazi, our mystic Basketmaker canyon inhabitants, had been removed from their desert home and held captive in spirit and object in the confines of eastern museums.

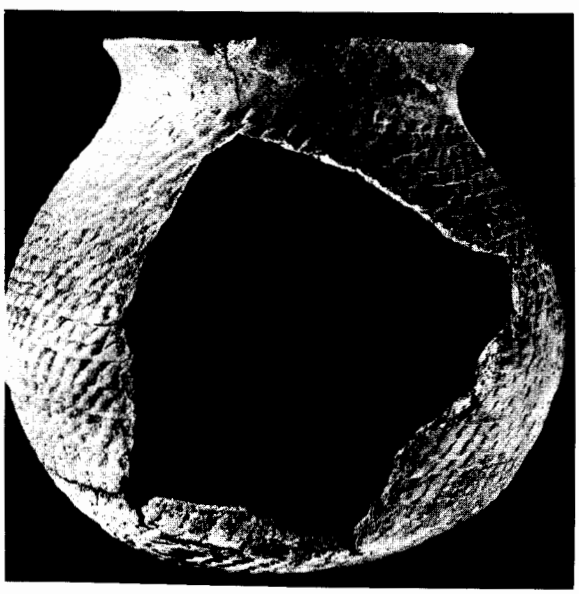


Figure 7.1 This Pueblo III Tusayan-Mesa Verde corrugated pot (H-12311), collected by McLoyd and Graham, is now part of the Kunz Collection at the American Museum of Natural History in New York. (Photograph by Bruce Hucko)

Our mission was to help reassemble a picture puzzle of an ancient people and our modern relationship to them. Historical. Archaeological. Philosophical. Visual. In the end our project reunited spirits held apart,

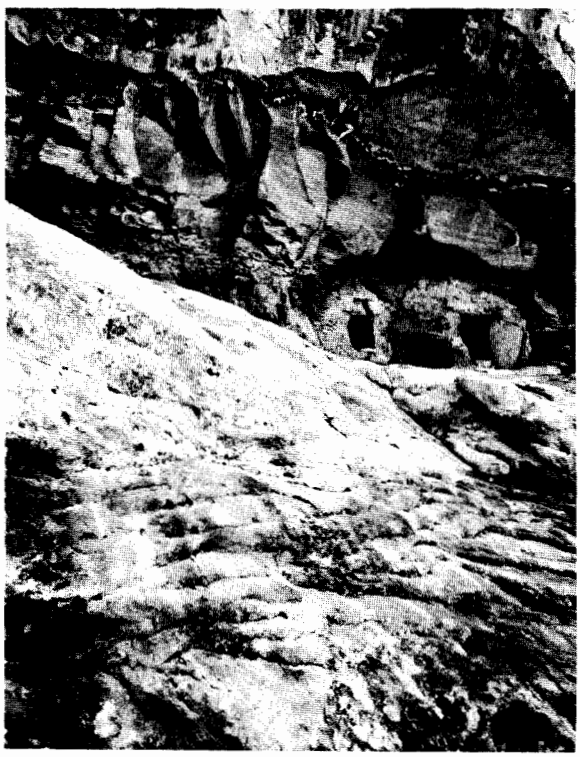


Figure 7.2 Granaries at the junction of Grand Gulch and Bullet (Graham) Canyon. (Photograph by Bruce Hucko)

those of object and homeland, and began to order a story nearly lost in a hundred year shuffle of institutional ambivalence.

By good fortune I came to be involved with the Wetherill–Grand Gulch Project as photographer. Cedar Mesa was my "backyard" for the 10 years (1978–1988) that I lived on the Navajo Reservation in Montezuma Creek, Utah. Many times I had explored the canyons, interested only in rock forms and the experience of hiking. The Anasazi and their remains were secondary to me. Gradually, while photographing the natural poetic motion in stilled rock, I would encounter ruins and rock art that I would incorporate into my composition solely as visual form. The geometry of early man-made structures and drawings complemented and balanced the natural flow of stone and light. Slowly I became curious as to whether the Anasazi held a sense of aesthetic. The placement of structures within alcoves and along ledges often seemed to consider the way "leading lines" of natural stone led one's eye to and from the human-made environment

My appreciative eyes sought background information and so I read much of the academic background on the Anasazi and even looked at National Park Service and Bureau of Land Management reports. They lacked the spirit of the people, past and present, who had made this phenomenon called Anasazi.

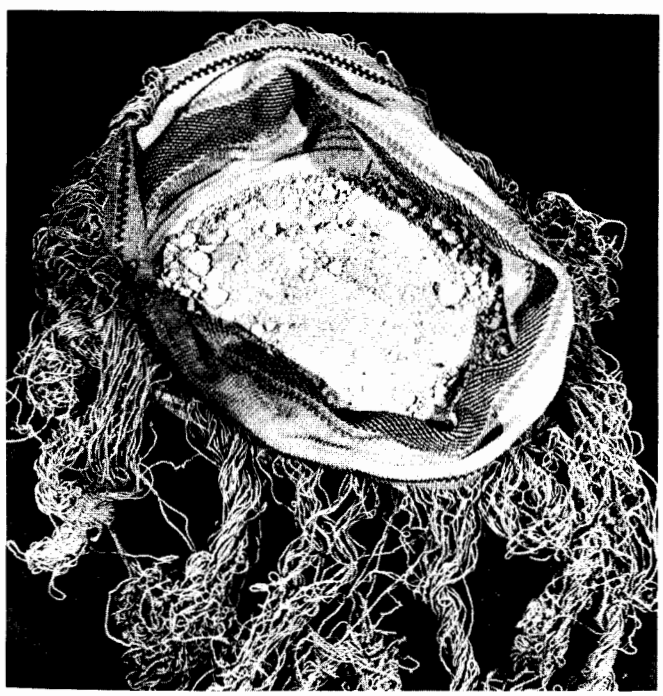


Figure 7.3 Unfinished woven bag of apocynum fiber, filled with cornmeal (H-13476) was collected by the Hyde Exploring Expedition in 1893–94 at Cave 12 (Cut-in-Two Cave) in Grand Gulch. This now resides at the American Museum of Natural History in New York. (Photograph by Bruce Hucko)

This project seems to bring all these elements together. Spirit and academics, research and renewal. This paper is a balance of spirit and photographic technique, of apertures and attitude.

Attitude

There have been many methods developed for the photographing of ancient people's artifacts. There is the scientific white background with attendant color scale and measuring rule, much like the school photographers who systematically measure and shoot kid after kid, class after class, school after school in the same depersonalized way. There is the colored paper backdrop with full non-depth, non-shadow lighting. And in the avant-garde sense there are all kinds of things to be done with lights, glass, reflectors, colored filters, etc. All of these methods have a place in the recording and expression of artifacts, but not here. Another way is to use lights sparingly as in a delicate portrait to create a photograph that speaks of the subject.

I found it important when photographing the Wetherill–Grand Gulch material to allow the object to have as much say in how it was to be photographed as the photographer. Just what does this mean? Primarily I believe it suggests having a different attitude towards the subject than most objects receive. Contemporary Pueblo potters refer

to their clay as an animate entity. "It is alive, and it talks to us," they say knowingly. I have no doubt that the Anasazi, the Basketmaker and late Puebloan peoples recognized the same spirit in all the materials they used to make baskets, sandals, tools, pots, etc. If one looks upon these objects as "living," then one's approach photographically must reflect that. I look upon these objects as beings who are asking for a revealing personal portrait to be made. They each have their own inner spirit and personality. The photographer must communicate with both to do the object aesthetic and documentary justice.

Sounds pretty new agey, right out of Santa Fe, huh? It's not. It is an important foundation on which to add composition, exposure, lighting and the other technical trappings of the photographic medium. There is great importance in having walked in the canyons where these people walked, to have sat on ledges and watched clouds as they may have, and to have stood before rock art, ruins and burial sites created by their activity. This knowledge and experience brings photographing in out-of-context museum settings an appropriate sense of place. Our project was predicated on the desire to see those things, remnants of a once thriving culture, in situ. A fortunate few of us have seen and still know where to find complete objects left in the canyon by the Anasazi. It is the feeling of the canyon and the object's relationship to it that I sought to create in the museum photographs.

APERTURES: THE MUSEUM WORK

I packed for this trip as I would have for camping in the canyon. We were headed into unknown territory. There was a need to be self-sufficient. Clothing and equipment were leaned out to the bare minimum. A flexible mind and an adventurous, investigative attitude shared space with cameras and sweaters. We were headed into canyons of concrete and steel to find temperature controlled caves full of metal shelves containing the missing treasures of the Grand Gulch Basketmaker. Previous canyon experience told us to prepare for all weather. Without prior knowledge of our working area we came ready to do "guerrilla photography," that is, we came equipped with a limited amount of versatile equipment that would allow us to fit into any space and come away with the needed images. Although the museums had allowed us access to the materials, we were told to be as self-sufficient as possible and so we arrived in New York for our first museum encounter with a small army foot locker stuffed with—

- a small three-light 600 watt quartz light kit
- Bogen 3120 tripod with 3047 head
- Olympus OM-PC body
- Tokina 28–70 macro lens and an Olympus 75–150 mm zoom lens
- Hasselblad 500CM body with 80 mm, 120 mm and 150 mm lenses
- Two Hasselblad film backs (for black and white & color) - Hasselblad close up rings (#1 & 3)
- Filters (UV, 812F)
- Film: 100 rolls Kodak EPY-120 film, 20 rolls EPY 35 mm film and 50 rolls Plus-X 120 film
- cloth backdrops in grey, dark grey, black and brown
- Grips, tape, push pins, cleaning supplies, notebook, etc.—and, oh yes, dozens of white gloves!

The greatest challenge at both museums was the work space, which ended up being very small. As visiting researchers we did not have access to the museums' spacious photography departments, although the personnel of each were most helpful. And so we were sequestered in small eight by twelve foot spaces adjacent to or in the curation area. For example, in New York we worked at the end of a corridor containing two rows of triple-

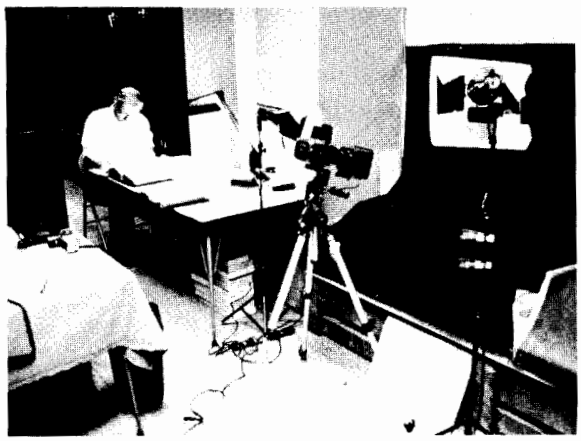


Figure 7.4 Winston Hurst and the makeshift work area / studio at the American Museum of Natural History in New York, October 1988. (Photograph by Bruce Hucko)

walled metal cabinets standing 12 feet high that held the Grand Gulch material and Anasazi belongings from Chaco, Mesa Verde, and other places. The three foot walkways allowed just enough room to retrieve and move objects. A small space at the end of the corridor without cabinets made for a makeshift studio with barely ample room to move the lights around. Our space consisted of a low two foot high, three by six foot wood bench with full height walls bordering it on two sides. Upon this I set the footlocker and other large wood blocks to create a base for supporting objects. In Chicago we were in a slightly larger space adjacent to the curation area. In either space work areas were defined to allow for maximum movement and minimal disturbance to any of the three to four people working there at the same time: I to photograph, Fred Blackburn to locate objects, Winston Hurst and one other team member to record and document. Tables were designated for incoming objects and those to be returned. Fortunately we all liked each other's company, because conditions were cozy!

Figure 7.5 Beautifully preserved Basketmaker seamless twined bag of apocynum fiber with solid red and black stripes (H-12521); collected by McLoyd and Graham in the 1890s, is now part of the Kunz Collection at the American Museum of Natural History, New York. (Photograph by Bruce Hucko)

Museum boards, camera cases and in Chicago even the very pedestals used to display the King Tut exhibit were scrounged and used to create various heights and angles. Pinned to the back wall and draped over the supports were the various neutral colored background cloths. Cloth was chosen over seamless paper or other materials because its visual, textural and color qualities complemented the artifacts. Another small table supported the museum's copy stand used for overhead, 35 mm small object work.

As Fred would locate objects Winston would record them and then set them on a table with their research record sheet for me to add film roll number, exposure and other photo notes to before and after photographing. Carefully handling the objects with gloves, I'd set them on a backdrop after determining color, height and arrangement. The object was then

placed in a manner partially determined by its significance. I relied on input from Fred and Winston to decide which side or angle to show as there was not normally time for more than one arrangement of an object. After artifact placement the camera position, angle, and height were set. Camera and light angles were limited due to the tight corner situations in both museums. But since most were frontal shots, this didn't matter that much.

Behind the camera my primary concern became one of documenting the artifact in an aesthetic way so that the photograph could and would stand as a separate visual image aside from its provenience. The artifact must be rendered clear, yet I felt it must also express qualities of form, power, color, texture, and of the landscape from which it came and the people who made it. To this end it was a gift to be in the same room with Fred and Winston who had studied these objects via paper record and story for years. Each was intimate with many aspects of the Anasazi culture of the Grand Gulch/Cedar Mesa area that he would bring to the discussion of these objects. Such information played an important role in determining many compositions. Listening to them and looking through the viewfinder at the object with visions of the canyon in my mind, there was only one voice to be heard. "Object! Speak!"

The lighting set used was of light weight. Telescopic stands made for easy height adjustment. Lights were then positioned for effect. Each lighting situation was determined by the number of objects, by their need to be documented realistically, by the nature of their surface texture, by their overall shape, and by general and specific aesthetic concerns. Highlighting and enhancing the beautiful natural shapes of the larger objects became paramount. Ollas, baskets, cradle boards, woven bags, vessels, etc., all had an individual inherent beauty to be nurtured by lighting and placement. Objects were often tipped a little to create a sense of life, the feeling that perhaps they'd just been set down in native sand. Textures were enhanced by use of side and fill lighting. The contents of groupings of artifacts was determined solely by their provenience. Artifacts that our research showed to have been found in the earth together as burial associations were photographed together. Their composition or arrangement was determined by me unless there were specific notes as to how objects were found related to each other in the ground and then those notes were used as a starting point for composition. There were no rules as to how to make the work look good except to listen intently to my sense of composition and the object's requirements.

Photography is a visual art form, and it is in the spirit of art that these photographs were made. We always worked for a balance of aesthetic expression and scientific documentation. Composition, for me, is a matter of letting instinctual feelings for line, shape, form, color, balance and other relationships take over to determine initial placements of the object(s) within the viewfinder. These visual concerns were then emphasized by lighting. I used two lights, three to eight feet from the object at various heights and angles to perform most of the shots. Both were covered most of the time with a plastic diffusion screening to soften the effect. Sheets of foam core were used as reflectors, as were the adjacent walls. Only on a few occasions were three lights used. As lighting was employed I kept asking myself, "How would this thing appear if it was in Cave 7 or Site 12-19?" Once again, having the experience of being in the canyon and having seen a few objects in situ, it was easy to imagine. From this I lit by what I now refer to as "cave lighting": trying to recreate the sense of light as it appears in the sites. Usually it is even, open shade with light from one direction, dim, and there is a serious lack of detail on one side of the object. There is a musty odor, sand, stone and a very definite sense that someone is looking at you. Of course, not all of that can translate into a photograph. When lighting in the museum I generally favored one side and angle of an object. It became the strong side due to its archaeological importance or visual appeal and was supplemented by either

reflector or a distant second light on the weak side to ensure shadow detail.

Decisions came quickly in this process. Turn the basket a little here. Move the camera a bit to the side there. Lower one light. Back the other one up a few inches. Check all corners of the composition. Meter. Look again. Shoot. There is nothing like the creative pressure of additional wonder items being piled up behind you, awaiting portraits, to have you abandon the personal judgement of composition and let serendipity and intuition **and** the object take over!

Figure 7.6 Deadman's Black-on-red pottery pitcher with two-ply rope-like ceramic handle. Note how the prehistoric crack is mended with yucca fiber. Originally containing one very large ear of yellow dent corn (shown) and also (not shown) another small ear of corn, shelled yellow corn and mixed beans (pinto bean size). (Number 165241 of the Lang-Ryerson Collection at the Field Museum of Natural History, Chicago. (Photograph by Bruce Hucko)

Fred would cry "Holy sh—!" in amazement when opening a new cabinet and viewing the materials, our materials, left locked away and forgotten.

Winston would then make multiple exclamations of wonder as he carefully turned the object and examined the idiosyncrasies of each, carefully noting them in word and drawing. I had to fend off my desires to keep glancing their way to see each newly rediscovered gem and concentrate on my work that usually lagged behind what they were viewing by three to six objects. As it was, I was seeing compositions in my head for the next several objects. I believe our creative work frenzy was fueled directly by energy long stored in the objects.

More than once, but once in Chicago I had just finished doing some close-up work on the copy stand of a red Tusayan pot with a corn cob inside. I had nowhere to put it while I worked on the next object, so I set it on a crumpled background cloth lying on the area where I photographed larger objects. I then went back to work at the copy stand. In the process of lighting I turned one of its four adjustable lights around without turning it off. I made my exposures and walked over to turn the room lights back on to put things away. A quick glance at the adjacent table revealed that the copy stand light that was turned away was shining on the Tusayan pot in a very beautiful way. The pot leaned slightly as I had been unconcerned with its angle other than being stable. It was a perfect position. Phototropism? I set the Hasselblad up and photographed it in color and black and white by adding a quartz light in place of the flood light and using a little reflector. The angle of the light. The angle of the pot with corn. All were just right, as if an ancient Anasazi maiden had just set it down while she checked on her children. "Picture me!" it had exclaimed. I had listened.

Exposure was determined using a grey card and a Pentax 1° spot meter. After establishing the grey card I read all areas of the composition to compare their readings in

order to determine overall contrast. Lights were then moved, added, softened or deleted to produce a lighting situation of not more than three stops difference between highlight and shadow for color and five stops for black and white (Expansion or Plus 1 and Plus 2 developments were used for black and white instead of resetting lights for color and black and white work). Exposures were bracketed up to 1 1/2 stops on the high (more exposure/ lighter image) side in 1/2 stop increments and 1/2–1 stop on the low (less exposure) side. Exposure has a profound effect on color, and so bracketing was employed to have those variations recorded; this was a once in a lifetime experience to which there would be no return! Aperture settings ranged from 5.6 to 22, depending on desired focus effect. Most of the time they were at 11 or 16 with corresponding shutter speeds ranging from 1/8 to 30 seconds. This was due to the need to use low wattage lights with these delicate objects, creating a real sharpness problem since both museum buildings shook! We were underground in New York and could occasionally see the vibrational effect of the subways and major heat/cooling vents in the tripod stem. A large heat/cooling vent ran vertically through our work space in Chicago causing the three inch thick concrete floor to vibrate. We were able to curb this effect (fingers permanently crossed!) with foam under the tripod legs and sandbags weighing the tripod down. The best solution would have been to use strobe lights, but that outlet was not immediately available to us and it is a slower method requiring the use of much Polaroid to see lighting effects.

At all times museum policies on handling and photography were followed. Film was processed overnight in both cities, allowing us to sometimes reshoot due to mistakes or wanting another composition.

Reflections

After day-long sessions in the museum, usually beginning at sunrise and ending with us getting a brief glimpse of sunset, we would walk the towns looking for other forms of "cultural" education, food and entertainment, before retiring to our rooms for evening research sessions. Fixed as we were on the Anasazi, it was easy to confuse where we were.

Leaving the American Museum of Natural History one night and walking Broadway back to our flat, we came upon a scene reminiscent of an earlier age. It is purely speculative, but there on the sidewalk beneath the sun-rimmed deep city walls and amidst the refuse of a dying culture, a ragged man of undeterminable descent sharpened a knife on the curb. Surrounded by the "rock art" graffiti of his age, he steadily honed the blade, oblivious to passersby. Was this act done for protection, a weapon, or for hunting? Would there be a victim or merely a full belly for the first time in days? Only once did he look up and there, in his bloodshot eyes, one could see the longing and despair that may have come to the Anasazi in the waning years of their time on Cedar Mesa. I had to shake my head to gather my senses and to focus on old brownstones and sirens where for an instant there had been desert varnished walls and the canyon wren.

The city, especially New York, offers a cold and harsh analogy for what may have met the Anasazi. There is tension. People are afraid. No one talks to strangers. Subsistence food and shelter are scarce. People beg and eat from garbage piles. Buildings deteriorate along with spirit. Yet through it all one street musician can be heard singing his song, the Kokopelli of Manhattan.

There were lighter musings in this land of parallels as well. Again in New York, for several nights we would return to Miss Pringle's Parlor for late night cheesecake and tea. The dessert choices were endless, necessitating repeat visits. And I wondered, what did the Anasazi do for dessert? What was their Miss Pringle's?

During our stay in New York, I flew to Seattle for my sister's wedding. My flight out was at night, but the return was in

daylight. As we ascended over the Cascades, I looked down upon hillside after hillside of slopes clear-cut for their timber. Traversed back and forth by logging roads, the hills were deeply scarred and patterned. All I could think of were pottery designs. Beginning there, the entire flight was an aerial Anasazi visual feast of basket weaves made of farmland plowing, river ways drawn out like rock art, and cloud patterns resembling rock forms. I wondered if they had ever flown?

These distant musings scattered throughout our experience served to bind me further to our work. In the aerial design of our abuse of the land, I saw another pattern, that of the continuum of human expression upon the land. We had come to the eastern shore of our continent in search of the Anasazi. In both distance and time we were a long way from our and their home, yet that distance now seemed not so far.

Apertures: the Field Work

Hiking. Hiking and sweat. In this country that the Anasazi, roamed physical effort marks the difference between death and survival. It also marks the difference between commonly looking and actively seeing. I'm a believer in earning one's keep. Photographically that means giving back to the country via conservation and preservation work and spending time in it. Walking through the canyons in all seasons offers insights that no one standing on the rim can imagine. Such a visual and physical communion opens the eyes to new ways of seeing. Past the labels, recorded documents and post card shots it allows the land to make its own portrait through the photographer. Is this evident in the work? Perhaps not, but the attitude is important.

Field photography is accomplished by spending multiple day trips in chosen sections of the canyon. Waiting for optimal light doesn't allow for a lot of daily miles, but that's not the point. Certain sites important to our work are revisited in different seasons to capture nuances of lighting. Others, protected by alcoves, are photographable almost any time.

I carry everything on my back, "photopelli-style," although a llama will soon be employed for longer trips because I carry a bit of gear. A four-day pack generally contains (ugh!)—

- Toyo 4x5 Field View Camera
- 90 mm and 210 mm Caltar lenses in protective wraps
- Filters: UV, 81A, 8-Yellow (black and white), 15-Orange (black and white)
- Dark Cloth
- Pentax 1° Spot Meter
- Bogen 3120 tripod with 3047 head
- 12–20 film holders
- and (Oh yeah!) film: for 4 x 5, two 50 sheet boxes each of Fujichrome 100 and Velvia, plus one 50 sheet box each of Ilford HP5 and FP4; for 35 mm, 10–15 rolls of Fujichrome or Velvia.
- 3 empty boxes for exposed film
- Changing tent
- Olympus OM-PC 35mm camera body
- Olympus OM-2 camera body
- Tokina 28-70mm lens (macro)
- Olympus 75-150mm zoom lens
- Olympus 200mm lens
- Vivitar 2X Auto/Macro Teleconverter
- Filters: 81A, Polarizer, Graduated Neutral Density (Cokin) - Cable release
- lens cleaner and brush
- extra batteries
- Vivitar 285 flash

- Ziploc baggies
- Sleeping bag and pad
- MSR stove and fuel bottle
- 2-one liter water bottles
- Water filter
- Cook kit
- 100' Nylon webbing (for getting in and out of places) - ground cloth
- cagoule
- personal items
- clothes (if there's room!)
- food (if there's room!)
- headlamp and candles
- journal

Don't even ask how much it weighs! I don't want to know and I'd only respond Zen-like and say it weighs what it takes to get the job done. Field scenes are determined by either historic or aesthetic reasons. In many cases we know sites to be photographed because research has determined that a particular site was part of the early explorations. In these situations historic field notes usually reveal some particular aspect about the site important to our work that I am then free to interpret. At other times we have historic photographs to be re-photographed. At all times when working the canyon, if there is a scene that appears interesting I will photograph it for both documentary and aesthetic reasons.

When photographing with color in large format or 35 mm, I usually look for a scene or site entirely lit by reflected light in open shade. Modern color films have a workable range of about three stops from highlight to shadow detail that can be recorded on film and then transferred to a print. I tend to expose film for eventual printing. Open shade/reflected light also allows for greater color consistency. The light is even and glowing. If I am looking at a ruin, I try to emphasize its architecture and how it "fits" into the natural environment. A shot showing "location" incorporates the surrounding environment of rock, stain and vegetation. Details are usually photographed by viewing them as geometric forms. When I choose to double shoot in black and white, film is exposed and developed using the Zone System adapted to my personal tastes. An expansion development of one or two stops using Plus-X film is usually required in these situations to achieve a full tonal print. Tri-X film is used in black and white scenes involving direct sun and shadow because of its ability to undergo contracted development in order to reduce contrast and render both shadow and highlight detail. Color film is exposed by metering highlight values with a spot meter where detail is desired and then placing that reading a stop or two above middle grey on a zone scale. Compensation is made for bellows length, and I always bracket whether large or small format. Bracketing is especially needed on the large format camera due to the inconsistencies of the film. I like the colors and warmth that Fujichrome offers, especially since I am often shooting in very cold cave lighting. I reserve Kodachrome (35 mm) for sunlight canyon scenes, as it seems too flat for most site work. When conversation gets to film choice and processing/printing techniques, this photographer changes the subject because these choices are subjective and the necessary discussion would be too exhaustive for a paper like this. If one is competent at making technically good negatives, transparencies, and prints, then the discussion is moot anyhow. It should be on content, composition and the experience. Technically, there is little else to be said. I like Minor White's response to the question: "The camera was faithfully used."

Figure 7.7 Replication of historic photograph of the Green Mask Site in Grand Gulch. (Photograph by Bruce Hucko)

Beyond the Objects

The photographic aspects of the Wetherill-Grand Gulch Research Project are many and interrelated. Centered around the new photographs of the objects are:

- Historic Photos—Fred Blackburn is assembling a grouping of historic photos that help identify the various persons and sites involved. Garnered from collections made by Lang, Wetherill, Green and others, these images give the historic writing a face and sense of human place. Without them we could not have located specific sites in the canyon, some of which still remain a mystery. These are printed for us by the supplying museums.

- Historic Site Photo Replication (in canyons) —Cave 7 and other sites might not have been found without the aid of historic photographs (see Hurst and Turner, this volume). When these places can be found in the field they are rephotographed from the same position and composition so that physical changes in a site can be noted. From this work I've come to feel that these early photographers were more documentary and less aesthetically oriented than the modern work. Of course, photography had just emerged and most

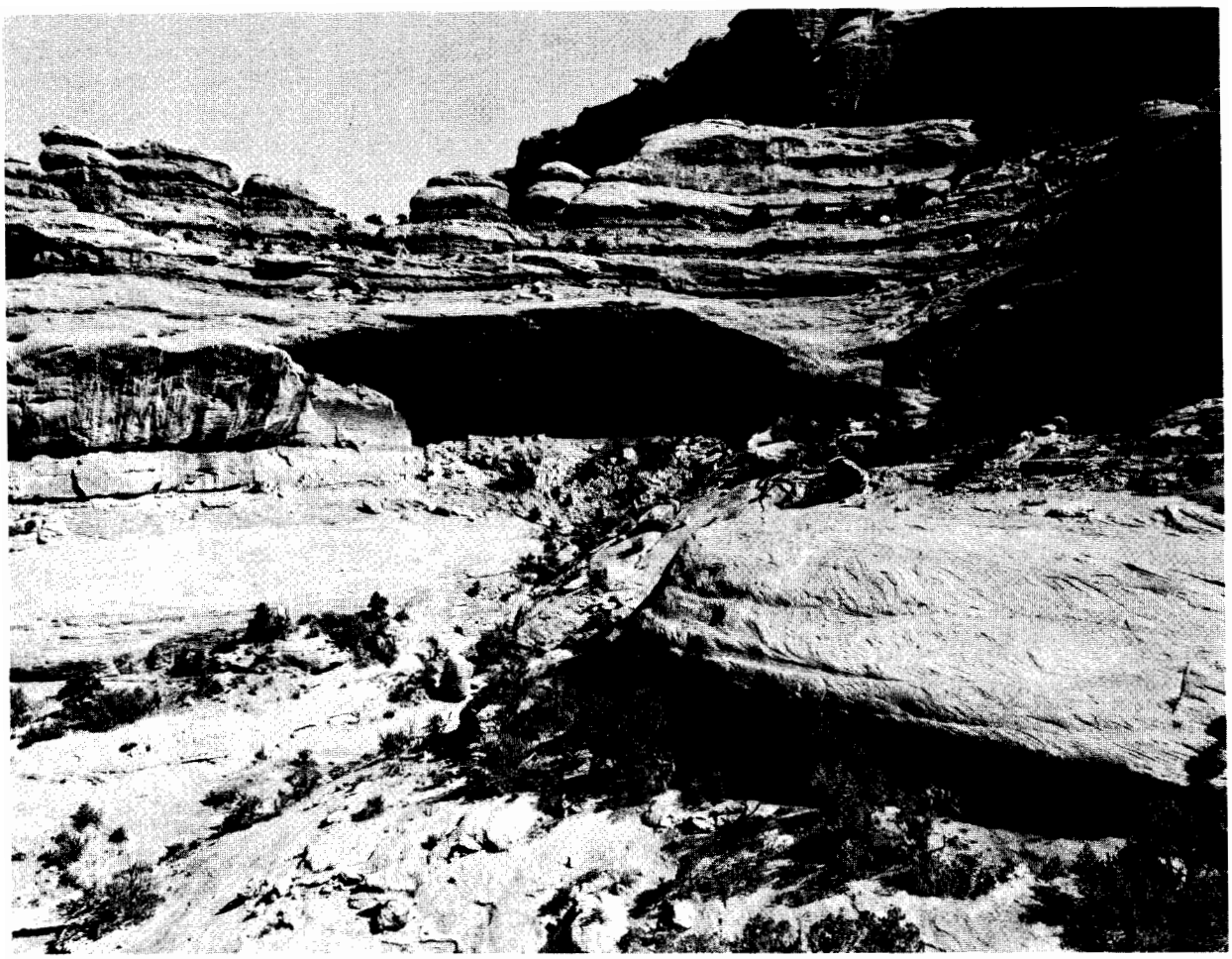


Figure 7.8 Historic photograph replication of the Perfect Kiva site in Grand Gulch. (Photograph by Bruce Hucko)

camera owners were still awed at the process of replicating objects and were not concerned with personal expression. Having stood where they did, I am fairly certain that we may have shared the same feeling of wonder at the places where the photographs were made. The original images were made on 2-1/4 inch by 3-1/4 inch, 4 by 5 inch and larger glass plates and lantern slides. All are black and white. Re-photographs are all done in black and white. In some cases color versions are also made. All re-photos are made on a 4 x 5 view camera with lenses selected to approximately equal those used for the historic work.

- Signature Documentation (photos)— Without early explorers leaving their signatures scribed on the walls by carving or writing in bullet lead, many of the associations known to us now could not have been made. In most cases the signatures are best recorded by drawing (see Blackburn,this volume), since they are generally faint or obscure. Extreme low angle lighting and large negatives/ transparencies are needed to "pull" the signature off the wall. These are almost always done in color and using the view camera because the signatures are usually faint and the areas in which we find them are pretty much monochromatic. Unless there is direct sun offering, contrast black

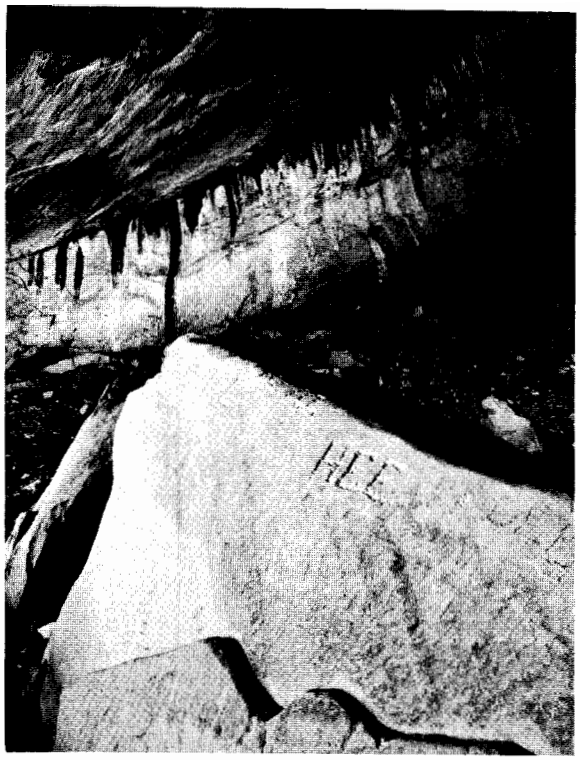


Figure 7.9 HEE (Hyde Exploring Expedition) inscription from the 1893–94 period in Giant's (Fishmouth) Cave, Comb Ridge. (Photograph by Bruce Hucko)

and white versions look flat and muddy. Details of signatures are usually lost in the grain of small format film.

- Site Documentation—In addition to historic photo rephotography, particular sites closely relevant to the project are documented aesthetically and straight. These include burial, building and other sites of interest. With utmost regard for lighting and composition, these photographs are made to identify particular aspects of a site important to our research. Often it's a matter of recording a pothunter's hole, vandalized sites and "over alls" of a site. These are done in both color and black and white using the view camera.

- Canyon Portrait—The early people lived in a special place of rock and sky. Like the object photographs, a canyon portrait series is under way to complement the object photos. Left to freely express the canyon's personalities as revealed to me, I approach this part of the project with the same thoughts as I do the objects —Let the canyon speak! Both formats are used here for a variety of future purposes, including prints and slide shows.

Respect for the landscape as a whole, and specifically to the developed relationship of the Anasazi to the landscape, is at the core of this work. It decrees a way of working that will not do damage to the archaeological resource. In all cases, great care was taken in moving about the sites. Middens and other surface sites were avoided, rock art and inscriptions were not touched, and ruin walls never felt human weight. Objects and whole sites were photographed as found. Captions in this paper have been made as sparse as possible while still offering scientific information. Ethical questions and treatments abound when considering revealing Anasazi site or artifact information. I hope this collection of papers will sensitize the novice and remind the professional of the great importance of this archaeological resource.

Closing

We hike in a living context. Away from here the objects and any thoughts of the Anasazi are out of context, contrived. Having been in Chicago and New York working with the collections, how painfully wrong it feels to know that these objects and the remains of the people have been separated from each other and the land all these years! As a Pueblo friend suggested, "How awful those people (spirits) must be, having to look all over the place for their things still in this life, keeping them here, and not being able to move on to what is next."

To know and hike this place is more important to me now. The artifacts back East are naked without the cultural clothing, the stories, contexts and proveniences to wrap them in. In the mind's eye I place each and every object seen and photographed in the

museums on ledges and in doorways of ancient ruins as I trek the canyon looking for the next site. This is a good occupation for a lone wanderer who is not destination bound, for one cannot stay on the trail and expect to see anything. Especially since I am looking for out-of-the-way places, little alcoves hidden in old glass plate negatives and sporadic journal entries.

After returning from one of the museum trips, several of us went hiking in upper Butler Wash. Allowing the others a little lead I stood on the bank and yelled, "Hey! Anasazi! We found your stuff!" I proceeded to call out museum names and addresses, telephone numbers and the names of various curators. They may get a call one of these days. The spirit part of this cycle is completed in calling back to the canyon.

Figure 7.10 Unnamed site near Polly's Island in Grand Gulch. (Photograph by Bruce Hucko)

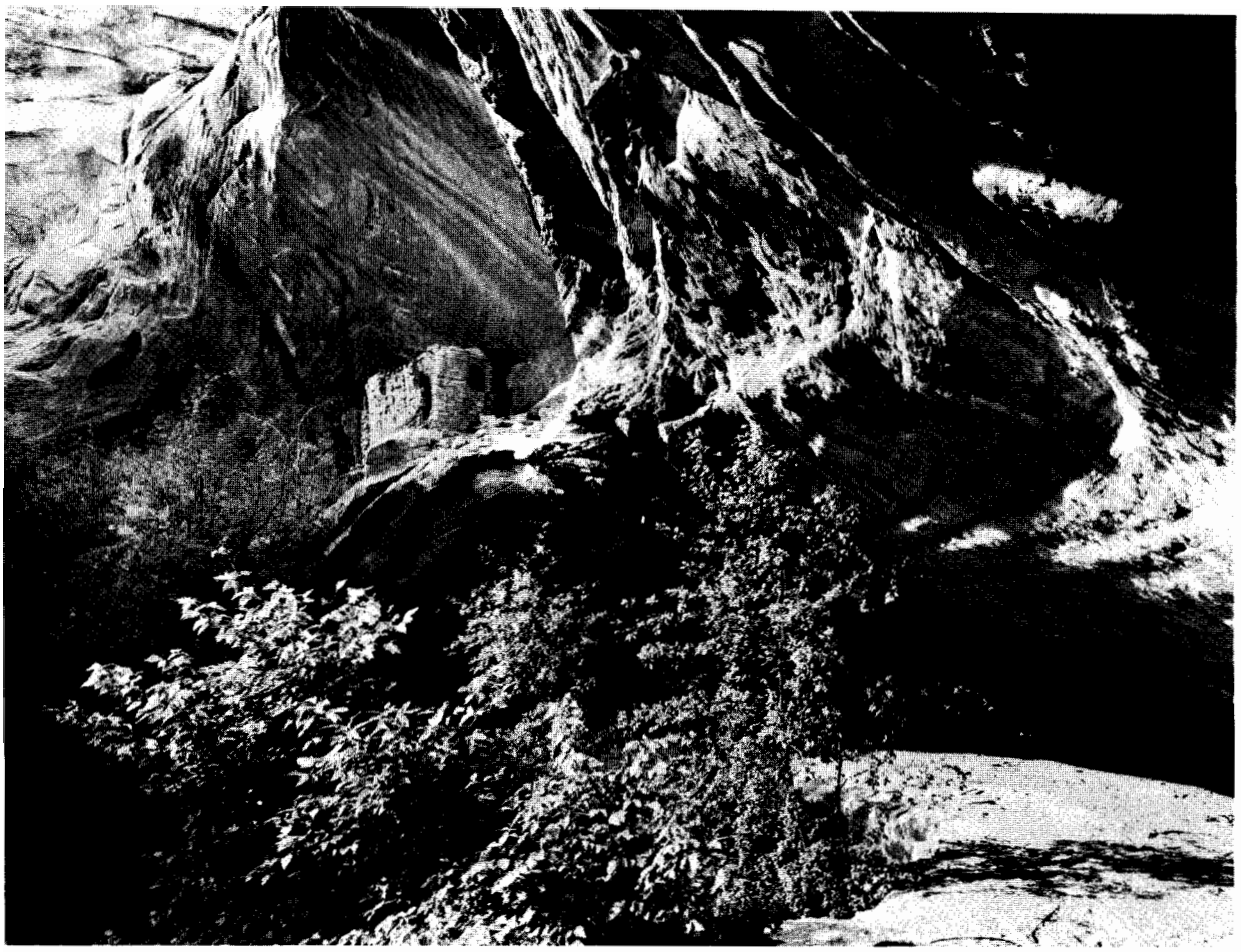


Figure 8.0 During the Hyde Exploring Expedition in December 1893, Richard Wetherill described this site as "small house 200 yards south of house number 7." (Photograph by Bruce Hucko)

Rediscovering the "Great Discovery:" Wetherill's First Cave 7 and its Record of Basketmaker Violence

Winston B. Hurst & *Christy G. Turner II*

Invited paper presented at the Anasazi Basketmaker Symposium, Wetherill–Grand Gulch Research Project, Blanding, Utah, May 26–28, 1990

This paper is presented with apologies to Richard Wetherill, who would probably have stated the following mild rebuke more forcefully, had he anticipated this paper:

I meant for you to use my notes and photos and take from them, whatever you wished to use. I did not understand that you would get out a dry scientific paper. (Wetherill 1896e)

Introduction

During the early 1890s, interest in indigenous American antiquities swelled toward the upcoming Chicago Columbian Exhibition, celebrating the fourth centennial of Columbus's landfall in America. That interest fired commercial and institutional artifact collecting expeditions that left large portions of America's archaeological record in tatters. Inevitably, in so new a field of exploration, it also produced some important archaeological discoveries. One such discovery was the landmark recognition that the well publicized "Cliff Dwellers" of the Four Corners had been preceded in the area by an even more ancient people, who came to be called "Basketmakers."

The Basketmaker discovery was made in southeastern Utah by Richard Wetherill and the other members of the Hyde Exploring Expedition in a cave which they called "Cave 7," late in the fall of 1893. Their find is of great interest, not only because it demonstrated the existence of an earlier culture underlying the cliff dweller remains, but also because it produced the largest series of Basketmaker skeletal remains yet recovered from a single site and revealed evidence of a prehistoric massacre.

Despite its archaeological and historical importance, Cave 7 and the collections taken from it have been largely ignored by archaeologists. Prior to the late summer and fall of 1990, the cave had never been systematically re-examined, and even its location and identity had been forgotten. Any 1893 plan maps or field notes that may have existed in addition to the sketchy comments in Wetherill's artifact field catalog have disappeared, while the surviving notes have rarely been thoroughly studied.

This paper is our attempt to remedy that situation to a limited extent by assembling and examining available information on Cave 7. Documentary and archival information is supplemented by first-hand data from Hurst's cursory examination of most of the artifacts from the collection and Turner's examination of a significant sample of the skeletal remains. Using these data, we will identify the location of the cave, provide some insights into the skeletal and artifactual assemblages, and draw some inferences regarding the circumstances under which the Basketmaker remains were buried in the cave.

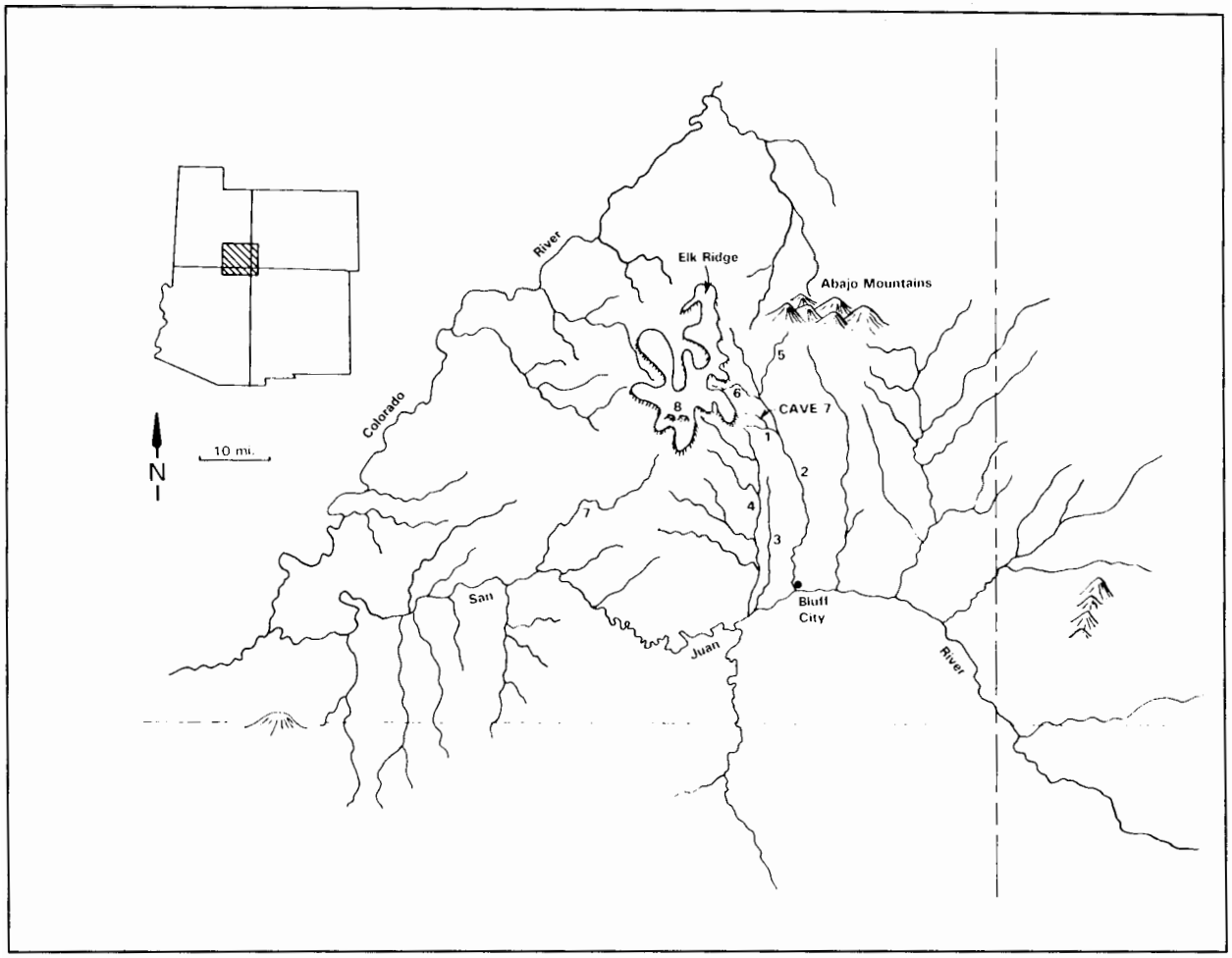


Figure 8.1 Regional map of southeastern Utah: 1–First Valley (Whiskers Draw and North Fork); 2–Cottonwood Wash; 3–Butler Wash; 4–Comb Wash; 5–Allen Canyon; 6–Hammond Canyon; 7–Grand Gulch; and 8–Bears Ears.

The "Great Discovery"

The romantic and mysterious cliff dwellings of the Four Corners figured prominently in the popular American imagination of the 1890s. The Wetherill family of Mancos, Colorado, had only recently publicized the discovery of the greatest of all cliff dwellings, Cliff Palace in Mesa Verde, and there was a widespread sense that other great discoveries could be made, to the glory and possible enrichment of the discoverer. Inspired by the financial success of artifact collecting ventures in the Mesa Verde, Charles McLoyd and C. C. Graham turned their attention to the remote canyons farther west in southeastern Utah. During the winter of 1890–91, they rummaged numerous caves in the Grand Gulch region (Figure 8.1), removing over 20,000 artifacts (Moorehead 1892; Moseley 1966). Many of those artifacts, notably different from those of the Colorado cliff dwellings, found their way into the exhibits of the 1893 Columbian Exposition in Chicago (Phillips, this volume; Hayes this volume; Moseley 1966).

By the fall of 1893, the Wetherills had earned a substantial reputation for their exploration of Indian ruins in the Mesa Verde area. Their "Alamo" ranch in Mancos, Colorado, had become a private museum and guest ranch for travelers and scientists.

Richard had spent part of the previous summer at the Columbian Exposition, where he had been able to study some of the McLoyd-Graham materials. While in Chicago, he convinced B. Talbot, B. Hyde and his brother Frederick E. Hyde to dip into their inheritance from the Babbit soap fortune and finance a collecting expedition into southeastern Utah. The project came to be known as the "Hyde Exploring Expedition," with Richard Wetherill at the lead. The party of Wetherill brothers, other hired hands, and assorted pack and saddle animals entered the Utah canyons in early December (McNitt 1966:53–64).

On December 17, Wetherill dashed off a hurried and excited letter to B. T. B. Hyde, giving as his location "First Valley Cottonwood Creek 30 miles north Bluff City." In his letter is the first clear recognition of the stratigraphic and temporal relationship of Basketmaker remains (as yet unnamed) to those of the later cliff dwellers, and the evidence of their violent deaths:

Our success has surpassed all expectation... In the cave we are now working we have taken 28 skeletons and two more in sight and curious to tell and a thing that will surprise the archaeologists of the country is the fact of our finding them at a depth of 5 and 6 feet in a cave in which there are cliff dwellings and we find the bodies under the ruins, three feet below any cliff dweller sign. They are a different race from anything I have ever seen. They had feather cloth and baskets, no pottery. Six of the bodies had stone spear heads in them, and what I consider the most valuable find in the History of America is the finding in one joint of the backbone of skeleton 103 a spear point of stone sticking into the bone at least an inch. The same thing occurs with skeleton 128 but it seems this one did not die from the wound as the cut in the outside of the bone has partially healed. The whole thing is truly wonderful. We have 5 pipes that were found with the bodies. One has an arrow shot through the breast bone. Another has a broken back healed in a very curious manner. I am satisfied to work here for a couple of weeks... (R. Wetherill 1893b)

Two weeks later, Richard reported the find more completely in a letter to his Swedish scientist friend, the Baron Gustav Nordenskiold:

We have now taken 90 skeletons from one cave. The heads are different from the cliff dweller. We find them two feet (2) below the lowest sign of the Cliff Dweller thus [provides a schematic stratigraphic profile, reproduced in Figure 8.4a]. *Several skeletons were 3 feet under the lower foundation of the Cliff House. We have back bones with stone spear points still sticking in them and several breast bones shot through with arrows and many broken Heads and arms. With these we have not less than (70) seventy stone spear heads. We have only worked one cave and there is* [sic] *hundreds of them here...*(Wetherill 1893d; bracketed comment added)

A still more complete description of the find, written after excavation was complete, was published the following year in *The Archaeologist* magazine.

In the region of Southern Utah,... we have recently made interesting discoveries, which would tend to prove the existence of an earlier tribe of Indians than those formerly occupying the cliff houses.

One special cliff house, beneath which we found these evidences of early occupation, consists of two rooms on the ground floor, and two more on the ledge above. The walls are only a few inches in thickness, and the construction is inferior to those found in the Mancos Canon. We found nothing in the rooms. The relics uncovered in the loose debris on the outside were readily distinguished from the relics of the earlier tribe.

Two feet below the lowest remains of the Cliff Dwellers, we have found remains of quite a different tribe.

This difference is determined by the shape of the head...

We have taken ninety-two skeletons from the cave at depths varying from four and a half to seven feet, including three cliff-dwellers lying at a depth of from two to three feet. In the central portion of the cave the skeletons were lying close enough to touch each other.

The first excavation penetrated three feet of loose debris and waste from the still existing cliff houses. Their foundation walls are not less than three feet above many of the skeletons. The lower four feet in which we have worked is clean, yellow sand, except where discolored by burials. There are a few indications that the bodies found were buried in wrappings of feather, rabbit fur and buckskin; near them are baskets, spear points, bone awls and ornaments, but no pottery.

The number of skeletons found at one level and in one place would suggest a sudden and violent destruction of a community by battle or massacre. Many of the skulls are broken, as well as the ribs, and the bones of the arms and legs. In the backbones of two different skeletons we found the ends of spear points firmly imbedded; in one case the break in the bone was partially healed, showing that the person must have lived for some time after the wound was inflicted.

...We found one interesting group, a mother with an infant on each arm, and another lying on her breast with its head under her chin. There are warriors, 'mighty men of valor,' with ten or twelve spear points lying near; younger men with bone tools near them, and the unwarlike counsellors or priests, with decaying baskets originally filled with food, or possibly tools of trade. These latter have left little trace save a dark stain in the sand. (H. 1894; probably written largely by Wetherill and submitted by B. T. B. Hyde.)

Finally, Richard described the find again in 1896, in a letter to Dr. T. Mitchell Prudden of New York City:

The first cave in which these remains were found was in the Cottonwood. A cliff house was there and had previously been explored. By digging through about two feet of Cliff Dweller debris we came upon a layer of sand about two feet in thickness. This varied somewhat in parts of the cave. This layer corresponds with the dirt found in other caves upon which the cliff buildings are made.

Ninety-seven skeletons were taken from this cave. Many of the men showed evidences of having been killed, as spearpoints were found between the ribs and arrowpoints in the backbones. One case where the hip bones were pinned together with a huge obsidian spearpoint shows that no small amount of force was used to bury a point of that size into two inches of bone.

[He then proceeds to describe the famous "cut-in-two" mummy and other materials which we know from his catalog are from Grand Gulch, without indicating their different provenience. The following statement, referring to Grand Gulch, probably describes the impact of the diggers on the caves in the Cottonwood area and elsewhere.]

These holes were filled with debris and on top were the walls of the cliff house, which we had to remove to get into the holes, which were found by removing everything that was moveable. (R. Wetherill 1896e; bracketed comment added)

Although these descriptions vary somewhat in the total number of burials reported and none of the written accounts refers specifically to the cave by its number, they match the information in Wetherill's 1893–1894 field artifact catalog (Anonymous nda) regarding "Cave 7," from which was taken the largest collection of the expedition. The catalog lists 303 entries from Cave 7, including 89 "skeletons," some multiple. For most items, the catalog provides us with information as to the section of the cave and the depth below surface from which the find was taken. Sporadic, sketchy and sometimes contradictory information is provided on the orientation of burials, artifact associations,

and the dimensions and orientation of the cave. Catalog descriptions of the specific burials, their condition, associated artifacts and depths can be matched with Wetherill's written descriptions quoted above.

In addition to the above information from Richard Wetherill, we have two accounts from his brother John. In an undated letter from John to Al Wetherill, another brother, we read:

I remember the arrow points we found in the vertebra in Hamond [sic] *with about 90 skeletons we dug out after you followed the dark streak in the sand about four feet below the two feet of cliff house rubbish that covered it. Also the many pipes and atlatl points* (J. Wetherill nd).

Earl H. Morris published a different version of John's account in 1939:

The first recognition of a Southwestern culture without pottery and older than that of the familiar cliff-dweller Pueblo was made by Richard Wetherill. The incidents were told to me by John Wetherill as follows: In 1893 he and his brothers were digging in a cave in Butler Wash, southeastern Utah, which contained an average of 60 cm. of cliff-house refuse. One day Richard, in cleaning the bottom of the trench in which he was at work, noticed a discoloration of the sand that formed the natural floor of the cave. He dug down into the darkened earth and found that it filled a jug-shaped grave pit. In all, the cave yielded ninety bodies similarly interred. The skulls were all undeformed. Beautifully fashioned stone pipes were present in many of the graves, and in most cases a handful of beads had been crowded into the mouth of each corpse. Not even a fragment of pottery accompanied the burials, but instead there were decayed baskets in profusion (Morris 1939:11–12).

Such inconsistencies regarding the location of the find have resulted in a proliferation of contradictory information regarding the cave's location in the published literature. This problem is discussed further below.

After the "great find" (Wetherill 1894a:2) in Cave 7, the remainder of the expedition focused in large part on the quest for additional evidence of the Basketmaker culture in the caves of Butler Wash, Allen Canyon, Grand Gulch and other canyons (Figure 8.1). By February of 1894, Wetherill was referring to the early culture as the "Cave Dwellers" or "Basket People" and had become familiar with a broader range of their material culture than he had seen in Cottonwood (Wetherill 1894a:1–2). Hyde seems to have been the first to call them "basket makers," a name which Wetherill didn't like (Wetherill 1894e). Hyde's term stuck, however, and was being used by Wetherill by April of that year (R. Wetherill 1894g). It later appeared in printed articles by Prudden (1897) and Pepper (1902) reporting the Wetherills' discovery. Both the existence of the Basket Maker culture and its name (in a hyphenated variation, "Basket-maker") finally achieved the formal blessing of the academic archaeological community as a result of the landmark efforts of S. J. Guernsey and A. V. Kidder in the Kayenta district some twenty years later (Kidder and Guernsey 1919; Guernsey and Kidder 1921; Nusbaum 1922). Charles A. Amsden coined the final evolution of the name during the late 1940s, echoing Wetherill's reservations:

I prefer this form, Basketmaker, as the simplest version of an awkward and essentially meaningless term, for most of the world's peoples are makers of baskets (Amsden 1949:44).

The term "Basketmaker" still holds a prominent place in the lexicon of Southwest prehistory, and is used throughout this paper.

Because the Cave 7 discovery was documented (though less rigorously than we, with the advantage of hindsight, would like) and reported in published articles, it constitutes a major milestone in the study of Native American prehistory. It added significantly to the growing evidence against a persistent Euroamerican assumption that

Indian cultures lacked ancient roots in the Americas and demonstrated the need for careful attention to stratigraphy in archaeological excavations. It should have alerted us to the reality that prehistoric southwestern populations shared a universal human talent for cruelty and violence, but that insight was quickly submerged by an interesting need in the Euroamerican psyche to perceive Puebloan peoples as being more noble, humanistic and peacefully inclined than other human populations.

The Location of Cave 7

Different writers have variously placed the site of Wetherill's discovery (though never referring specifically to "Cave 7") in Grand Gulch (Kidder 1962:241; Amsden 1949:41), Butler Wash (Morris 1939:11–12; Brew 1946:20; Wormington 1947:27; Tobin 1947:110), Cottonwood Wash/Canyon (Nickens 1982:50), and "Hamond" (Hammond) Canyon (J. Wetherill 1930a). Because of the cave's historical and archaeological importance and the confusion in the published literature regarding its location, we here address this question in some detail.

We may dismiss the Grand Gulch ascriptions as generic and uncritical references to the whole season's work, which focused mainly on that drainage. The Butler Wash and Hammond Canyon claims are a bit more troublesome, however, as they make specific reference to what can only be Cave 7. Jesse Nusbaum, for example, proclaimed the site of the Basketmaker discovery to be the well-known large cave in Butler Wash which the Illustrated American Exploring Expedition had visited in 1892 and named "Giants Cave" (Gunckel 1892c:562), and to which the Geologist Herbert Gregory (1938) later gave its most commonly used name, "Fishmouth Cave":

En route to Grand Gulch in the fall of 1893, Richard Wetherill's Hyde expedition party excavated 10 cave sites in Butler Wash west and north of Bluff, Utah. In the prodigious cave site in the tilted east face of Comb Ridge, inscribed as "HEE No. 10" (Hyde Exploring Expedition Cave Site 10), and known locally as "Giant," and geologically as "Fishmouth Cave," they completely looted the Southwest's largest known Basket Maker II cave site in nine days; December 23, 1893–January 2, 1894. In all, 90 burials, mostly mummified, were found, covered with baskets and with other accompaniments. It was here that Richard Wetherill recognized that the skulls of those buried with baskets were not deformed like the cliff dweller skulls; and that this culture underlay the later cliff dwellings. Due to the prevalence of baskets with these burials, he named them Basket Makers (Nusbaum nd:6; see also Nusbaum 1950).

Nusbaum was correct in recognizing that Wetherill's Cave 10 is Giants/Fishmouth Cave in Butler Wash, but he was mistaken in his belief that Cave 10 was the site of Wetherill's Basketmaker discovery. It is reasonable to guess that his error results from Morris's published version of John Wetherill's account, his own observation of inscriptions in Fishmouth Cave, and the following account in a letter to Nusbaum by W. H. French, one of Wetherill's diggers:

[After "the entire party" spent Christmas in Bluff being "generously entertained by the high moguls of the Mormon Church,"] *We camped at Butler Wash, Utah the last week of December 1893, and a day or two in January 1894. We took out quite a large collection from this place, but I do not remember how many mummies. We found very well preserved pottery, skulls, arrow heads, baby boards, feather cloth, spear heads, small beads, and an unusual large amount of turkey feathers* (French 1947; bracketed comment added).

Had Nusbaum studied the primary sources in the Hyde collection archives at the American Museum of Natural History, he could not have confused the work in Butler with the Basketmaker discovery, for several reasons: First, Wetherill's "First Valley" letter was dated December 17, a full week before French places the group in the Butler cave, and almost two weeks before the dates of the earliest Hyde Expedition signatures there.

Second, Wetherill's catalog unequivocally assigns the ninety-plus brutalized skeletons to Cave 7 and places it (as did the letter and every statement ever made on the subject by Richard) in "Cottonwood Canyon." Third, Wetherill wrote that Cave 7 was "30 miles north" of Bluff, whereas Fishmouth Cave is less than half that distance, and to the northwest. Fourth, Wetherill's catalog tells us that Cave 7 is 110 feet long and 50 feet deep with its long axis oriented approximately east-west. Fishmouth Cave is several times larger than that on each dimension, and faces east. Fifth, the ninety-plus brutalized burials from the site of the great discovery were skeletonized, not mummified, and associated perishable materials such as those listed by French are not listed among the associated artifacts collected (recall the comment on preservation in the "H" account quoted above).

French's failure to make reference to any other site, despite the fact that Wetherill's catalog clearly tells us that Cottonwood "Canon" and Grand Gulch received the large majority of the expedition's attention and produced the bulk of the collections, demands explanation. It seems likely that he was responding to an inquiry from Nusbaum specifically referencing Butler Wash, and that Nusbaum's inquiry was in turn likely prompted by Morris's published, second-hand retelling of John Wetherill's account, which was itself based on memories several decades old.

The inscriptions in Fishmouth Cave leave little room for doubt that French's account of a large collection being removed from that site is essentially accurate. Fishmouth Cave is the only site in which the expedition is known to have inscribed the cave number or to have written out the full name of the expedition, and there are more expedition signatures there than in any other known site. The dates of these inscriptions are December 31, 1893, and January 1, 1894, consistent with French's account. These abundant inscriptions surely constitute prima-facie evidence that considerable digging was done there, and that a substantial collection was recovered. The recovery of such a collection during the days immediately following the excavation in Cottonwood also helps explain John Wetherill's confusion of the two sites.

In light of the above, it is odd that there is neither any mention of Cave 10 in Wetherill's catalog (it skips Caves 8, 10 and 11), nor any mention in his writings of a substantial collection from anywhere in Butler Wash. The catalog does list some small collections taken near the end of the expedition from other caves in the heads of the Butler Wash drainage, some 16 km (10 miles) north of Fishmouth Cave (Anonymous nda:44–48). These caves have been identified by the Wetherill Grand Gulch Research Project and found to contain signatures with dates in March 1894 (Blackburn and Atkins this volume). The omission of any reference in any of Wetherill's or Hyde's papers to what must have been an important collection cannot be explained at this time.

Finally, although maps of the region from that period are somewhat confused and show upper Cottonwood draining into Butler Wash (Prudden 1903:274), it is hardly conceivable that the Wetherill party could have confused the drainages or their names. They had in their company a Bluff Mormon cowboy named Bob Allen (McNitt 1966:63), who would certainly have known the correct names of the drainages even if no one else did. Allen had been intimate with the whole region since 1886, during which year his father John Allen joined others in the establishment of a dairy operation in the area now known as Milkranch Point, overlooking both the Butler and Cottonwood drainages (Lyman nd:52). Since the road from Bluff to the "Milkranch" went up Butler Wash thence across the divide into a tributary of Cottonwood thence up that tributary to Milkranch Point (locally known as "the old salt road"; C. Rogers, W. R. Hurst, personal communication), Allen would certainly have had no trouble distinguishing the two drainages by 1893.

There is thus little doubt that, while a substantial collection was probably removed from Fishmouth Cave (Cave 10), this is certainly not the site of Wetherill's Basketmaker discovery. That discovery was, in fact, made at Wetherill's Cave 7, which is located approximately thirty miles north of Bluff, in a section of the Cottonwood drainage identified as "First Valley." We may reasonably infer from the combined evidence that excavation was conducted at Cave 7 and other sites in Cottonwood during the weeks prior to Christmas; that Christmas was spent in Bluff with Bob Allen's family; and that excavations were resumed at Cave 10 (Fishmouth) in Butler Wash over New Year's when they inscribed their numerous dated signatures. Everything is perfectly tidy and consistent, except for the mysterious absence of what must have been a substantial collection from Fishmouth Cave, and any known reference to such a collection in the records of Wetherill, Hyde or the American Museum of Natural History.

Where, then, precisely, is the "First Valley of Cottonwood"? There is no such locality named on any map or known to the local living populace. Is it the Cottonwood tributary now known as "Hammond Canyon," as suggested by John Wetherill's letter to his brother? Probably not. There are no caves in Hammond large enough to fit Richard Wetherill's description of Cave 7, and other information leads us to the drainage now known as Whiskers Draw, the next major tributary to Cottonwood south of Hammond Canyon, and the first tributary north of the head of Butler Wash.

Fortunately, the identity of "First Valley" has been clearly identified for us by Albert R. Lyman, a local writer and resident who spent his childhood and adolescence in Bluff and who worked as a cowboy around Elk Ridge during the 1890s. In an oral history interview taped shortly before his death, Lyman gave us this statement: "Do you know where First Valley is? First Valley is where you go over from the head of the Butler and enter the first valley you come to on the Mountain" (Lyman 1973:1–2). In an unpublished typescript history of San Juan County written prior to 1918, Lyman gives us further insights into the identity of First Valley (Lyman nd; years discussed and specific page numbers are given in brackets after each quote; bracketed words added):

...[The Bluff settlers] *began in their weariness to wonder whether there was not, in all this broad San Juan County, a better place to build a town, and cultivate the soil. This talk resulted in a meeting where it was agreed to send three men on an exploring trip towards the Elk Mountain...*

[The three men] *explored what they called the "Little Valleys", east of the mountain, located the most promising stretches of land, and started on westward to explore the Mountain* [March 1882; pp. 30–31].

About the middle of March [1885], *Benjamin Perkins, Samuel Wood and Platte D. Lyman went with a team and wagon and some saddle horses to the Little Valleys to build a house and a corral. They found the country pretty much occupied by the sheep and horses of four Navajo families... It seems the improvements these three men began, were later included in what became the Milk Ranch. But their efforts at improvements were cut short the third day when, in the evening, they saw two Utes driving some Bluff horses. They followed the thieves until dark, and in the morning they followed the tracks to the pass between First Valley and Comb Wash...* [The horses had been] *driven through the pass to Comb Wash* [p.35].

...*In that year* [1886] *Willard Butt ran a dairy at what since has been known as the Milk Ranch, and the Barton-Hyde sheep were summered on a part of Elk mountain.*

While at his dairy alone one day that summer, Willard Butt was visited by old Whiskers [a Ute Indian], *who pulled out a long gun* [Ute name for a rifle] *and ordered dinner...* [p.50].

The drainage now known as Whiskers Draw is the first of the "little valleys" draining the east side of Elk Mountain, if one is traveling north from the head of Butler Wash (Figure 8.1). It drains into Cottonwood from that part of Elk Mountain now known as Milkranch Point, and received its official name in honor of the Ute Indian known as "Old Whiskers." The two main forks of Whiskers Draw both cut through the Comb, forming the only two natural "passes" into Comb Wash. An old trail from Comb Wash intersects the road which the Bluff people constructed in 1886 onto Milkranch Point, at the pass from the south fork of Whiskers through the Comb.

There is little doubt, therefore, that Albert Lyman's "First Valley" is identical to Whiskers Draw. We may safely assume that it is also identical to the "First Valley of Cottonwood Canyon" where the Hyde Expedition found and excavated Cave 7, and from which Wetherill dispatched his enthusiastic letter to Hyde. Whiskers Draw and its tributaries boast numerous small caves, one of which fits the known information about Cave 7.

Cave 7 has been located and identified in a small side canyon of the North Fork of Whiskers Draw (Figures 8.2, 8.3, 8.5, 8.6; recorded as 42SA22180, Hurst and Severance 1990). Definite identification was made by Owen Severance and Winston Hurst armed with photographs provided by Fred Blackburn (Figure 8.5). Blackburn had recently received copies of prints made from glass plate photographs of the cave, correctly marked, from the archives of the University Museum at the University of Pennsylvania (Blackburn, personal communication; Pezzati 1990a,b). When the cave was finally found, it was the only alcove in Whiskers Draw which we had not previously checked.

We had been in possession of similar photographs of the cave obtained from Frank McNitt's papers (New Mexico State Archives, Santa Fe), for some time. They had been mislabeled prior to McNitt's receipt of his copies, however: One was marked "Digging in

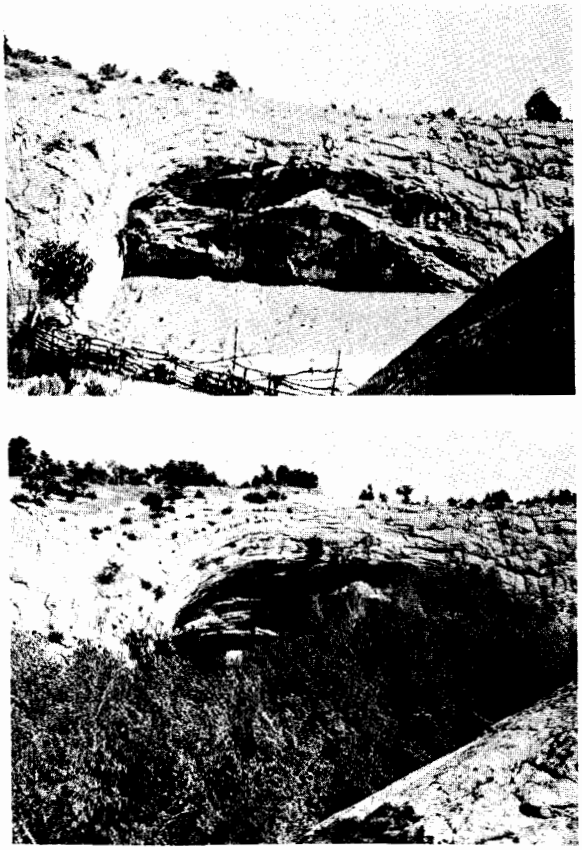


Figure 8.2 Cave 7 overviews, looking southeast: Top–photograph by T. Mitchell Prudden, summer 1900 (Prudden 1903:Plate 29b). Courtesy Special Collections, University of Utah Library. Bottom–Spring, 1992 (The tall trees in middle distance are growing along the banks of a spring-fed stream that runs on bedrock in the bottom of a 6 m deep arroyo that has incised the valley since 1900.)

Cave 10," while the other was given the correct cave number but dated 1897 and placed in Grand Gulch (McNitt 1966:fourth plate). The former was clearly incorrectly marked (the cave shown was not Fishmouth Cave, which we know to be Cave 10), and we assumed that it was not Cave 7 because of a note in McNitt's hand, written on the back:

From Talbot Hyde letter to Clark Wissler (May 8, 1930), telling of trip he & Fred Hyde took with Richard & Clate [Richard Wetherill's brother Clayton] *to Grand Gulch–leaving Alamo Ranch on July 5, 1894:*

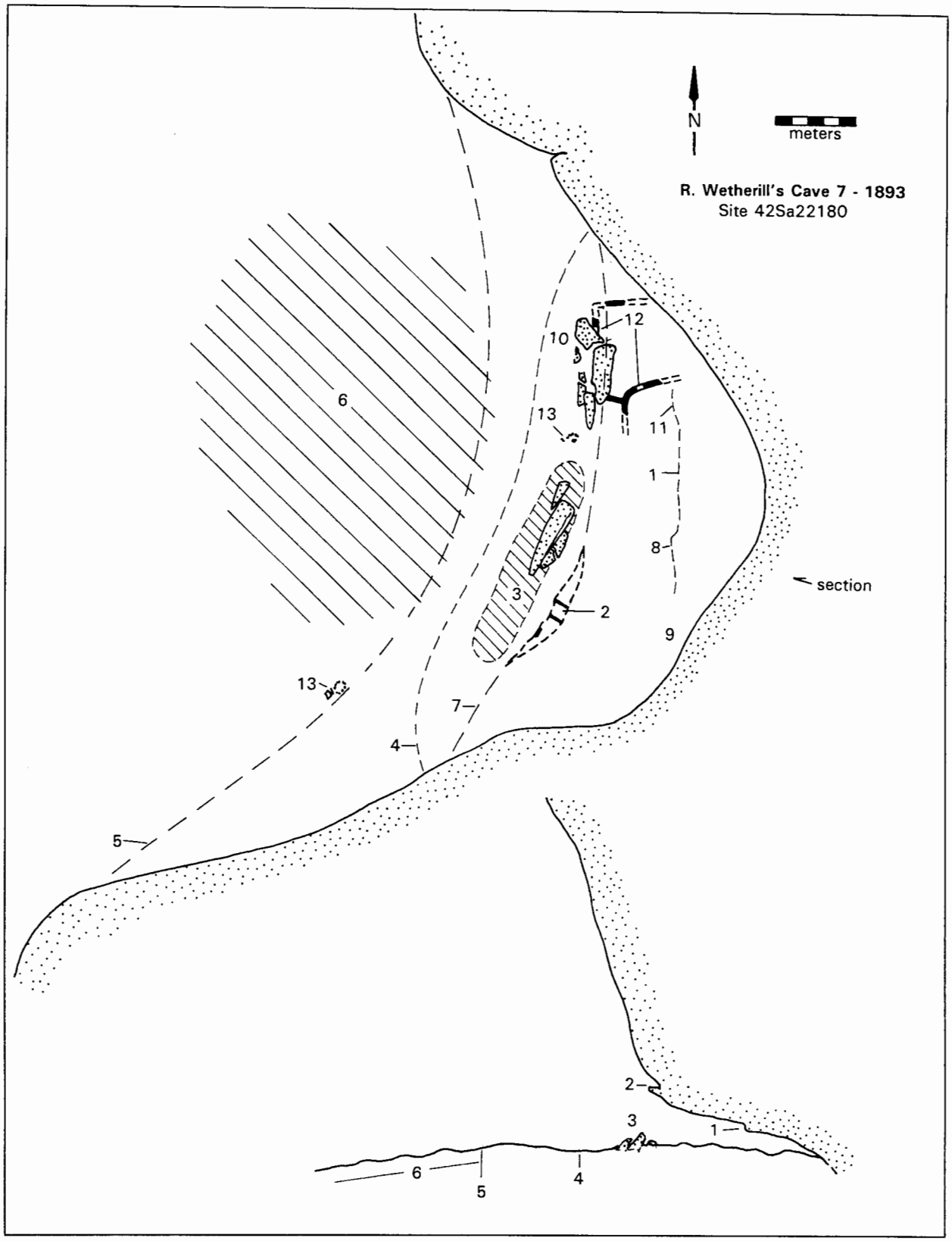

N
meters
R. Wetherill's Cave 7 - 1893
Site 42Sa22180
section
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Figure 8.3 (Facing Page) Plan map and section of Cave 7 (42SA22180: Hurst and Severance 1990): 1–vertical section of roof with inscriptions; 2–"ledge above" with remnant of Feature 2 structure; 3–debris from collapse of "ledge above" and Feature 2; 4–dripline; 5– outer overhang; 6–midden; 7–inner overhang; 8–incised inscription, "J. L. Ethridge Dec. 20, 1893"; 9–approximate location of John Wetherill excavating corrugated pot in 1893 photograph; 10–incised inscription, "J. L. Ethridge", above inner overhang; 11–Anasazi negative handprints; 12–doorways; and 13–historic fire rings.

"One of the pictures is of Richard and party digging in the floor of a shallow cave level with a canon floor and above on the rock overhang may be made out the letters I.A.E.E. meaning the Illustrated American Exploring Expedition... Richard did not know the year of this activity. It was in this cave that Richard dug much deeper than the previous party and found seven skeletons buried on their backs with knees up, two of whom had arrow points in their vertebrae..."

Hyde was clearly describing this photograph, but his reference to a mere seven burials seemed to indicate a site other than Cave 7. In retrospect, he was almost certainly referring to the first group of burials found in Cave 7, not the whole burial population from the cave. The first reference to the deep Cave 7 burials in Wetherill's catalog refers to eight skeletons, about which he notes "...heads all north bodies side by side knees up..." (Anonymous nda:5, nos. 74–81). McNitt, unaware of the "Cave 10 H.E.E." inscription in Butler Wash, apparently chose to believe the erroneous "Cave 10" designation on the glass plate.

We had also ignored McNitt's second photograph, since we knew that there had actually been a second Cave 7, located in Grand Gulch and excavated by Wetherill's Whitmore Exploring Expedition in 1897 (McNitt 1966:153–163; Anonymous ndb). We assumed that the cave in the photograph would ultimately be identified in the Grand Gulch drainage.

A comparison of the descriptions of Cave 7 and the photographed cave in Whiskers Draw leaves little doubt that the two are identical: First, Wetherill describes Cave 7 as being "110' long, 50 ft deep" (Anonymous nda:5, nos. 74–81). The cave shown in the

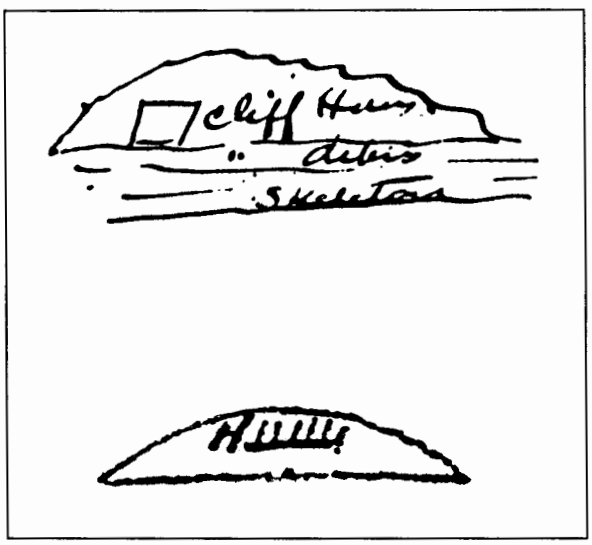


Figure 8.4 Richard Wetherill's sketch maps of Cave 7: Top–longitudinal cross-section from the artifact catalog, with stratigraphy labeled "cliff house," "debris" and "skeleton(s)" (Anonymous nda:5, Nos. 74–81); Bottom–plan sketch from Richard Wetherill's letter to Nordenskiold (R. Wetherill 1893b).

photographs and located in the north fork of Whiskers Draw is approximately that size, as measured at the dripline (Figure 8.3). Second, although Wetherill never tells us the cave's directional orientation, several references to the east and west ends of the cave suggest a north or south orientation. A cryptic drawing in Wetherill's catalog (Figure 8.4 bottom) seems to show the first row of burials with heads toward the cave mouth, with a note "Heads to the north..." This suggests a northward facing cave. The cave in Whiskers Draw faces north of west. Third, the "H" article describes a small masonry ruin in the cave, and Wetherill's catalog indicates that certain burials were taken from under its back wall. In the catalog sketch of the cave, a capitol letter "H" is drawn to the side of the

Figure 8.5a Photograph of Cave 7 interior taken by the Hyde Exploring Expedition, December 1893, looking south; note skeletal lots lying on burlap sacks, high backdirt piles and remnant of small structure at left (marked "Relics found in Cave 7.") Courtesy The University Museum, University of Pennsylvania (Neg. # S4-140128)

burials in what would be the east end of the cave. This presumably indicates the approximate location of the masonry structure, which is shown in approximately that location in another schematic sketch of the cave by Wetherill (Figure 8.4 top) in his December 31, 1893, letter to Gustaf Nordenskiold (Wetherill 1893d). The cave in Whiskers contains the remnants of a two-room masonry structure, with the back wall dismantled, located in the northeast end of the cave. Fourth, the "H" article describes a second small masonry structure, located on a "ledge above" the main cave. Above the Whiskers cave is the remnant of a small ledge and structure, much of which has recently collapsed into a jumbled mass at the mouth of the cave. Fifth, Wetherill notes in association with catalog entries 59–65 that these items were collected from a "small house 200 yards south of House no 7..." Approximately two hundred yards to the south of the Whiskers cave, in the head of the same box

Figure 8.5b Photograph of Cave 7 interior taken by the Hyde Exploring Expedition, looking northeast with the Hyde Exploring Expedition party posed in their diggings. The small masonry structure is immediately to the left, cropped out. Courtesy The University Museum, University of Pennsylvania (Neg. # S4-139872)

Figure 8.6a Photograph of Cave 7 interior (42SA22180) taken September 1990, looking south; compare Figure 8.5a

canyon, is a sand cave containing no architecture and little evidence of digging, above which is an upper cave containing a small cliff house. Finally, although the charcoal signatures visible in the early photographs have been largely obliterated by later signees and other destructive forces, two incised signatures of J. L. Etheridge, one of Wetherill's diggers, have survived in the Whiskers cave. One of Ethridge's signatures is dated December 20, 1893, just three days after Wetherill's letter announcing that they were into the thirtieth of the ninety-plus burials.

It is of historic interest to note that careful study of the photographs in the McNitt and University Museum collections reveals that these are not duplicate prints from the same negatives, but in fact represent different negatives of the same shot, taken at the same time. A series of photos were taken by Wetherill of the cave, including: a south-eastward view of the cave and the small structure in it; a northeastward view of the cave excluding the structure with the diggers posed in their holes; various skeletons in-situ; and a close-up view of John Wetherill exposing a yucca-net-wrapped corrugated pot. Each of these shots was taken twice. One of each of the duplicate glass plate negatives went to the American Museum of Natural History with the Hyde Collection, and a set of prints from these ended up in the possession of the University Museum in Philadelphia, correctly labeled. As

Figure 8.6b Photograph of Cave 7 interior taken September 1990, looking northeast; compare Figure 8.5b.

of this writing we do not know what became of the second set of negatives, but we do know that the cave shots were incorrectly labeled as to cave number in the one case and year and place in the other, and that McNitt found and obtained copies of these from the papers of George Pepper, then in the possession of Pepper's daughter Mrs. James Cameron (McNitt 1966:76).

There is one more bit of photographic history regarding this cave that bears reporting. Having identified the cave, we are now able to recognize it as the one shown in an overview photograph taken by T. Mitchell Prudden in the summer of 1900, published in his landmark 1903 survey of small ruins in the San Juan drainage (Prudden 1903:plate 29b) and reproduced here as Figure 8.2 top. We needn't marvel at the confusion evidenced above regarding the location of the Basketmaker find and the number of burials encountered there, after reading Prudden's comments on this photograph: Although he was guided to the site by Charles B. Lang (Prudden nd:58, 86), who had been the expedition photographer at the time of the Cave 7 excavation (R. Wetherill 1894i; McNitt 1966:63), Prudden gives its location as "Butler Wash," and notes that "eighty bodies" were taken from it (Prudden 1903:245, Plate 29b).

In conclusion, we are confident that Cave 7 has been identified and that it is the small cave in the North Fork of Whiskers Draw which now bears the Utah State survey number 42SA22180.

Site Description and Setting

Wetherill's 1893 Cave 7 is a small alcove containing remnants of two small structures, located in a short, right-bank box-canyon tributary to the North Fork of Whiskers Draw at an elevation of approximately 1720 m (5640 feet). It is situated near the mouth and on the east side of the box canyon, which cuts several hundred meters southward from the Whiskers–North Fork main canyon into the Navajo Sandstone, terminating at a high pour-off. Beneath the pour-off at the head of the canyon, 200 m (650 feet) south of Cave 7, are two contiguous, sand-floored alcoves, above one of which is a smaller alcove containing a small cliff dwelling. The canyon is incised by a massive 6 m (20 feet) deep arroyo which has cut headward since 1900 into the sediments beneath the alcoves at the head of the canyon.

The alcove opens directly onto a gently sloping alluvial terrace at the level of the pre-arroyo floodplain, which now supports a dense, 2 m (6.5 feet) high stand of big sagebrush (*Artemisia tridentata*). A riverine community of cottonwood (*Populus fremontii*), box elder (*Acer negundo*), water birch (*Betula* species), horsetail (*Equisetum arvensa*), and various unidentified grasses and forbs grows along the stream in the arroyo bottom, while the terraces support thickets of scrub oak (*Quercus gambelii*), water birch, wild currant (*Ribes* species) and various shrubs, forbs and grasses in addition to the aforementioned dense sagebrush. The photograph of the site taken in 1900 by T. Mitchell Prudden (Figure 8.2 top) (Prudden 1903: Plate 29[2]; Prudden nd:86) shows a substantial wood pole stock fence closing off the canyon at the north edge of Cave 7 and a barren canyon bottom denuded by severe grazing. Prudden's photograph shows a flat bottom with a slightly depressed, sandy stream bed, but no hint of an arroyo.

Cave 7 (Figures 8.2, 8.3, 8.5, 8.6) is actually a low alcove within a much larger, high, cliff overhang. The inner alcove is approximately 32 m (105 feet) wide and 3 m (10 feet) high at the mouth, and 12 m (16 feet) deep. The ceiling quickly drops down to less than 2 m (6 feet), and descends to the back of the cave. The outer overhang is approximately 150 m (490 feet) long and 30 m (100 feet) high, extending about 7–8 m (25 feet) beyond the mouth of the cave. The alcove faces west by northwest.

Stratigraphy

There are some useful sources of information on the stratigraphy of Cave 7. These include the several above-quoted descriptions by Richard and John Wetherill, a rough profile sketch in one of Richard's letters to Nordenskiold, and comments and depth measurements from the field catalog.

Although Wetherill's catalog was apparently designed to record the height of items in the fill above numbered floors, he used the "Hgt. Floor" column of his ledger exclusively in Cave 7 to record the depth below the surface, using a negative number (For example, "-6" indicates six feet below the surface; see Wetherill 1894i:2). Depth information is provided for most of the items from Cave 7. Scrutiny of the catalog reveals a strong tendency for depths to cluster at zero to three feet and four to seven feet. The material in the upper three feet is frequently said to come from "loose debris" associated with the "C.D." (Cliff Dweller) occupation, and it includes most of the demonstrably Puebloan materials such as skeletal remains with posterior flattening of the skull, pottery, and notch-toed sandals. Conversely, the deeper deposits produced almost exclusively Basketmaker material (undeformed skulls, no pottery, etc.). The only exceptions were the two aforementioned

pottery vessels which were presumably buried or placed in storage pits intruded into deeper sediments in the back of the cave.

This pattern matches the limited information in the several accounts which have come down to us, and which were quoted in full in the opening pages of this paper. From the Wetherill sketch reproduced above (Figure 8.4; R. Wetherill 1893d:2), the various descriptions and the information in the field catalog, we derive the following composite (and no doubt grossly simplistic) stratigraphy:

- Level 1: (zero to three feet below surface, intruding in some areas to as deep as seven feet) "loose debris," largely disturbed by previous diggers, containing Puebloan artifacts and a few burials. Associated with this stratum was a masonry structure. The recovery of several pots from deep deposits may indicate the presence of storage pits or pit structures associated with this stratum, although Wetherill does not explicitly describe or refer to any such features.

- Level 2: (three to seven feet below surface) "clean, yellow sand" immediately underlying Puebloan deposits, intruded by an unknown number of pits of various sizes which contained the remains of numerous Basketmaker burials and were filled with cultural sediments. Some of the pits were "bottle shaped," presumably of the form commonly referred to as "bell-shaped" in archaeological parlance. This level was apparently subject to dampness, probably due to the high water table in the canyon prior to modern arroyo incision, and perhaps to seepage from the back of the cave. The dampness is presumed to be at least partly responsible for the paucity of perishable artifacts, and the absence of the usual natural mummification in the burials.

Architectural Features

Cave 7 contains the remains of two recognizable masonry structures, one in the northeast end of the main cave, the other on a small ledge 3–4 m (10–13 feet) above the approximate center of the cave opening. The ledge supporting the upper structure has collapsed, leaving only a small remnant of the structure intact and in place, and the rest scattered in a fractured and scrambled mass at the mouth of the cave. It appears to have been a two-room structure constructed of unshaped sandstone rubble set in abundant, distinctive, yellow mortar. The structure in the main cave has sustained severe destruction at the hands of the diggers, but appears to have consisted of two rooms. Part of one room remains standing to almost full height, much as it appears in the 1893 photographs. A doorway which was sealed with masonry in 1893 is now open. The masonry is single-wythe, uncoursed sandstone rubble set in moderate brown adobe mortar.

It is possible that there were deep storage pits, kivas, or other pit structures associated with the Puebloan occupation, though we have no direct evidence of them. Indirect evidence is limited to Wetherill's indication that two pottery "ollas," numbers 229 and 142, were found in section 3 at five feet and section 6 at seven feet, respectively. Both had stone covers and were seemingly set below ground for storage purposes.

The only indication of Basketmaker construction in Cave 7 is Wetherill's reference in his later descriptions to the "bottle shaped" pits intruded into sterile sands below the Puebloan deposits. These pits are implied but not specifically noted or described in Wetherill's field catalog, and no primary information is known to exist as to their number, size, or distribution. It is not known whether all pits contained skeletal remains, or whether some may have been empty. We infer that some were very large, because one appears to have contained at least eight side-by-side burials (Anonymous nda:5, nos. 74–81; compare McLoyd 1892:25; Anonymous [McLoyd] nd:2, 3).

Horizontal Provenience

Most of the items from Cave 7 listed in Wetherill's catalog are attributed to one of 10 sections, numbered 0–9. We are given the dimensions of only three of these, Sections 1,2 and 3 (12 by 6, 12 by 10 and 12 by 20 feet, respectively). The uniformity of width and consistent increase in length leaves little doubt that the width of the inner alcove was arbitrarily divided into nine 12-foot wide sections, whose length varied according to the depth of the cave in each section. We know that they were numbered from west to east (southwest to northeast), as revealed by the assignment of sandals 45–47 to Sections 1 and 2, and the comment that they and other sandals "were found scattered through the waste in west end..." (Anonymous nda:3, nos. 45–47). This is consistent with the reference to several items assigned to section 6 and said to underlie the back wall of the structure (Anonymous nda:22, no. 420). During the course of excavation, "section 0" was added in an unspecified area of the cave. It could have been beyond the southwest end of section 1, but reference to a "south line" bounding several sections suggests that "section 0" was assigned to an area in the deepest part of the back of the alcove. The "south line" probably passed immediately behind the back wall of the masonry structure and divided section 0 from the back of some of the central sections, though there is no way to be certain.

Artifacts and Burial Lot Associations

Of the 214 artifacts listed by Wetherill from Cave 7, 91 are attributable to the level 1 Puebloan deposits on the basis of depth (less than or equal to three feet) or the nature of the object (e.g. pottery). The remaining 123 artifacts are attributed to the Level 2 Basketmaker deposits. Hurst briefly examined 72 of the Level 2 artifacts during a visit with the Wetherill–Grand Gulch Research Project team to the American Museum of Natural History (Johnson 1990).

The artifact assemblages from the two levels will be discussed in turn, with the bulk of attention focused on the Basketmaker materials from Level 2. The following information is derived primarily from Wetherill's catalog entries, supplemented by Hurst's data. (A full listing of Cave 7 artifacts and skeleta, including both Hurst's and Turner's observations as well those of Wetherill, concludes this paper.)

Level 1 (Puebloan) Assemblage

According to Wetherill, the Level 1 deposits of Cave 7 had been disturbed and presumably plundered by previous artifact collectors. Wetherill's collection may therefore be assumed to be biased in unknown ways by the prior removal of an unknown number of pots, baskets, sandals and other artifacts, and possibly of human remains. The assemblage recovered by Wetherill included four burials, 23 whole or partial pottery vessels, three knives, 19 sandals, one moccasin, five whole or partial baskets, eight bone awls, five stone axes (two with handles), two "pomegranates" and other odds and ends such as leather scraps and human hair bundles. We may assume that the "pomegranates," if that is what they really were, were thrown in as a joke by Wetherill's party, or left behind by their pothunting predecessors. The rest of the collection is a typical, mixed Pueblo II–III period (A.D. 900–1250) Anasazi assemblage. These materials are not directly germane to the remainder of this paper and will not be discussed in detail here.

Level 2 (Basketmaker) Assemblage

Of the 123 total artifacts listed by Wetherill from the Basketmaker levels of Cave 7, all but six were associated with human skeletons. Fifty-seven were examined by Hurst.

As Wetherill observed, there is little evidence for Basketmaker use of the cave as a domicile or camp site, or even for storage of material other than human burials. Cave 7 appears to be a true "burial cave," containing

the remains of over 90 Basketmaker individuals in 85 numbered burials. The following discussion must therefore focus on the artifacts in their context as burial-related materials.

The Cave 7 Basketmaker artifact assemblage contrasts with those reported from other sites (Kidder and Guernsey 1919; Guernsey and Kidder 1921; Nusbaum 1922) and reinforces the skeletal evidence (presented below) for a massacre or execution. Such an episode is evidenced by 1) the kinds of artifacts which are and are not prevalent in the assemblage; and 2) the physical locations and associations of these artifacts in the Cave 7 burials.

The usual Basketmaker burial assemblage of fur blankets, animal skins, split fabric bags and baskets is almost totally absent from the Cave 7 burials, which are heavily dominated by what Wetherill called "spear points" or "spear heads." This absence of associated perishable goods is probably due in part, but not entirely, to post-burial decay due to damp conditions in the deep levels of the cave (see discussion under "Stratigraphy," above). The first two reports of Cave 7 (Wetherill 1893b:"H" 1894) both referred to basketry and hide or fur/feather robes in association with the Cave 7 burials, though no such artifacts are listed in the catalog. This may be due to their poor condition, as suggested by the skeletonized condition of the burials and Wetherill's comment that some materials had "left little trace save a dark stain in the sand" ("H." 1894). As further evidence for the demise of perishable goods due to in-situ decay, we can cite the presence in the collection of only one perishable artifact (a wooden knife handle) and the complete absence of projectile shafts or foreshafts among the 69 bifacial blades recovered from the burials. Since many of these were clearly intruded into bodies, they must have been hafted to shafts (if they were dart points) or handles (if they were knives—more on this question below).

More than half (61/85, 65 percent) of the Cave 7 Basketmaker burials lack any associated, *recovered* artifacts (We will never know whether there were decayed perishable goods in association with them). The rest are associated only with bifacial dart points and knife blades and/or small ornamental and ceremonial items which could have been worn on the body or carried in small personal pouches (pendants, beads, cloudblower pipes, a gaming or medicine stone, finely worked bone objects of unknown function, etc.). Only two burials (378 and 196) appear clearly to have more or different goods than might be expected to have been worn routinely, and these are both characterized by inordinate numbers of bifacial blades arrayed around or next to their bodies. Fourteen of the burials had bifacially-flaked stone blades or bone "awls" clearly or probably intruded into their bodies, and nine more had stone or bone blades or "bone awls" associated with them in unspecified locations. Several individuals had large stone bifaces intruded into their rib cages, and two had projectile or knife tips embedded in their vertebrae. One had what Wetherill called a "five-inch obsidian blade" piercing the pelvic region with sufficient force that, in his words, the "hip bones were pinned together" with the point "bur[ied] into two inches of bone" (R. Wetherill 1896e; see Figure 8.19). When we consider that the lack of associated weapons with many skeletons is likely due at least in some cases to the recovery of the weapon by the attacker or executor, the pattern is strengthened, and the entire assemblage can be plausibly accounted for by the violent destruction of a group and perhaps the formal burial of two individuals whose associated goods reflect a strong association with weapons.

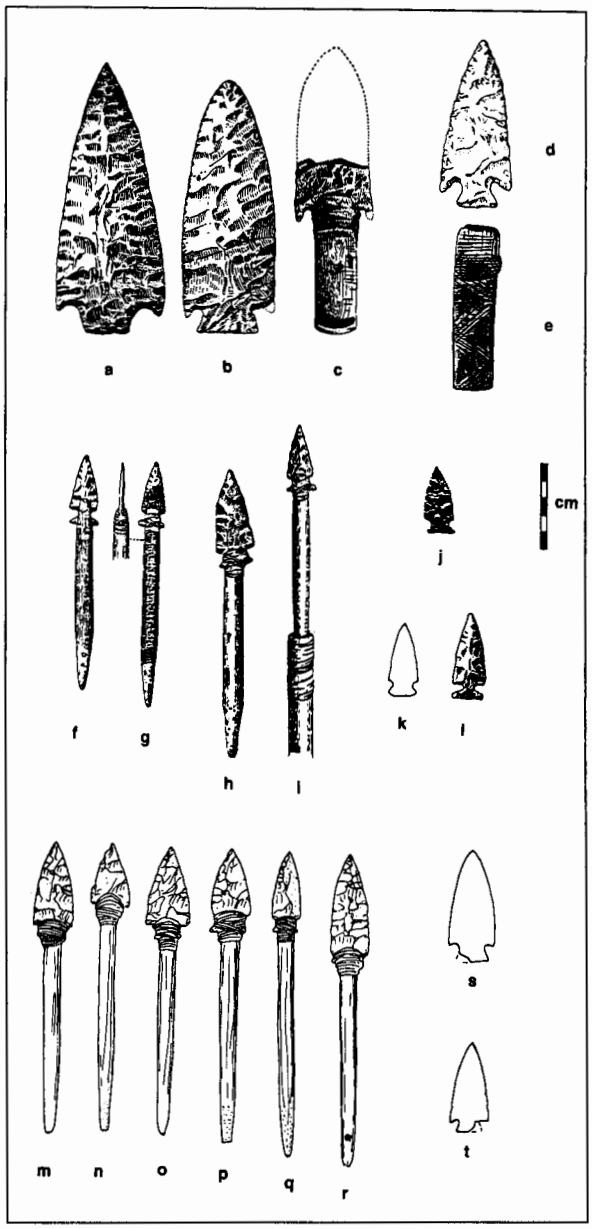
There are several aspects of the nature and function of certain classes of Cave 7 artifacts that invite discussion. The most important of these involves the numerous bifacial blades: are they projectile points, as implied by Wetherill's term "spear points," or are they knife blades, as suggested by their relatively large size and shape? (We may dismiss the possibility that they represent

Figure 8.7 (Right) Stone bifaces from various Basketmaker sites:

a–e. Knives and knife handles (a–d White Dog Cave, Guernsey and Kidder 1921:Plate 35 [a. is atypical, basal stem likely reworked]; e. DuPont Cave, Nusbaum, Kidder and Guernsey 1922:Plate 35).

f–l. Horizontally-notched dart points and foreshafts (f–i White Dog Cave, Guernsey and Kidder 1921:Plate 24; j. DuPont Cave, Nusbaum et al. 1922:Plate 46e; k. Sand Dune Cave, Lindsay et al. 1968:Figure 42; l. Syayodneechee burial cave, Guernsey and Kidder 1921:Plate 35.)

m–t. Stemmed/diagonally-notched dart points and foreshafts (m–r., t. Sand Dune Cave, Lindsay et al. 1968:Figure 42; s. Prayer Rock District, Morris 1980:Figure 34x.)



arrow points, on the basis of their large size and heaviness and the complete absence of anything resembling the Rosegate/Abajo tanged point style which accompanied the introduction of the bow and arrow in southern Utah during late Basketmaker II or Basketmaker III times—see Geib and Bungart 1989, Reed 1990, Holmer 1986, Thomas 1978. This is an important question with clear sociocultural and behavioral implications: If the bifaces are knife blades, then these people may have been dispatched methodically, at close quarters and in a very direct manner, by stabbing. If the bifaces are dart points, then a less intimate, slightly more distant means of execution by projectiles hurled by atlatls is suggested for many of the victims.

Reports on excavated Basketmaker sites reveal a clear and consistent dichotomy between the bluntly elliptical wooden foreshafts of the typical Basketmaker atlatl dart, and the flat, rectangular, wooden or horn handles of knives. If the conditions in Level 2 were more conducive to preservation, the dart vs. knife question could be definitely answered by the form of the attached hafting. In the absence of any hafted attachments, however, we are left to make inferences from the form of the blades themselves. We here attempt to do so by compiling information on hafted bifaces reported from other Basketmaker assemblages and comparing the results to the bifaces from Cave 7.

Early students of the Basketmaker culture noted that not only did Basketmaker knives tend to be larger than dart points, as one might expect, but they tended to be notched differently as well:

Almost all our finished points are notched at right angles to their long axes, the notches having a depth equal to about one-third of the total width of the base. The notches of the large chipped knives, on the other hand, instead of being set at right angles to the long axes of the specimens, run in at an acute angle... (Guernsey and Kidder 1921:87).

A quick review of the literature seems to confirm the reality of these two recurrent biface forms, but also suggests a third style of intermediate-sized, diagonally-notched bifaces (Figure 8.7). Very large, diagonally-notched bifaces with expanding stems and distinct shoulders or (normally) barbs were found hafted only to knife handles (Figure 8.7a–e). Relatively small points with horizontal side notches were only hafted to dart foreshafts (Figure 8.7f–l). Between these two clearly discrete biface styles, however, there occurred a range of intermediately-sized, diagonally-notched bifaces whose form resembled that of the knives, but which have been reported to be hafted only to dart foreshafts (Figure 8.7m–t).

In an effort to clarify these apparent stylistic patterns, data were compiled on *hafted* bifaces reported in a sample of classic Basketmaker site reports, on *all notched* bifaces reported in the same reports, and on the Cave 7 assemblage of *examined, notched* bifaces. The resultant distributions are presented in Figures 10–12.

Fifteen hafted specimens were found in reports on three classic Basketmaker sites: Broken Roof Cave in Chinle Wash (Guernsey 1931:Plate 38c), White Dog Cave near Kayenta (Guernsey and Kidder 1921:Plates 34f–j, 35k, l), and Sand Dune Cave near Navajo Mountain (Lindsay et al. 1968:Figure 42a–f). For each hafted biface, information was compiled on the length of the stone blade and the manner of notching (side, corner or not). Figure 8.10 presents the resultant distribution.

Although the sample is small, distribution of hafted blade lengths is clearly bimodal, with the hafted knives exceeding 9 cm (3.5 inches) in length and the hafted dart points

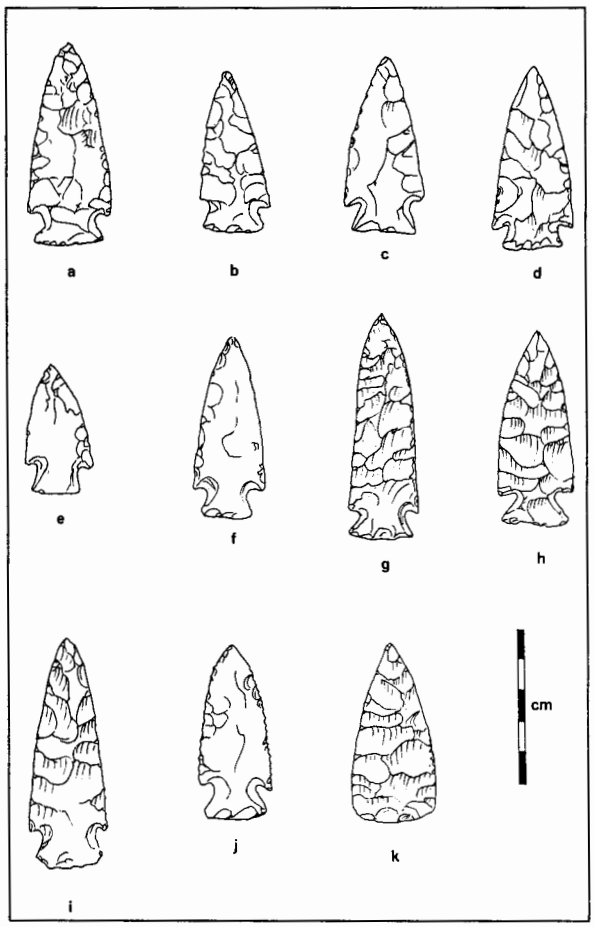


Figure 8.8 Representative dart points from Cave 7. Information from Hyde Expedition field catalog (Anonymous nda): (a., c.) 263, 257, found with four other points and a "bone awl" with 246, a group of six skeletons apparently "thrown in a pile;" (b., e.) 298, 301, found "on the pelvis" of skeleton no. 305(?); (d.) 260, "at left of head of [skeleton] 245; (f.) one of five points "found at the left of the face of skeleton 196;" (g., h., k.) 219, 223 and 208, three of ten dart points found "along the right arm [of skeleton 196]; (i., j.) two of seven points found with one "bone awl...among the bones of [skeleton] 246." (Drawn from photographs in the Wetherill–Grand Gulch archives, Edge of the Cedars State Park, Blanding, Utah.)

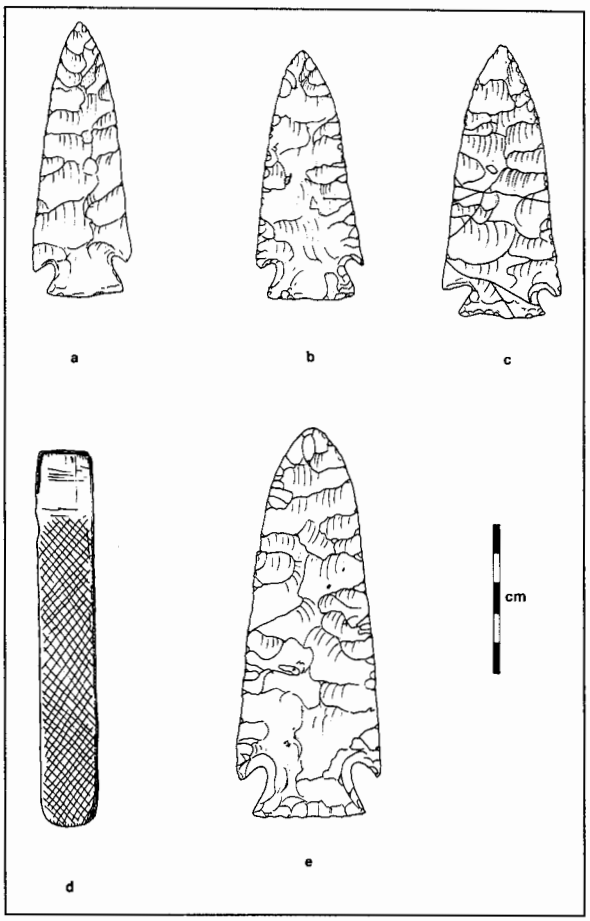


Figure 8.9 Representative large dart points, stone knife and knife handle from Cave 7. Information from Hyde Expedition field catalog: (a.) 210, large dart point found with ten dart points "upon the right arm" of skeleton 196; (b.) 252, one of seven dart points "found among the bones of 246;" (c.) 106, large dart point found inside of ribs of [skeleton] 76;" (d.) 85, wooden knife handle "found on knees of [skeleton] 74;" (e.) 198, knife blad "found between ribs of right breast' of skeleton 196. (Drawn from photographs in the Wetherill–Grand Gulch archives, Edge of the Cedars State Park, Blanding, Utah.)

ranging between about 4 and 7 cm (1.6 to 2.8 inches) long with an average at about 5-6 cm (2 to 2.4 inches). Within the hafted dart point set, there is a tendency for the horizontally side-notched form to cluster in the small-to-mid size range (4-6 cm, 1.6 to 2.4 inches), and the diagonally-notched form to cluster in the mid-to-large range (5-7 cm, 2 to 2.8 inches). These patterns are matched almost exactly by the data on all notched bifaces, hafted or unhafted, graphed in Figure 8.11 (the single anomaly is a short, anomalous, triangular-bladed point from Sand Dune Cave (Lindsay et al. 1968:Figure 24g).

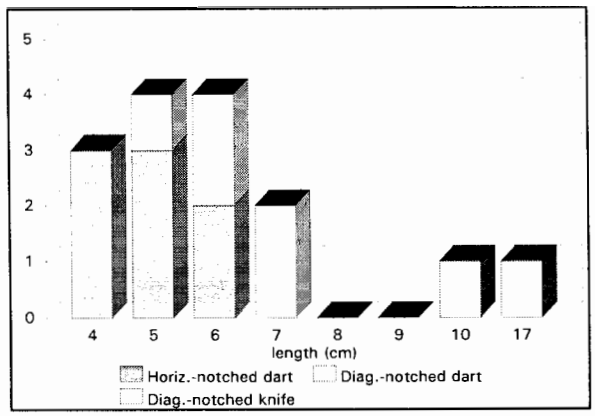
These data imply the existence of two classes of bifaces in the classic Basketmaker cave assemblages reviewed for this study: 1) true knives, longer than 9 cm (3.5 inches), always diagonally notched, and sometimes found hafted to knife handles; and 2) smaller bifaces, presumably dart points, which range between about 4 and 7 cm (1.6 to 2.8 inches) in length, are found hafted only to dart foreshafts, and may be either horizontally or diagonally notched. Horizontally-notched specimens tend to be slightly smaller than the diagonally-notched dart points.

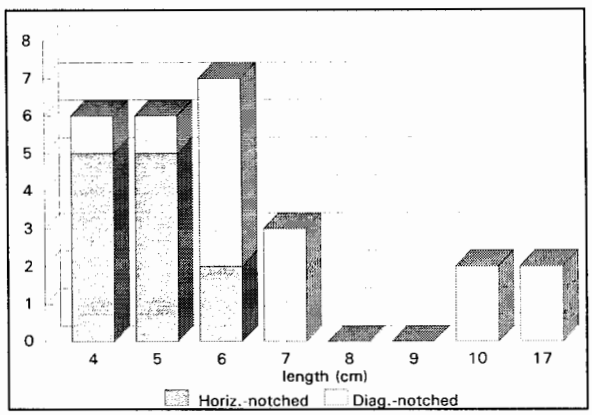
How do the Cave 7 bifaces compare to these patterns? If the Cave 7 assemblage is dominated by knives, we would expect to see a distribution of predominantly large (9+ cm, 3.5+ inch), diagonally-notched bifaces. While the assemblage is dominated by the diagonally-notched form (Figure 8.8; note that even the "side-notched" examples are almost all diagonally notched, with expanding stems), the size distribution is less straightforward (Figure 8.12). Nonetheless, though the size range is a little broader and the bimodal distribution less pronounced, the Cave 7 distribution generally matches those depicted in the other graphs, with a stronger peak at about 6 cm (2.4 inches) and fewer specimens smaller than 6 cm (rounded). A minor secondary peak (one examined specimen) in the 10+ cm (3.9+ inch) range seems to match those on the other graphs. This suggests that the Cave 7 biface collection is a reasonably typical Basketmaker assemblage, dominated by dart points, with a few knives. The near absence of horizontally-notched dart points commonly in evidence in other Basketmaker sites is interesting, especially in light of the low representation of points shorter than 5.5 cm (2.2 inches). This is an assemblage of the larger, diagonally-notched dart points and

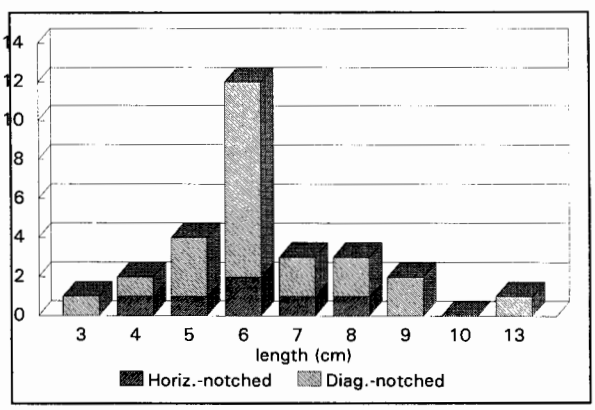
Figure 8.10 (Right, Top) Size distribution of hafted bifaces from various Basketmaker cave sites. CN = corner notched; SN = side notched.

Figure 8.11 (Right, Middle) Size distribution of all notched bifaces, hafted and unhafted, from various Basketmaker cave sites.

Figure 8.12 (Right, Bottom) Size distribution of examined bifaces from Cave 7 (excluding unnotched specimens).







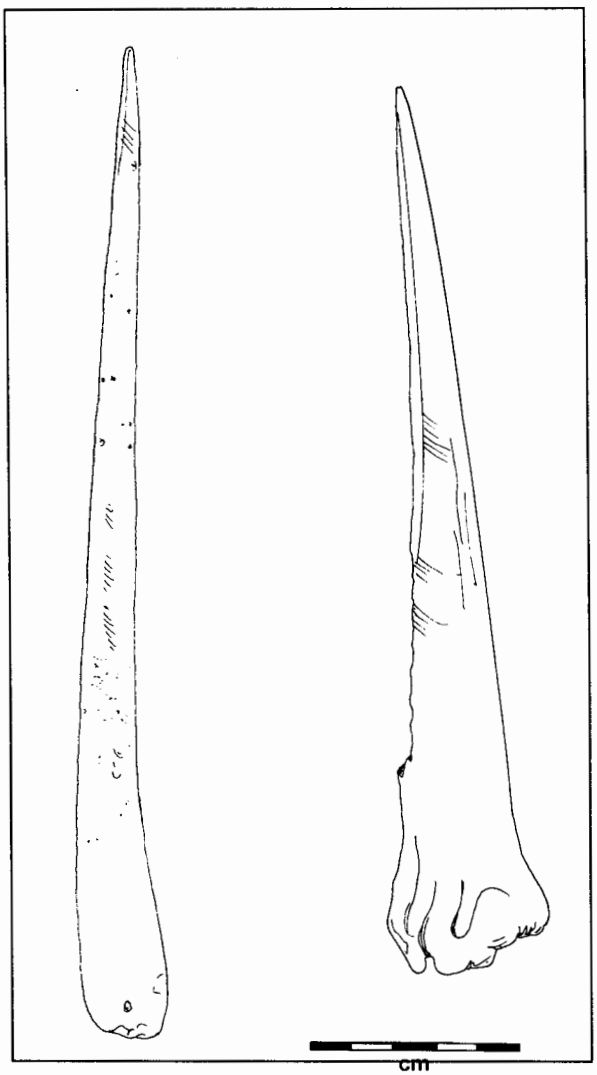


Figure 8.13 (Above, Left) Representative bone "awl" daggers from Cave 7. Information from Hyde Expedition field catalog; (left) 303, "on pelvis of [skeleton] no. 305;" (right) 237, found with a bone "spatula" (Figure 8.14 left) "on head and face of skeleton no." (no skeleton number given). (Drawn from photographs in the Wetherill–Grand Gulch archives, Edge of the Cedars State Park, Blanding, Utah.)

knives. The Cave 7 data, therefore, do not support the view that most of the Cave 7 victims were stabbed by knives.

Although we are left unable to definitely attribute the majority of the homicides at Cave 7 to execution by stabbing, there can be no doubt that a number of the victims were stabbed. The one knife blade which we were able to examine was found deeply intruded into the victim's chest cavity. Several other victims were dispatched by intrusions of so-called "bone awls," actually bone daggers (Figure 8.13), which could only have been intruded by stabbing. Of five such "awls" recovered, three were intruded and presumably used as daggers. Furthermore, one skull (AMNH 7338) exhibits a penetration wound in the face, below the left malar, that matches the diameter and form of the bone daggers (Figure 8.22). It is noteworthy that the ratio of intruded to non-intruded "awls" is very similar to that observed in the intruded vs. non-intruded stone blade sample (60 percent vs. 56 percent). It bears repeating that many of the items in the "non-intruded" category, including more "awls," may well have been used as weapons, but Wetherill indicates only their burial association, giving no details as to their precise relationship to the skeleton.

Most of the Cave 7 bifaces conform to the corner-notched Basketmaker knife/dart form described above. Others are similar in general outline but lack the notches. These are described as "preforms," thus implying an unfinished and as yet non-functional condition. That interpretation is probably incorrect in some cases, since at least one unnotched blade was found intruded into a body in Cave 7 (No. 115). That the notches are unnecessary to a hafted knife's function is indicated by the fact that the unnotched, lanceolate knife form became the standard in Anasazi culture after Basketmaker times. We are not aware, however, of any hafted specimens of unnotched points or knives from Basketmaker assemblages.

A final point bears discussion before we leave the topic of knives vs. darts. As reported above, Wetherill reported a "five inch obsidian blade" penetrating laterally through the pelvic region with such force as to pin the hips together and seat itself two inches into bone. The American Museum of Natural History Physical Anthropology Catalog entry for this artifact (no. 7337) confirms Wetherill's description, telling us that the "sacrum and left innominate [were] pierced by [an] obsidian spear." Unfortunately, the point had been snapped off flush with the bone and only the embedded tip remained in place at the time of Turner's examination (Figure 8.19). Assuming that Wetherill's description of the "spearpoint" is reasonably accurate, we are confronted with a minor but intriguing mystery: Such a biface is well beyond the size range of reported dart points and well into the upper end of the size range for knives, as established above. Apart from the mechanical difficulties involved in a material as brittle as obsidian remaining intact in so powerful an impact with bone, we are compelled to wonder how any hand-held stone knife could be intruded with such force.

The blade could possibly have been hafted to a lance or spear, but there is little or no evidence of such weapons in Anasazi culture. We know of only one spear which may be of Anasazi manufacture, and its age and cultural association are obscure. It was sold to C. D. Hazzard by Charles McLoyd in the early 1890s, and now resides among the Hazzard Collection at the University of Pennsylvania's University Museum. The only information that we have on this artifact is the following brief statement from the original Hazzard catalog, probably prepared by McLoyd (Anonymous ndc:36, no. F-83):

83. - A spear about four feet in length with a large and well made flint point. This is in a fine state of preservation, but the shaft is warped by stones pressing on it. Was found in a cave in Lake Canyon.

Without more information, it is impossible to tell whether the spear is of Basketmaker or even Anasazi affiliation. The

form of the blade may be assignable to a dated style, but we have not had opportunity to examine it. In a poor quality published photograph (Anonymous 1892:73), the blade appears to be triangular with straight margins, lacking the convex margins of the classic Basketmaker dart points and knife blades. The obsidian blade in the Cave 7 pelvis was not examined for this study, however, and its form is unknown. We can only conclude from all this that a lance or spear may have been used in the Cave 7 massacre, and that the McLoyd/Hazzard specimen may be a rare Anasazi example of this kind of weapon. If the blade was a knife rather than a spear point, it must have been driven home by the weight of the body, perhaps in a fall from the cliff.

There is a second mystery with regard to Cave 7 weaponry: Although many of the skulls and mandibles show evidence of bludgeoning by club or cudgel, no such weapon was found in the assemblage. Hafted stone hammers and axes do not occur in Anasazi assemblages until the Basketmaker III period, after the time of the Cave 7 massacre. It is possible that the Cave 7 victims were beaten with wooden or antler clubs similar to rare specimens which have been found in Bullet Canyon, White Canyon and Allen Canyon. The wooden clubs are carved hardwood with a shape resembling small baseball bats or "billy clubs," complete with taper and proximal knob. The only example which has been thoroughly described in print was found by Neil M. Judd among the roof poles of a Pueblo III period kiva in Bullet Canyon, a tributary of Grand Gulch (Judd 1952). According to Judd, this specimen is made of mountain mahogany, weighs 439 gm (15.4 ounces) and measures 73.66 cm (29 inches) long, 3.4 cm (1.3 inches) in diameter at the tip, 2.7 cm (1 inch) in diameter at the handle, with a proximal knob 3 cm (1.2 inches) in diameter. The Hyde Exploring Expedition collected "a pair of war clubs," one "like a baseball bat," the other resembling "a policeman's billet of elk horn, very heavy and strung on small end" (Wetherill 1894d; see also Anonymous nda:44, nos. 1019, 1020). One of these was found with a hafted axe, the other on the floor of a cliff dwelling. Both are therefore likely to be of Puebloan rather than Basketmaker manufacture. If McLoyd's memory (we have no evidence of in-field documentation) is reliable, however, the White Canyon club is certainly of Basketmaker age. In his catalog of what is now known as the "Kunz Collection," McLoyd offers the following information (Anonymous ndd:no. E-10):

No. 10. - Round smooth oak club, 25 inches in length, 1-3/4 inches in diameter at large end; has a knob on small end, to prevent it slipping through the hand; may have been used as a war club. Found with No. 6A.

No. 6A refers to a "well preserved headless mummy of a male that, in life, must have been six feet in height..." Other artifacts associated with this burial include typical Basketmaker baskets and classic early Basketmaker fringed-toe sandals (Anonymous ndd:nos. A-6, C-2, C-3, C-5, C-25, F-4). One of us (Hurst) has had the opportunity to examine the McLoyd White Canyon club, and there can be no doubt as to its function and efficacy as a finely crafted weapon.

Such weapons bring to mind Cushing's description of the heavily armed mythical warrior twins of Zuni, whose formidable arsenal includes the atlatl and a "face-pulping war club" (Cushing 1896, quoted in Cushing 1988). Combat with war clubs may be depicted in rock art images such as the white pictograph at Defiance House in Glen Canyon (Hurst and Pachak 1989:19).

Several bone artifacts found with Cave 7 burials are of particular interest because of their uniqueness and craftsmanship (Nos. 236, 250, 309, 365, 400). These objects, termed "spatulas" by Wetherill, are finely worked and polished into thin, flat, plates in the form of long, slender trapezoids (Figure 8.14). Only two of these objects were actually examined. Both were 21.2 cm (8.3 inches) long, while their widths varied slightly from 3 to 3.3 cm (1.2 to 1.3 inches) at the wide end. They do not exceed 2mm (.08 inch) in thickness. Four of

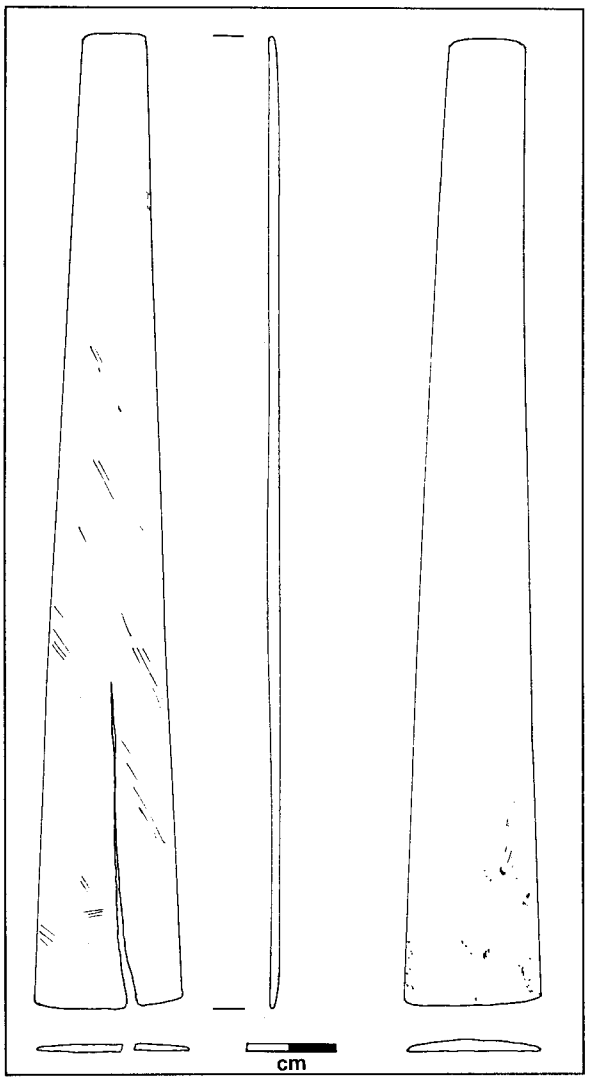


Figure 8.14 Bone "spatulas" from Cave 7. Information from Hyde Expedition field catalog: (left) 236, found with a bone dagger (Figure 8.13 right) "on head and face of skeleton no." (no skeleton number given); (right) 250, "found with 248" ("bones of child"). (Drawn from photographs in the Wetherill–Grand Gulch archives, Edge of the Cedars State Park, Blanding, Utah.)

the spatulate objects were found with different burials. One (250) was found in an unspecified location in the burial of a child (248). Two (236, 309) were found above the faces of an unidentified burial and a middle-aged female (307). The other two (365, 400) were found in unspecified positions in burials (312 and an unidentified burial). With the exception of a knife blade found with the child burial, no other artifact is identified from a burial with a spatulate bone. We are unaware of such artifacts from any other assemblage. Their delicate nature would seem to preclude a utilitarian function.

As mentioned previously, there are two exceptional burials that have associated burial goods beyond what might be expected as personal carrying gear, ornaments, or weapons remnant from the massacre. These burials are both characterized by relatively large numbers of blades arrayed to the sides of the burials.

The largest single burial assemblage in the cave was associated with No. 196, a middle-aged adult male with whom were found 24 bifacially flaked blades, a fragmentary red cloudblower pipe, chunks of red ochre and specular hematite, a "round stone," and a bone "awl." Most of the bifaces were arrayed in three groups—11 upon the right arm, six to the right of the face and six to the left of the face. The largest and most impressive blade in the Cave 7 collection (No. 198) was found "between the ribs of the right breast" of this individual. The cloudblower, red ochre, and round stone were found with the group of bifaces to the right of the face, while the specular hematite and "awl" were with the bifaces to the left of the face. Since we have no data on the precise orientation and relative placement of the artifacts within the groupings, we cannot determine whether the bifaces were stacked, piled, arrayed side by side, hafted, etc. The pigments and the points may have been functionally related, as indicated by the presence of fine glitter from powdered specular hematite on one point, and remnants of yellow ochre on another.

The second of the two special burials, No. 378, contained a smaller and less diverse assemblage, including a bone bead, a turquoise pendant, one "cut bone," a bone awl and 14 notched and (predominantly) unnotched bifaces. The awl and all blades were found on the left arm. The proveniences of the cut bone

and the ornaments are not specified. This burial was not examined by Turner, and its sex and age are unknown.

It is reasonable to assume that the two individuals buried with the groups of blades represent individuals of special status, perhaps "warriors of valor" as suggested in the "H" article of 1894.

Finally, mention should be made of a pair of "sheep horns" (86, 87) found between two adult skeletons (77 and 78, listed with 77 in the skeletal inventory), neither of which produced any other artifact. Though the horns were not examined, they are assumed to be desert bighorn sheep horns. They may have been part of a decayed headdress, as no mention is made of an associated skull.

In summary, the artifact assemblage from the Basketmaker level of Cave 7 is characterized by a high percentage of bifacially flaked blades, assorted personal items, and a near absence of preserved perishables. The bifaces are predominantly diagonally-notched and unnotched forms, the former including a number of knife-sized specimens. Some of the cave's Basketmaker population was clearly killed by stabbing with stone knives and bone daggers, thus raising the possibility of systematic execution rather than death by projectile in conventional battle. Large bone tools incorrectly identified as "awls" were apparently used, at least in some cases, as stabbing knives or daggers. Two burials, one a middle-aged adult, the other of unidentified sex and age, were buried with inordinate numbers of bifaces and other offerings. These may represent warriors and/or priests of special status. Five finely-worked, bone spatula-like objects of unknown function were found with burials of an adult woman, an adolescent, a child and two unidentified burials. All lacked other grave goods except one, which had an associated biface. Two sheep horns, possibly remnants of a bighorn sheep headdress, were found between two adult male skeletons.

Analysis of the Human Skeletal Remains from Cave 7 with Respect to Violence and Possible Cannibalism

Until recently (Wilcox et al. 1989; Haas 1990a), Southwestern archaeologists have paid almost no formal or theoretical attention to human skeletal finds documenting violent episodic events. The Cave 7 assemblage provides evidence of such an event and important insights into early Anasazi conflict.

There is some ambiguity as to the exact number of burials found in Cave 7 by the Wetherill party. All accounts agree that the number was around 90, and some accounts place the number at 92. That number is compatible with Wetherill's catalog, which lists 88 skeletons and one "group of skeletons" (no. 246) from Cave 7 (It does not agree with the American Museum of Natural History's physical anthropology catalog, which contains incomplete and sometimes inaccurately transcribed information.). Some of the individual skeletons actually included the undifferentiated remains of more than one individual, however, and it is likely that Richard Wetherill's report (R. Wetherill 1896e) of 97 skeletons from the site is the most accurate tally. This corresponds closely to the total of 96 studied and listed-but-not-located individuals inventoried at the end of this paper. Four of the skeletons were from the Puebloan deposits of level 1.

In 1983, Turner published summary statistics on the Cave 7 skeletons which he had studied. There, he noted 37 males, 15 females, and seven of indeterminate sex. Working with data from the American Museum catalogs, he was at that time unable to associate more than 24 of the individuals with Cave 7. He later found and restudied 61 of the 92+ Cave 7 individuals, two more than reported in 1983. These include 40 males, 15 females, and six of indeterminate sex.

As can be seen in the accompanying table, skeletal inventory, and Figures 8.15–8.31, almost two-thirds of the restudied 61 Cave 7 skeletons examined by Turner bear physical

Table 8.1.
Cave 7 Vital Statistics and Perimortem Damage (61 individuals personally examined by Turner)

Vital Statistics & Perimortem damage	N	%
Males	40/61	65.6
Females	15/61	24.6
Sex ?	6/61	9.8
Adults	52/61	85.2
Subadults	9/61	14.8
Damaged males	24/40	60.0
Damaged females	4/15	26.7
Damaged sex ?	1/6	16.7
Damaged adults	25/52	48.1
Damaged subadults	4/9	44.4
Pooled damaged	29/61	47.5

evidence of perimortem, human-inflicted trauma. Of those examined and found to be lacking direct skeletal evidence, 20 more were said by Wetherill to have had projectiles or knives among their bones or to have been disarticulated or disarranged in a manner suggesting ad hoc disposal if not violent demise. This raises the incidence of demonstrated or probable trauma to 80 percent of the total excavated series. We may assume that the actual percentage was still higher, since terminal wounds do not always leave physical evidence. Of the 35 Cave 7 individuals not examined by Turner, 13 were said by Wetherill to have been associated with projectile points or knives, or to have been disarticulated or abnormally arranged. We may therefore safely assume that study of the bones missing from the present-day collection would raise the percentage of demonstrably slain individuals among this segment of the Basketmaker population to a level even higher than that in the studied sample.

Taphonomy and Demography

The Cave 7 massacre can be reconstructed to some extent by taphonomic considerations of the bone. Damage inflicted at or around the time of death ("perimortem") can be distinguished from damage inflicted to bone significantly later than the time of death ("postmortem") (Turner 1983; Turner and Turner 1990). There is massive perimortem damage to several Cave 7 heads and faces, indicating bludgeoning. There are embedded stone projectile points in bone that show no sign of healing or infection (Wetherill's reference to a partly healed vertebral wound was not corroborated by our examination because the specimen could not be located.) Some crania have cut marks that suggest scalping.

More males have perimortem bone damage than do females and children. Assuming that Wetherill saved all the skeletal remains from Cave 7, as he says he did in a letter to B. T. B. Hyde (R. Wetherill 1894a), then the demographic profile is far from natural. As Table 1 shows, there are almost three times more Cave 7 males than females, as determined by cranial robusticity and size (post-cranial elements being largely missing from the collection at the time of Turner's examination). Most large prehistoric cemeteries have about half males and half females. Fifteen percent of the Cave 7 series are children, far from the expected 50 percent present in large prehistoric cemetery populations (Turner and Turner 1990). It should be noted that this statistic may be skewed somewhat by the fact that a high percentage of the remains identified as children by Wetherill are missing from the studied series—12 of the 35 Cave 7 individuals not studied are said by Wetherill to be children, and comparison of Turner's data with Wetherill's notes shows that Wetherill did not differentiate adolescent skeletons from adults. Even so, the percentage of subadults in the Cave 7 series appears to be meaningfully low. These values suggest that the inhabitants of Cave 7 had been attacked by raiders who killed far more men than women and children. It can be hypothesized that some women and children were taken captive.

If we assume 1) that most of the Cave 7 men had been killed, 2) that the live sex ratio had been about equal, 3) that any wounded or

killed assailants would not have been formally buried by the survivors, 4) that there should have been as many children as adults, and 5) that the Basketmaker remains in Cave 7 represent a single event; then the size of the living Cave 7 Basketmaker group could have been more than 150 individuals. To bring off such an attack, there must have been at least as many assailants as killed men, that is, the raiding party would likely have had 40 to 50 or more warriors.

The perimortem bone damage to the studied Cave 7 skeletons involves mainly fractured cranial vaults, faces, and lower jaws. There are a few post-cranial wounds with embedded stone weapon points, and one possibly dismembered leg with flesh-stripping. Although the latter is suggestive of cannibalism, it alone is not enough evidence, since there is no associated long-bone smashing and burning (Turner 1983). Head damage is, however, brutally severe. Fracture patterns indicate that both clubs and hammer-like weapons were used to beat the victims, though no such weapons have been reported from indisputable Basketmaker assemblages (see discussion under "Level 2 [Basketmaker] Assemblage," above). This beating may have been a form of torture. Cut marks in at least three of the studied Cave 7 males show that they were scalped as well as beaten.

Associated burial goods and bone taphonomy also reveal that the bodies were formally buried soon after death: Many catalog entries indicate associated grave goods; Wetherill described the burial-pit setting; and there are almost no signs of scavenger damage by dogs, other carnivores, or rodents. It would seem that relatives, friends, or other concerned individuals quickly buried the victims; otherwise, there would have been scavenger damage in the form of tooth puncture marks and gnawing within a matter of a few days or weeks after the attack (Turner and Turner 1990).

There is interesting evidence for differential treatment of individuals interred in Cave 7. It has already been noted that some of the individuals in the cave were buried with personal objects such as cloudblowers and pigments next to their heads. These and many others were formally placed, often in a flexed position, and in some cases in rows in the bottom of large pits. In contrast to the more formal and typical burials, however, Wetherill's notes indicate that at least eight of the burials (skeletons 239–46, 324) were thrown into pits in more random heaps (skeletons 324, 239–246). Turner examined seven of these burials and determined them all to be males of various ages. The skeleton not examined by Turner is described by Wetherill as "Bones of child Inside of ribs of woman or(?) 244" (Anonymous nda). Since skeleton 244 was determined by Turner to be a male, the implications of this entry are unclear.

Given the widespread evidence of violence and mutilation in the Cave 7 population and an absence of significant diversity among the projectile points, such differential treatment of some individuals probably does not reflect multiple episodes of interment. Despite Wetherill's unexplained reference to the "Bones of child" in skeleton 243/244, we are intrigued by the possibility that the informally heaped bones may represent remains of the attackers, or at least of a social group other than the one whose survivors performed the interments. Data available at the time of this writing do not permit the assessment of similarities and differences between the formally buried and the randomly heaped populations.

The perimortem bone damage of the Cave 7 individuals reveals that lethal conflict was a part of Basketmaker life. Similar evidence was recovered by Wetherill from other sites, and such conflict was not limited to just the Basketmaker bands of southeastern Utah. There are a number of Basketmaker sites elsewhere, as well as later Anasazi sites, where skeletal remains unquestionably document marked conflict and inter-personal violence (Morris 1939:19; Wilcox et al. 1989;

Turner and Turner 1992). The Cave 7 demographic profile suggests that women and children may have been taken captive by the attackers. Massive trauma to the victims' heads and faces has no obvious theoretical explanation, but it takes little imagination to envision the damage as resulting from marked brutality and torturing on the part of the assailants. Southwest inter-group conflict (raiding, scalping, torture, taking of captives, etc.), convincingly documented in historic and ethnographic accounts, can thus be projected back in time at least 1500 years on the basis of Wetherill's Cave 7 discoveries. The large number of Cave 7 victims reveals with chilling clarity the scale of this conflict.

Cultural Affiliation and Age of Level 2

We have thus far accepted without challenge the assumption that the pre-Puebloan remains from Cave 7 do indeed represent the Basketmaker, rather than an even more ancient Archaic culture or perhaps even a force of alien intruders. In the absence of either the perishable artifact assemblage by which the Basketmaker culture is best known or any direct dates from the Cave 7 material, that assumption demands some critical attention. We believe the Level 2 assemblage to be of Basketmaker affiliation for several reasons, none conclusive:

First, the skeletal remains from Cave 7 do not differ in any significant way from Basketmaker remains recovered elsewhere. Unfortunately, few pre-Basketmaker burials have been recovered in the Southwest, and it is unclear how physically similar or different the local Basketmaker and Archaic populations were. It is also as yet unclear how the Basketmaker people compared physically to their neighboring contemporaries to the north.

Second, as discussed above, the large assemblage of projectile points from Cave 7 is morphologically similar to Basketmaker point assemblages known from other sites. Unfortunately, classic Basketmaker corner- and side-notched dart points are reminiscent of, and at least in part contemporary with, the long-lived Elko Series which is associated with Archaic occupations in the Northern Colorado Plateau and the Great Basin (Holmer 1986:101). While we are aware of no compilation of empirical data to support this, it is our intuitive observation that Basketmaker points do differ somewhat from their Elko Series cousins in blade margin morphology and the refinement of the flaking. On the basis of our perusal of available literature, Elko points normally exhibit straight margins and an Isosceles triangular form, and a utilitarian, relatively course flaking style. Basketmaker points, in comparison, are somewhat more elongate, have smoothly curving, convex margins, and generally exhibit a greater degree of control and precision in the finished flaking. The Cave 7 points almost universally share the convex margins and relatively well controlled flaking of the Basketmaker points.

Third, polished stone cloud blower pipes of the style found with the Cave 7 burials are a common component of Basketmaker assemblages. Unfortunately, pipes are also known from Archaic contexts as well (Loud and Harrington 1929, Haury 1950:329–52, for example), and the range of variability in Archaic pipes may overlap with those of the Basketmakers.

Finally (and this is admittedly even weaker than the above arguments), the use of caves as burial sites is a hallmark of Basketmaker culture in northern Arizona and southern Utah (Amsden 1949:95). Archaic burials, in contrast, have rarely been found in caves.

While the above argument is less than overwhelming, we believe that it supports the reasonable conclusion that the Cave 7, Level 2 materials do indeed represent the Basketmaker II culture. Since recent work (Smiley, this volume) has pushed the beginning dates for Basketmaker back beyond 2500 years ago, and the Basketmaker culture

persisted in its early form (pre-ceramic) until about 1500 years ago, we are left with an interval of over a millennium during which the Cave 7 interments and associated events could have taken place. Absolute confirmation or refutation of the Basketmaker II affiliation and a more precise determination of age will require direct dating of the bone, the wooden knife handle, or other material obtained from further excavation in the site.

Conclusions and Discussion

In conclusion, we are able to gain some important insights into the site of Wetherill's "Great Discovery" from his notes and correspondence combined with our direct examination of the curated collections. Despite numerous inconsistencies and mis-identifications in historic documents and photographs, we have been able to locate Cave 7 in Whiskers Draw and have formally documented it. According to the written records, several feet of previously disturbed Puebloan sediments overlay a number of pits in which were found the remains of more than ninety skeletons bearing evidence of massacre. From the shape of the skulls, the associated artifacts in these pits, and their stratigraphic position below the debris and walls of later cliff dwellers, Richard Wetherill first recognized the existence of the early Anasazi culture which we have since come to know as "Basketmaker."

Examination of samples of artifacts and skeletal remains from Cave 7 leads us to conclude that a high percentage, possibly all, of the Basketmaker individuals interred in Cave 7 were massacred. Some of the individuals apparently died from being stabbed by knives or bone daggers, others probably died from atlatl dart wounds, and some show evidence of bludgeoning, scalping, and possible torture. There is no convincing evidence of cannibalism associated with these remains. Demographics suggest that the massacre may have involved the capture of women and children.

The importance of the discovery in Cave 7 has been widely recognized and is discussed by Frank McNitt in his detailed biography of Richard Wetherill (1966:64–72). We want to further emphasize two aspects of Wetherill's discovery and his interpretations: his pioneering use of the principle of stratigraphic superposition, and his recognition of the massive violence directed against the scores of Basketmaker bodies recovered from Cave 7.

First, Wetherill has not been given all the credit he deserves for first discovering a relative chronology in Southwest sites, that is the Basketmaker–Pueblo sequence based on the Cave 7 stratigraphy. For example, that discovery was credited to George H. Pepper (1902) in an historical review of Southwest archaeology by A. H. Schroeder (1979), published in the authoritative Smithsonian Handbook of North American Indians. While Wetherill lacked Pepper's formal archaeological training and was considerably less rigorous in his methods than he might have been, such deficiencies are insufficient to justify denying the man the credit he deserves.

Second, it is a very rare Southwestern archaeologist or ethnologist who has given thought to what is implied by the massacred Basketmaker people. Until very recently, Southwestern archaeologists have paid almost no formal or theoretical attention to human skeletal finds documenting violent episodic events such as that which occurred in Cave 7. The first stratigraphically-identified Basketmakers had been massively beaten, mutilated, scalped, and probably tortured. Why has this stark fact been ignored by Southwest prehistorians? Our search in older and recent textbooks on Southwest archaeology reveals that Wetherill and his Basketmaker discovery may be mentioned (e.g. McGregor 1965), but none remarks on the brutalized condition of the Cave 7 people. Textbooks aside, we have failed to find a single professional paper on Southwest archaeology (excluding recent studies in human taphonomy) published in the last 50 years that mentions the traumatized Cave 7

Basketmaker people. Such systematic omission of important cultural information reveals an unfortunate tradition of bias on the part of Southwestern anthropologists, presumably rooted in cultural preconceptions or political considerations.

Inventory of Human Skeletal Remains and Artifacts from Cave 7

In the following inventory, field numbers, provenience and artifact association information come from Wetherill's field artifact catalog. American Museum of Natural History Catalog notes are direct quotes about each individual or set of bones from the Physical Anthropology catalog of the American Museum, indicating the completeness or composition of each skeleton represented by a catalog entry. Age and sex are based on Turner's assessment using cranial robusticity, head size, dental development, dental wear, cranial suture closure, and variation in alveolar bone. A large amount of post-cranial material could not be located in the collection. Skull shape was estimated, not measured. Perimortem damage includes any fractures, crushing, cut marks, or anvil abrasions to the cranium or mandible inflicted at or around the time of death.

Field No. 55

Provenience: Section 1, three feet
Wetherill description: "Skeleton"
Artifact Associations: Corrugated jar 56/H12882, basket 57/H12883, "hamper" 67/H12968

Skeletal data:

- AMNH No. 7445
  - Catalog notes: "Cr"
  - Age: Adult Sex: Male
  - Skull shape: Deformed. Deformation, associated pottery jar and shallow depth indicate a post-Basketmaker burial.
  - Perimortem damage: No apparent damage by humans or animals.

Field No. 73—See 74

Field No. 74

Provenience: Section 3, five feet
Wetherill description: "Skeleton" See Nos. 74–81 together, "heads all north bodies side by side knees up and partially mummified."
Artifact associations: Knife handle on knees, pipe on left side of jaw (a basket found "above" this burial appears to be from upper, Puebloan sediments.)

Skeletal data:

- AMNH No. 7332
  - Catalog notes: "Cr, Md and skeleton minus some carpals, tarsals, metacarpals and tarsals. Also phalanges. Sacrum twisted."
  - Age: Adult Sex: Male
  - Skull shape: Long
  - Perimortem damage: There is no damage by humans or animals.
- AMNH No. 7490(?)
  - Catalog notes: "Mandible"
  - Note: Unstudied. Attributed field no. 73, which is Wetherill's number for the pipe associated with skeleton 74. This mandible may therefore be associated with skeleton 74.

Field No. 75

Provenience: Section 3, five feet
Wetherill description: "Skeleton" See No. 74
Artifact Associations: None

Skeletal data:

- AMNH No.7333
  - Catalog notes: "Parts of skeletons" (a listing follows entry)
  - Age: Adult, middle-age Sex: Male
  - Skull shape: Long and undeformed
  - Perimortem damage: A complete skull without mandible. Although there is no breakage, there are cut marks on the superior nuchal line of the occipital bone, and on the right lambdoidal suture suggesting scalping. There are no carnivore or rodent tooth marks or gnawing striations. Another mandible (7333K, adult, male ?), has no human or animal damage.

Field No. 76

Provenience: Section 3, five feet
Wetherill description: "Skeleton" See No. 74
Artifact Associations: "Spearhead" inside ribs

Skeletal data:

- AMNH No. 7334
  - Catalog notes: "Cr, Md, pelvis, scapulae, (10) ribs, right Fe, Ti and Fi, Vc 2, 3, Vd, 1, 3, 5, 6, 7, 10; Vl, 1, 2, 3."
  - Age: Adult, middle-aged or older
  - Sex: Male
  - Skull shape: Long and undeformed
  - Perimortem damage: The left zygomatic and temporal bones are broken. The right tibia and femur have anvil abrasions and cut marks. There is no animal damage.

Field No. 77 (Figures 8.15 and 8.16)

Provenience: Section 3, five feet
Wetherill description: "Skeleton" See No. 74.
Artifact associations: Two "sheep horns" found between 77 and 78

Skeletal data:

- AMNH No. 7335 (Figures 1 and 2)
  - Catalog notes: "(2 Cr, 13 pieces) (Md, 2), nearly complete skeleton minus most of hands and feet
  - Age: Adult, middle-aged or older
  - Sex: Male
  - Skull shape: Long and undeformed
  - Perimortem damage: There is severe damage. Blows struck right side, front, and rear of head. Base of skull and left temporal bone are missing. Left ascending ramus of mandible is broken off by two blows. There are cut marks on the left temporal line near the brow ridge, and on the mid-frontal above the brow ridge, suggesting scalping. There are no animal tooth marks or gnawing.

Figure 8.15 Skull breakage of Cave 7 number 77, an adult Basketmaker male, that occurred at or around the time of death (perimortem). This severe and extensive degree of perimortem damage is characteristic of the treatment received by many of the Cave 7 victims.

Figure 8.16 This view shows how much of the head and face were broken from the mandible of number 77. Only the right condyle probably remained in articulation with the right temporal bone at the end of the beating.

- AMNH No. 7335L.
  Age: Adult, middle-aged
  Sex: Male (?)
  Skull shape: Unknown
  Perimortem damage: Left half of mandible is all that remains. There are no cut marks, animal gnawing or tooth marks.

Field No. 78 (Figures 8.17 and 8.18)

Provenience. Section 3, five feet
Wetherill description: "Skeleton." See No. 74
Artifact associations. None

Skeletal data:

- AMNH No. 7336
  Catalog notes: "(Cr, 6) (Md, 2) and nearly complete skeleton - Ulnae. Carpals and tarsals gone. Some extra ribs and metatarsals in lot."
  Age: Adult, middle-aged or older
  Sex: Male
  Skull shape: Long and undeformed
  Perimortem damage: Right side of vault is fractured at top and front. Mandible broken in half and right ascending ramus is broken off. There are anvil abrasions on the right frontal bone, near the left mastoid process, and on

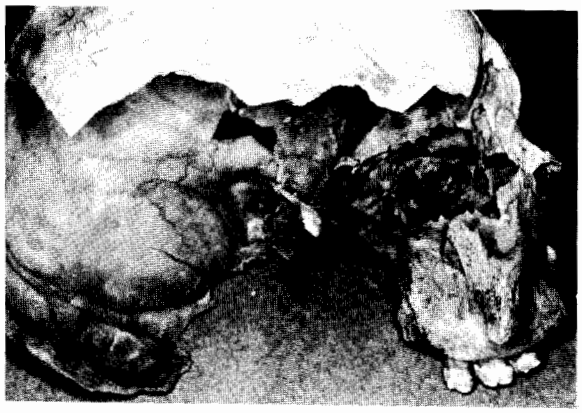


Figure 8.17 Perimortem skull breakage of number 78, an adult male. The right side of the head had received severe trauma.

Figure 8.18 The mandible of number 78 has been broken in the middle and at the right ascending ramus. The mandible is a very stron bone and it's breakage shows how severly this male Basketmaker was clubbed or stoned at or around the time of death. The other small skull fragments testify to the destructiveness of the assailant(s).

Figure 8.19 An obsidian weapon point embedded in the sacrum of number 79, an adult male. According to one Wetherill account, this point was an intact "five inch obsidian blade," but only the embedded tip remained at the time of our examination. There is no sign of healing or infection.

the interior surface of the left scapula, which also has a 1/2 inch circular puncture wound. There is no animal damage.

Field No. 79 (Figures 8.19 and 8.20)

Provenience: Section 3, five feet

Wetherill description: "skeleton." See No. 74

Artifact associations: Spearpoint intruded into pelvis. According to another Wetherill description (Wetherill 1896), this was a "five inch obsidian blade." The blade had been snapped off flush with the bone prior to Turner's examination, leaving only the embedded tip (see Figure 8.18).

Skeletal data:

- AMNH No. 7337

  Catalog notes: "(Cr and Md, pel. scap, clav. ul, (1) Hu, (14) ribs, part of (1) tarsus and carpus, V cerv. 2-6, V dors. 3, V lumb 4. Sacrum and left innominate pierced by obsidian spear."

  Age: Adult, middle-aged or olde

  Sex: Male. Robust heavy skeleton

  Skull shape: Long and undeformed

  Perimortem damage: Maxillary and mandibular anterior teeth are blown out. Nose is crushed all around the nasal border. There are no cut marks or animal gnawing and tooth marks.

Figure 8.20 Another view of number 79, showing crushed nasal borders and smashed anterior tooth sockets.

Figure 8.21 A stone weapon point penetrates the ventral surface of the left first rib of number 80, an adult male. There is no healing or infection.

Figure 8.22 Number 80 also received facial wounds—a circular penetration of the man's left maxilla, and a smashing blow to the upper anterior teeth, forcing out at least the right central incisor and fracturing the crowns of both upper canines. Note that the shape and size of the circular penetration appear to match the large bone "awls" (daggers) found in association with some of the Cave 7 skeletons (see discussion under "Artifacts and Burial Associations," this paper).

Field No. 80 (Figures 8.21 and 8.22)

Provenience: Section 3, five feet
Wetherill description: "Skeleton." See No. 74.
Artifact associations: Projectile point or knife in left first rib

Skeletal data:

- AMNH No. 7338
  - Catalog notes: "Cr, Md, (1) Fe, (1) Hu, pr Ti, Fi, Scap, Clav, Pal, (19) ribs, sternum, Vc 2-6, Vd, 7-12, Vl, 1-5 (Rib No. 1 bears arrowpoint - sternum perforated)"
  - Age: Adult, middle-aged
  - Sex: Male
  - Skull shape: Intermediate length and undeformed
  - Perimortem damage: There is a circular hole 7-8 mm in diameter that penetrates the left malar. Left horizontal ramus of mandible is chopped on inferior border. A stone knife or point is embedded in left first rib. Left first and second lower incisors are knocked out. There are no cut marks or animal gnawing or tooth marks.

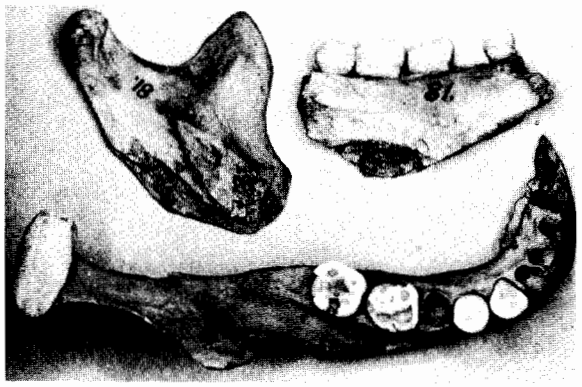


Figure 8.23 Number 81, an adult male, had his mandible broken in at least three places by one or more very powerful blows. The inferior portion of the left horizontal ramus has been completely sheared away (and is missing).

Figure 8.24 A view of the perimortem skull damage of number 81. Damage is primarily to the right side of the vault, with the right half of the upper jaw sheared off. This severe amount of trauma, if administered while the man was alive, probably would have been lethal in a matter of seconds due to arterial bleeding and shock. Note that there is no cranial deformation.

Field No. 81 (Figures 8.23 and 8.24)

Provenience: Section 3, five feet
Wetherill description: "Skeleton." See No. 74
Artifact associations. Stone pipe found in head of skeleton 81, projectile point in ribs

Skeletal data:

- AMNH No. 7339
  - Catalog notes: "(Cr 4) (Md 2) Nearly complete skeleton - lacking hands."

Age: Adult, middle-aged.
Sex: Male.
Skull shape: Long and undeformed
Perimortem damage: A broken but complete skull and mandible. Right side, rear, and right side of face had received fracturing blows. The left zygomatic bone is broken. The mandible is broken into three pieces with the ascending ramus broken off. There is anterior maxillary and mandibular tooth damage, and the left maxillary molars have crushed lingual surfaces. There are no cut marks, animal gnawing, or tooth marks.

Field No. 92

Provenience: Section 3, five feet
Wetherill description: "Skeleton. Found with group of skeletons basket on head." ("Group" probably refers to Nos. 74-81)
Artifact associations: None (the basket referred to in the field catalog is not represented among the collections, and probably can be counted among the perishable objects which were too decayed for recovery)

Skeletal data:
- AMNH No. 7340
  Catalog notes: "(Cr and Md and parts of 2 skeletons. 17 ribs. 1 In. 1 Pat. - Fi, Ti, Fe. 2 Ul, 2 Ra, 2 Hu- St-Vc and Vd 9-12- Vl. 1-2 As, 6 met. 4 carp."
  Age: Adult, middle-aged
  Sex: Male
  Skull shape: Long and undeformed
  Perimortem damage: Skull and mandible are complete and undamaged. Jaw does not belong to skull—two individuals. There are possible animal tooth marks on the left humerus.

Field No. 93

Provenience: Section 4, four feet
Wetherill description: "Skeleton. Found with group of skeletons." (probably referring to Nos. 74-81)
Artifact associations: None

Skeletal data:
- AMNH No. 7341
  Catalog notes. "Cr. Md, nearly complete skeleton except hands and feet."
  Age: Adult, young
  Sex: Male (?)
  Skull shape: Long and undeformed
  Perimortem damage: Skull and mandible are complete and undamaged. There are no cut marks, animal gnawing, or tooth marks.

Field No. 96

Provenience: Section 2, six feet
Wetherill description: "Skeleton of child...found on East line of section 2 1(?)'from cliff wall."
Artifact associations: None

Skeletal data:
- AMNH No. ?
  Not examine

Field No. 97

Provenience: Section 3, six feet
Wetherill description: "Skeleton, head north & at feet of 75 knees at chin face down"
Artifact associations: None

Skeletal data:
- AMNH No. 7342
  Catalog notes: "Cr and Md (extra occ. and par.) Leg bones, pelvis, scap. Left arm bones, 9 ribs, 1 clav., 1 pat., 2 m and Vc (4), Vl (1)"
  Age: Adult, middle-aged
  Sex: Male
  Skull shape: Slight lambdoidal deformation
  Perimortem damage: There is no perimortem damage by humans or animals. Mandible is missing.

Field No. 100

Provenience: Section 2, five and one half feet above floor.
Wetherill description: "Skeleton, 1' south of 96 feet west."
Artifact associations: Projectile point in right ribs

Skeletal data:
- AMNH No. 7343
  Catalog notes: "(Cr 9) Md and nearly complete skeleton of adolescent. Extra Hu, 2 Ti, Fi, Rad, Meta- Tars and phal."

Age: 15 to 18 years
Sex: Female (? with very large teeth, possibly male)
Skull shape: Round (?) and undeformed
Perimortem damage: Skull is complete but largely disarticulated. One blow possible to basal occiput. There are no cut marks, animal gnawing, or tooth marks.

Field No. 102

Provenience: Section 4, depth not given
Wetherill description: "Skeleton, north 1' of skeleton 93."
Artifact associations: None

Skeletal data:
- AMNH PA No. 7400
  Catalog notes: "Cr and Md and part of adolescent skeleton"
  Age. 9 to 10 years
  Sex: Indeterminable
  Skull shape: Uncertain
  Perimortem damage: There is no apparent damage by humans or animals.

Field No. 103

Provenience: Section 3, six feet
Wetherill description: "Skeleton. Lowest and centre (sic) of group - spear head sticking in back bone."
Artifact associations: Broken tip of spearpoint and whole spearpoint in section of back

Skeletal data:
- AMNH PA No. 7344
  Catalog notes: "Cr and Md and parts of 2 skeletons. Pel, 24 ribs, 13 Vert. pair scap, clav, Ti, Fi, Pa, U1, single Hu, Rad, St and foot bones."
  Age: Adult, young
  Sex: Female
  Skull shape: Intermediate in length and undeformed
  Perimortem damage: Skull and mandible are complete. There is no breakage by humans or animals.

Figure 8.25 Number 104 is an adult male. The total destruction of the nose is clearly evident. Also present on this specimen, though not evident in the photograph, are small cut marks on the forehead and elsewhere that indicate scalping.

Field No. 104 (Figure 8.25)

Provenience: Section 2, five and one half feet
Wetherill description: "Skeleton. Head east face up."
Artifact associations: Stemmed pipe on ribs

Skeletal data:
- AMNH PA No. 7345
  Catalog notes: "Cr. and Md, part of skeleton. Pr. of Fe, Hu, Ul, clav. Scap. 1 Ra, pel. 10 ribs. Vd 4-12, U1 1-5 p foot bones."
  Age: Adult, middle-aged
  Sex: Male
  Skull shape: Intermediate in length and undeformed

Perimortem damage: Skull and mandible are complete. Nose is totally crushed and broken away from face. There are cut marks on the right temporal line near the brow ridge, on the mid-frontal one inch above the brow ridge. Other cut marks occur on the distal aspect of the right parietal. Scalping is indicated. There are no animal tooth marks or gnawing.

Field No. 112

Provenience: Section 2, four feet
Wetherill description: "Bones of child. Head not found at less depth than others."
Artifact association: None

Skeletal data:
- AMNH PA No. ?
  Not examined

Field No. 113, 117(?)

Provenience: 113 not specified; 117, Section 2, depth not specified.
Wetherill descriptions: "Skeleton(s)."
Artifact associations: Projectile point in ribs of skeleton 113, point down. Projectile point with skeleton 117.

Skeletal data:
- AMNH PA Nos. 7417 and 7418
  Catalog notes: "Fragments of small and large skeleton"
  Age: Adult Sex: Female
  Skull shape: Long
  Perimortem damage: There is no bone breakage by humans or animals.

Field No. 116

Provenience: Section 3, six feet
Wetherill description: "Skeleton. 10 ft from N.W. corner S.3 face down knees at chin."
Artifact associations: Shell fragments on breast

Skeletal data:
- AMNH PA No. 7384
  Catalog notes: "(Cr-Md) and long bones and part of skeleton"
  Age: Adult Sex: Female
  Skull shape: Long
  Perimortem damage: There is no damage by humans or animals.

Field No. 117

? (See No. 113)

Field No. 118

Provenience: Section 3, five feet
Wetherill description: "Skeleton. With no 116 1' above, face south, head broken, hands on feet." (commas added)
Artifact associations: None

Skeletal data:
- AMNH PA No. ?
  Not examined

Field No. 128 (Figures 8.26 and 8.27)

Provenience: Section 2, five feet
Wetherill description: "Skeleton. Head north face up feet at pelvis knees up."
Artifact associations: Bone beads on neck, projectile point in vertebra

Skeletal data:
- AMNH PA No. 7444
  Catalog notes: "Vertebra with arrow point"

Figure 8.26 This adult male, number 128, has chopping marks on and near the left mastoid process. Such cuts could have been due to scalping or attempts to sever the head from the neck.

Figure 8.27 Another view of number 128, showing that the man's nose had been broken, like so many of the Cave 7 crania. Antemortem torture or perimortem mutilation, in addition to fighting, may have been involved.

Age: Adult
Sex: Uncertain
Skull shape: Unknown
Perimortem damage: Projectile wound. Damaged vertebra not found.

- AMNH PA No. 7447 (Figures 8.17 and 8.18).
  Catalog notes: "Cr."
  Age: Adult Sex: Male
  Skull shape: Intermediate in length, slight deformation
  Perimortem damage: Right zygomatic bone is broken off. Nose is broken. There are cut and chop marks on left mastoid region. Head had been severely mutilated.

Field No. 133

Provenience: Catalog does not give precise origin.
Wetherill description: "Skeleton. Face up knees up feet at pelvis hands at side."
Artifact associations. None

Skeletal data:

- AMNH PA No. 7346
  Catalog notes: "Cr, Md, and long bones"
  Age: Adult, old Sex: Male
  Skull shape: Long and undeformed
  Perimortem damage: Skull and mandible are complete. There is no bone damage by humans or animals.

Field No. 134

Provenience: Section 3, three feet
Wetherill description: "Skeleton."
Artifact association: None

Skeletal data:

- AMNH PA No. 7348
  Catalog notes: "Md and nearly complete skeleton"
  Artifact associations: None
  Age: Adult, old
  Sex: Indeterminate
  Skull shape: Uncertain
  Perimortem damage: None. Only mandible is present.

Field No. 137

Provenience: Section 2, six feet
Wetherill description: "Skeleton. Head badly broken doubled up."
Artifact associations: Projectile point in skull

Skeletal data:

- AMNH PA No. 7347
  Catalog notes: "(Cr 7) (Md 2) and fragments of skeleton."
  Age: 15 to 18 years
  Sex: Male (?)
  Skull shape: Long and undeformed
  Perimortem damage: Incomplete skull and mandible. Most sutures are sprung open. Face and temporal bones are broken from vault. Left ascending ramus of mandible is broken off. Blows were directed to the right side, base, and back of head. Teeth are unbroken. There are cut marks on the right parietal, and on the right side of the frontal bone, suggesting scalping. Anvil or hammerstone abrasions occur on the right temporal bone. There are no animal tooth marks or gnawing.

Field No. 138

Provenience: Section 3, six feet
Wetherill description: "Skeleton."
Artifact associations: None

Skeletal data:

- AMNH PA No. 7356
  Catalog notes: "(Cr - deformed), Md and nearly complete skeleton"
  Age: Adult

Sex: Male
Skull shape: Deformed
Perimortem damage: There is no identifiable damage by humans or animals.

Field No. 167 (?apparently misnumbered—167 is a "throwing stone" from another site in Wetherill's field catalog.)

Provenience: unknown.
Wetherill description: Unknown due to misnumbering.
Artifact associations: Unknown due to misnumbering.

Skeletal data:
- AMNH PA No. 7446
  Catalog notes: "Cr."
  Age: Adult
  Sex: Male (?)
  Skull shape: Intermediate in length, no deformation
  Perimortem damage: No apparent damage by humans or animals.

Field No. 189

Provenience: Section 2, five and one half feet
Wetherill description: "Skeleton. Back up head down appeared to have been in sitting posture and fallen forward with child in arms."
Artifact associations: Bone awl under left breast

Skeletal data:
- AMNH PA No. 7349
  Catalog notes: "Cr, Md, and nearly complete skeleton."
  Age: Adult, young
  Sex: Male
  Skull shape: Intermediate in length and undeformed
  Perimortem damage: Skull and mandible are complete. There is minor breakage at left nasal bone area. There are no cut marks, animal gnawing, or tooth marks.

Field No. 190

Provenience: Section 2, six feet
Wetherill description: "Skeleton of child." Found "in arms" of 189
Artifact association: None

Skeletal data:
- AMNH PA No. ?
  Not examined

Field No. 191

Provenience: Section 3, five and one half feet
Wetherill description: "Skeleton. Head west face up bones scattered."
Artifact associations: Shell and turquoise earring or pendant on breast

Skeletal data:
- AMNH PA No. 7350
  Catalog notes: "(Cr. 3) (Md) and fragments of skeleton"
  Age: Adult, middle-aged
  Sex: Male (?)
  Skull shape: Intermediate in length and undeformed
  Perimortem damage: An incomplete vault and mandible. Posterior vault, mandible near symphysis, and ascending ramus of mandible were broken off long after death, precluding any reliable identification of perimortem damage. Teeth are undamaged. Cut marks, animal gnawing and tooth marks are absent.

Field No. 196

Provenience: Section 3, six feet
Wetherill description: "Skeleton. Face east knees east feet under pelvis."
Artifact associations: Part of red pipe, red pigment, round stone and seven projectile points or knives at right of skull; six projectile points or knives, a bone awl and a piece of galena at left of skull; five inch knife between right ribs; 11 projectile points or knives along right arm.

Skeletal data:
- AMNH PA No. 7351
  Catalog notes: "(Cr 10) (Md) and nearly complete skeleton (Fragmentary)"
  Age: Adult, middle-aged
  Sex: Male
  Skull shape: Long and undeformed
  Perimortem damage: Skull and mandible mainly complete. Posterior vault, mandible near symphysis, and ascending ramus of mandible are broken off. There are no cut marks, no

damage to teeth, and no animal gnawing or tooth marks.

Field No. 228

Provenience. Section 2, six feet
Wetherill description: "Skeleton. Head south west face up feet at pelvis."
Artifact associations: None

Skeletal data:
- AMNH PA No. 7352
  Catalog notes: "Cr. Md, and nearly complete skeleton."
  Not found, not examined

Field No. 234

Provenience: Section 0, 6 inches
Wetherill description: "Parts of child's skull."
Artifact associations: None

Skeletal data:
- AMNH PA No. ?
  Not examined

Field No. 238

Provenience: Section 0, one foot
Wetherill description: "Skeleton. Face down head had been turned over at same time as the rest of the body was on its back situated in NE corner section 0 remains of corn and squash seeds found with 238."
Artifact associations: Corn and squash seeds

Skeletal data:
- AMNH PA No. 7353
  Catalog notes: "Cr, Md, and nearly complete skeleton."
  Age: Adult
  Sex: Female ?
  Skull shape: Round and deformed
  Perimortem damage: Skull and mandible are complete and show no human or animal damage.

Field No. 239

Provenience: Section 2, six feet
Wetherill description: "Skeleton. (Skeletons) 239, 240, 241, (242?), 243 all in a pile could not separate bones heads were less than 1 ft apart in row—faces up."
Artifact associations: None

Skeletal data:
- AMNH PA No. 7358
  Catalog notes: "Cr and part of skeleton (badly broken)"
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: There is no identifiable damage by humans or animals. Mandible is missing.

Field No. 240

Provenience: Section 2, six feet
Wetherill description: "Skeleton." See No. 239.
Artifact associations: None

Skeletal data:
- AMNH PA No. 7354
  Catalog notes: "(Cr 10) and Fragments of skeleton"
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: Right side of head is smashed. Squamous portion of left temporal bone is broken in half. Mandible is missing.

Field No. 241

Provenience: Section 2, six feet.
Wetherill description: "Skeleton." See No. 239.
Artifact associations: None

Skeletal data:
- AMNH PA No. 7357
  Catalog notes: "(Cr 11) (Md 2) badly broken skeleton - leg bones good."
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: Both mandibular ascending rami are broken. Vault is broken into triangular-shaped pieces. Cross and parallel sutural fractures evidence heavy blows. Much of the skull is missing.

Field No. 242

Provenience: Catalog does not give precise origin.
Wetherill description: "Skeleton." See 239.
Artifact associations: None

Skeletal data:
- AMNH PA No. 7361
  Catalog notes: "(Cr 12) (Md) parts of 2 skeletons (fragmentary)"

Age: Young adult
Sex: Male
Skull shape: Indeterminate
Perimortem damage: Totally broken skull and mandible. Individual had been severely mutilated.

Field No. 243

Provenience: Section 2, six feet
Wetherill description: "Bones of child. Inside of ribs of woman or (?illegible) 244."
Artifact associations: None

Skeletal data:
- AMNH PA No. ?
  Not examined

Field No. 244

Provenience: Section 2, six feet
Wetherill description: "Skeleton. Face up legs south feet at pelvis knees at chin."
Artifact associations: None

Skeletal data:
- AMNH PA No. 7355
  Catalog notes: "(Cr 4) and fragments of skeleton"
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: There is no identifiable damage by humans or animals.

Field No. 245

Provenience: Section 5, ? feet
Wetherill description: "Skeleton. Face up legs north feet at pelvis knees at chin."
Artifact associations: Projectile point at left of head.

Skeletal data:
- AMNH PA No. 7359
  Catalog notes: "Cr and Md. Part of skeleton badly broken"
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: There is no identifiable damage by humans or animals.

Field No. 246

Provenience: Section 2, six feet
Wetherill description: "Group of skeletons. Position unknown seems to have been thrown in a pile...."
Artifact associations: Eight projectile points and one bone awl among bones, two turquoise pendants "on top."

Skeletal data:
- AMNH PA No. 7362
  Catalog notes: "(2 Cr 3) long bones, metatarsals, pelvis, part of a mixed lot."
  Age: Adult, middle-aged
  Sex: Male
  Skull shape: Long and undeformed
  Perimortem damage: Skull base is broken, and mandible is missing. Left side of nose is fractured. Right post-orbital constriction is crushed. Blows damaged left side of face. There are no cut marks, animal gnawing, or tooth marks.

Field No. 247

Provenience: Section 5, five feet
Wetherill description: "Skeleton. Face up & west. feet at pelvis."
Artifact associations: None

Skeletal data:
- AMNH PA No. 7360
  Catalog notes: "Cr and Md nearly complete adolescent skeleton"
  Age: 6 to 10 years
  Sex: Indeterminable
  Skull shape: Long and undeformed
  Perimortem damage: There is no damage by humans or animals.

Field No. 248

Provenience: Section 0, six feet
Wetherill description: "Bones of child, position unknown."
Artifact associations: Projectile point and "bone tool" found with bones.

Skeletal data:
- AMNH PA No. not given
  Catalog notes: None—identified only in field catalog.
  Not examined

Field No. 259

Provenience: Section 1, six feet
Wetherill description: "Skeleton, bones scattered."
Artifact associations: None

Skeletal data:
- AMNH PA No. ?
  Not examined

Field No. 266

Provenience: Not given
Wetherill description: "Skeleton. Face up feet south knees over face."
Artifact associations: None

Skeletal data:
- AMNH PA No. 7363
  Catalog notes: "Cr and Md - nearly complete skeleton in good condition."
  Age: Adult Sex: Female
  Skull shape: Long
  Perimortem damage: There is no damage by humans or animals. Jaw does not belong to skull–two individuals.

Field No. 269

Provenience: Section 0, four feet
Wetherill description: "Bones of child. rotten, face up, knees west, center & 1' north of south line." (commas added)
Artifact associations: None

Skeletal data:
- ANMN No. ?
  Not examined

Field No. 270

Provenience: Section 2, five feet
Wetherill description: "Skeleton. Head north face east knees at chin."
Artifact associations: Bone awl, red pipe and bone bead against right side of head

Skeletal data:
- AMNH No. 7364
  Catalog notes: "Cr and Md - part of skeleton, long bones in good condition."
  Age: Adult, middle-age Sex: Male
  Skull shape: Long and undeformed
  Perimortem damage: Skull and mandible are complete and undamaged. There are no cut marks, animal gnawing, or tooth marks.

Field No. 271

Provenience: Section 3, four feet
Wetherill description: "Skeleton. Head East Face up feet at pelvis."
Artifact associations: None

Skeletal data:
- AMNH No. 7365
  Catalog notes: "Cr and Md, nearly complete skeleton in fine condition."
  Age: Adult Sex: Female
  Skull shape: Long
  Perimortem damage: There is no damage by humans or animals.

Field No. 282

Provenience: Section 6, five feet
Wetherill description: "Skeleton. Head east face up feet at pelvis arms at side."
Artifact associations: None

Skeletal data:
- AMNH No. 7366
  Catalog notes: "Cr and Md and good skeleton nearly complete."
  Age: Adult
  Sex: Female
  Skull shape: Long
  Perimortem damage: There is no damage by humans or animals.

Field No. 284

(probably no. 286, incorrectly numbered–284 is a "spearpoint" with skeleton 286 in Wetherill's catalog, and skeleton 286 is not listed in the AMNH catalog. Information on 284 from AMNH catalog and 286 from Wetherill's catalog are combined under 286, below.)

Field No. 285

Provenience: Section 1, five feet
Wetherill description: "Bones of child. Head north face up knees at chin."
Artifact associations: None

Skeletal data:
- AMNH No. 7367
  Catalog notes: "Bones of 1 arm, broken vert and ribs. Adult."
  Not found
- AMNH No. 7368
  Catalog notes: "(Cr)(14) Long bones, scapulae, unfused pelvis; adolescent."

Age: 6 to 12 years
Sex: Indeterminable
Skull shape: Unknown
Perimortem damage: Only mandible is present. It shows no damage by humans or animals.

Field No. 286 (see note under 284, above)

Provenience: Section 1, six feet
Wetherill description: "Skeleton, position unknown."
Artifact associations: Projectile point

Skeletal data:
- AMNH No. 7378 (? gives field no. 284 in AMNH catalog)
  Catalog notes: "(Cr 11) (Cr 3) Adult long bones and fragments of another skeleton."
  Not examined

Field No. 287

Provenience: Section 0, five feet (one associated artifact gives "6 feet.")
Wetherill description: "Skeleton. Heads north feet west at pelvis." (Originally said "Heads north knees west feet at pelvis"—changed by Wetherill.)
Artifact associations: Two projectile points, two bone awls, an "ornament and "part of rib," all on the head of the skeleton

Skeletal data:
- AMNH No. 7476–Catalog notes: "Cr (2)"
  Not examined

Field No. 288

Provenience: Section 0, five feet
Wetherill description: "Skeleton. Heads north feet west at pelvis." ("dittoed" from 287 comment)
Artifact associations: None

Skeletal data: • AMNH No. ?
Not examined

Field No. 289

Provenience: Section 0, five feet
Wetherill description: "Skeleton. Heads west feet at pelvis toes south."
Artifact associations: None

Skeletal data:
- AMNH No. ?
  Not examined

Field No. 294
(probably an incorrect no.–294 is a "bone awl" with 287 in Wetherill's catalog.)

Provenience: ?
Wetherill description: ?
Artifact associations. ?

Skeletal data:
- AMNH No. 7379
  Catalog notes: "(Fr and par) and vertebrae and ribs of adolescent and infant." Individuals not examined.

Field No. 298
(Probably an incorrect no.–298 is a spear point on pelvis 305 in Wetherill's catalog)

Provenience: ?
Wetherill description: ?
Artifact associations: ?

Skeletal data:
- AMNH No. 7369
  Catalog notes: (Md) and fragments of 2 skeletons" Note: a skull is labeled as 7369, but catalog does not indicate a skull for this number.
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: Nose is broken. Skull base, left mandibular ascending ramus, and right mandibular condyle are damaged. There is no sign of animal damage.

Field No. 304

Provenience: Section 3, five feet
Wetherill description: "Skeleton. Head west face up hands at sides feet at pelvis.
Artifact associations: None

Skeletal data:
- AMNH No. 7370
  Catalog notes: "(Cr- Md) and fragments of skeleton."
  Age: Adult, young
  Sex: Male
  Skull shape: Length is intermediate and undeformed
  Perimortem damage: Skull base is broken. Right mandibular ascending ramus is broken off. Nose is broken. There is an horizontal abrasion on the

right brow ridge. There is no damage to the upper or lower teeth. There are no cut marks, animal gnawing, or tooth marks.

Field No. 305

Provenience: Section 2, six feet
Wetherill description: "Skeleton. Head south east face up knees at pelvis."
Artifact associations: Two projectile points and a bone awl were found on the pelvis. Four other projectile points with incomplete provenience information were probably found in the same place.

Skeletal data:
- AMNH No. 7371
  Catalog notes: "Cr. and fragments of skeleton"
  Age: Adult, middle-aged or greater
  Sex: Male
  Skull shape: Long and undeformed
  Perimortem damage: There is no apparent damage by humans or animals.

Field No. 306

Provenience: Section 2, six feet
Wetherill description: "Skeleton. Head south east face up knees at pelvis parallel to 305."
Artifact associations. None

Skeletal data:
- AMNH No. 7372
  Catalog notes: "(Cr-Md) and fragments of skeleton"
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: Right rear of vault is broken off and missing.

Field No. 307

Provenience: Section 5, seven feet
Wetherill description: "Skeleton. Face south head west knees at chin."
Artifact associations: "Bone spatula...above head lying flat."

Skeletal data:
- AMNH No. 7373
  Catalog notes: "Cr and Md and part of good skeleton."
  Age: Adult, middle-aged
  Sex: Female
  Skull shape: Long and undeformed
  Perimortem damage: There is no damage by humans or animals.

Field No. 308

Provenience: Section 5, seven feet
Wetherill description: "Skeleton. Head north face up west and against... 307."
Artifact associations: None

Skeletal data:
- AMNH No. 7374
  Catalog notes: "(Cr 9) Md and long bones of adolescent, lower jaws, few adult mixed in."
  Age: 12 to 15 years
  Sex: Male ?
  Skull shape: Uncertain
  Perimortem damage. Sprung cranial sutures. Frontal bone has compact bone separated from cancellous bone. Most of the skull is missing.

Field No. 311 (Figures 8.28 and 8.29)

Provenience: Section 0, five feet
Wetherill description: "Skeleton. Head east, face up knees at chin."
Artifact associations: None

Skeletal data:
- AMNH No. 7375
  Catalog notes: "(2 Cr 22) and parts of 2 skeletons"
  Age: Adult, young Sex: Male

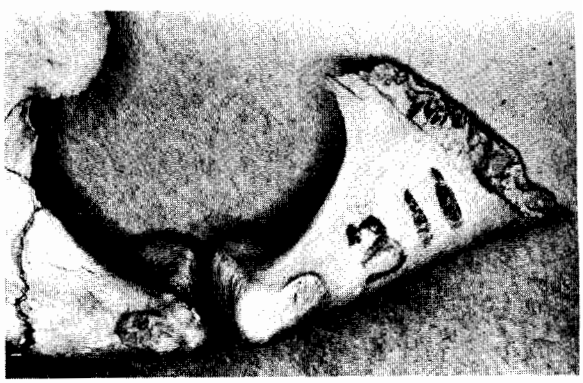


Figure 8.28 Number 311, a young adult male, had both ascending rami of the lower jaw severly fractured near the condyles. These breaks document blows to both the left and right sides of the head.

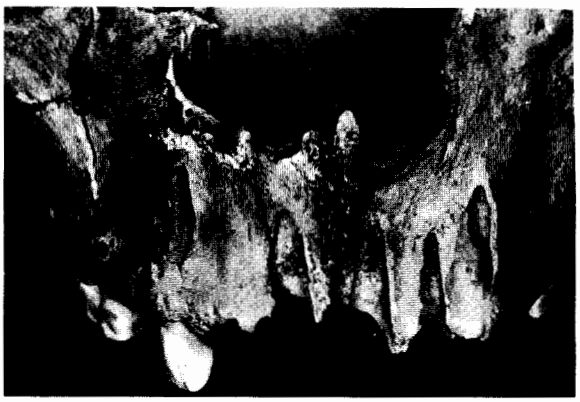


Figure 8.29 The upper front teeth of number 311 had been struck with such severe force that most were "blown" out of their sockets, rupturing and fracturing the supporting alveolar bone. The right maxilla is also severely fractured.

Skull shape: Long
Perimortem damage: Skull is completely broken. Mandible is broken at symphysis and condyle. Face is crushed with teeth blown out of sockets. Upper right third molar had been traumatized so severely that the lingual and distal cusps had sheared off. Head had been severely mutilated.

Field No. 312

Provenience. Section 1, five and one half feet
Wetherill description: "Skeleton. Head north west knees at chin."
Artifact associations: Bone "spatula." (probably above head, as relative depths of spatula and skeleton are same as those in 307.)

Skeletal data:
- AMNH No. 7376
  Catalog notes: "(Cr 4) (Md 2) and badly broken parts of adolescent skeleton."
  Not examined.

Field No. 313

Provenience: Section 3, five feet
Wetherill description: "Skeleton of child. Head west, pelvis north, other bones scattered, ribs on head." (commas added)
Artifact associations: None

Skeletal data: • AMNH No. ?
Not examined

Field No. 316

Provenience: Section 1, six feet
Wetherill description: "Skeleton. Head west, face up, knees each side of jaw, hands at side." (commas added)
Artifact associations. None

Skeletal data:
- AMNH No. 7377
  Catalog notes: "(Cr 2) (Md 2) and long bones. Vertebrae mixed."
  Age: Adult
  Sex: Male
  Skull shape: Uncertain
  Perimortem damage: None. Mandible is missing.

Field No. 320

Provenience: Section 2, five feet
Wetherill description: "Skeleton. 4 feet from south line & 2 ft from east line of S. 2 Face up head west."
Artifact associations: None

Skeletal data:
- AMNH No. 7382
  Catalog notes: "Cr and Md and nearly complete skeleton, fine condition"
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: There is no apparent damage by humans or animals.

Field No. 321

Provenience: Section 2, five feet
Wetherill description: "Skeleton. 2 feet from south line & 2 ft from east line of S.2 head south."
Artifact associations: None

Skeletal data:
- AMNH No. 7380
  Catalog notes: "(Cr- Md) and fairly complete skeleton"
  Not examined

Field No. 322 (Figures 8.30 and 8.31)

Provenience: Section 1, seven feet
Wetherill description: "Skeleton. Head west face up knees drawn up feet at pelvis."
Artifact associations: None

Skeletal data:
- AMNH No. 7381
  - Catalog notes: "(Cr 5) Md and nearly complete skeleton"
  - Age: Adult
  - Sex: Male
  - Skull shape: Seemingly long
  - Perimortem damage: Face is sheared from vault. There are two penetration wounds in the occipital bone. Vault is broken in half. Nose is broken. Head had been severely mutilated.

Field No. 324

Provenience: Section 2, six feet
Wetherill description: "Skeleton. All (324-326) badly decayed and seemed to have been thrown in a hole as bones were cross wise."
Artifact associations: None

Skeletal data:
- AMNH No. ?
  - Not examined

Field No. 325

Provenience: Section 2, six feet
Wetherill description: "Skeleton. has eye tooth." See 324.
Artifact associations. Thirty-eight beads, including 11 of bone and six of jet, all on right arm

Skeletal data:
- AMNH No. not given
  - Catalog notes: None–identified only in artifact catalog
  - Not examined

Field No. 326

Provenience: Section 2, six feet
Wetherill description: "Skeleton." See No. 324.
Artifact associations. None

Skeletal data:
- AMNH No. 7387
  - Catalog notes: "(Cr) leg bones of adult and adolescent"
  - Age: Adult

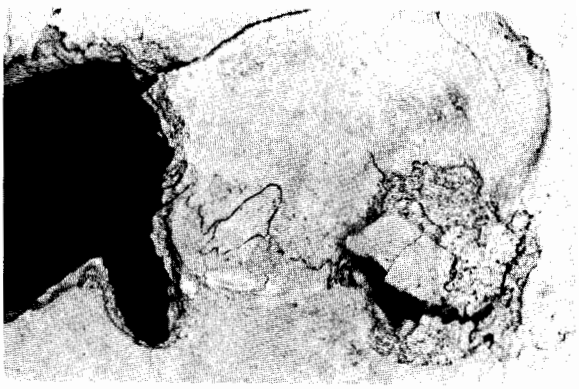


Figure 8.30 Shown is the interior surface of the occipital region of number 322, an adult male. Two separate hammer-like blows are evidenced on the left and right sides of this view.

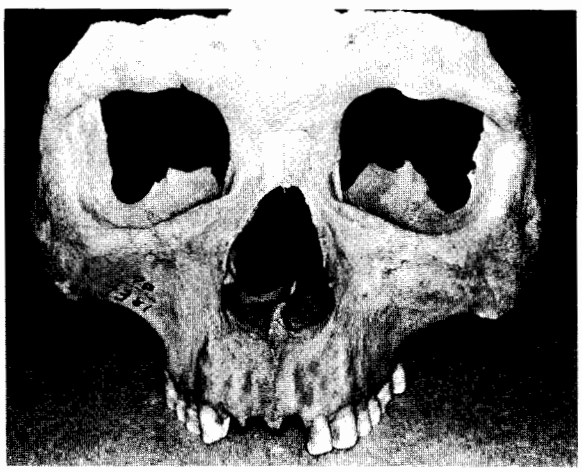


Figure 8.31 Another view of number 322, showing how the entire face had fractured from the vault as the result of repeated blows. The nose had been broken also.

  - Sex: Male
  - Skull shape: Round with slight deformation
  - Perimortem damage: Right posterior maxilla and mandible are missing. There is no apparent damage by animals.

Field No. 366

Provenience: Section 2, five feet
Wetherill description: "Skeleton."
Artifact associations: None

Skeletal data:
- AMNH No. 7383
  Catalog notes: "(Cr 10) (Md) and fragment of skeleton"
  Age: Adult, old
  Sex: Female
  Skull shape: Uncertain
  Perimortem damage: There is minor damage by humans but none by animals.

Field No. 367

Provenience: Section 2, six feet
Wetherill description: "Bones of child. Head north east face up head at pelvis."
Artifact associations: None

Skeletal data:
- AMNH No. ?
  Not examined

Field No. 378

Provenience: Section 5, six feet
Wetherill description: "Skeleton. Heads south west feet at pelvis, arms at sides."
Artifact associations: Bone awl and 14 projectile points on left arm. Also with this skeleton were a piece of cut bone, bone bead and a turquoise disc.

Skeletal data:
- AMNH No. 7385
  Catalog notes: "Cr-Md and part of skeleton"
  Not located
- AMNH No. 7389
  Catalog notes: "Cr, Md, nearly complete skeleton with some parts of another skeleton mixed in."
  Not located

Field No. 379

Provenience: Section 5, six feet
Wetherill description: "Skeleton. Heads south west feet at pelvis arms at sides and against 378."
Artifact associations: None

Skeletal data:
- AMNH No. ?
  Not examined

Field No. 380

Provenience: Section 5, six feet
Wetherill description: "Skeleton. Heads south west feet at pelvis arms at sides and against 779 (379?)."
Artifact associations: None

Skeletal data:
- AMNH No. 7386
  Catalog notes: (Cr 5) Md and long bones of 2 skeletons"
  Age: Adult
  Sex: Uncertain
  Skull shape: Uncertain
  Perimortem damage: Right half of maxilla is missing. There is no damage by animals.
- AMNH No. 7386x
  Catalog notes. Same as 7386
  Age: Adult
  Sex: Male
  Skull shape: Long
  Perimortem damage: Mandible is missing. Minor damage by humans.

Field No. 402

Provenience: Section 5, four feet
Wetherill description: "Skeleton. Head N.E. feet at pelvis arms over head."
Artifact associations: None

Skeletal data:
AMNH No. 7390
  Catalog notes: "Part of 2 skeletons (adult and adolescent) and skull."
  Age: 12 years
  Sex: Female (?)
  Skull shape: Long.
  Perimortem damage: Mandible is missing. There is no apparent damage by humans or animals.

Field No. 403

Provenience: Section 2, six feet
Wetherill description: "Skeleton. Head west feet at pelvis arms at sides."
Artifact associations. "Drawknife."

Skeletal data:
- AMNH No. 7391
  Catalog notes: "(Cr 2) and part of skeleton."
  Not located

Field No. 405

Provenience: Section 5, six feet, on right arm of 408.
Wetherill description: "Skeleton of child, on right arm of 408."
Artifact associations: None

Skeletal data:
- AMNH No. ?
  Not located

Field No. 406

Provenience: Section 5, six feet, on(?) chest of 408.
Wetherill description: "Skeleton of child, head under jaw of 408, body inside of ribs."
Artifact associations: None

Skeletal data:
AMNH No. ?
Not located (possibly "fragments of infant" with 408).

Field No. 407

Provenience: Section 5, six feet, on left arm of 408
Wetherill description: "Skeleton of child, on left arm of 408."
Artifact association: None

Skeletal data:
- AMNH No. ?
  Not located

Field No. 408

Provenience: Section 5, six feet
Wetherill description: "Skeleton of adult, Head S.W. knees on ribs near chin. Feet at pelvis. face up." Child skeletons 405, 406 and 407 were on the right arm, chest and left arm, respectfully.
Artifact associations: None

Skeletal data:
- AMNH No. 7392
  Catalog notes: "Cr, Md, and nearly complete skeleton; fragments of infant also."
  Age: Adult
  Sex: Female
  Skull shape: Indeterminate
  Perimortem damage: There is no apparent damage by humans or animals.

Field No. 409

Provenience: Section 2, five feet
Wetherill description: "Skeleton of adult. Badly decayed face up knees at chin feet at pelvis head S.W.
Artifact associations: Argillite tool

Skeletal data:
- AMNH No. ?
  Catalog notes: None—not mentioned in physical anthropology catalog, but is identified in artifact catalog.
  Not found

Field No. 410

Provenience: Section 2, five feet
Wetherill description: "Skeleton of adult. Badly decayed, parallel with 409."
Artifact associations: None

Skeletal data:
- AMNH No. ?
  Not located

Field No. 412

Provenience: Section 2, six feet
Wetherill description: "Skeleton. Face down knees at chin bones disturbed. female."
Artifact associations: None

Skeletal data:
- AMNH No. 7388
  Catalog notes: "Cr, Md (Par) Humerus and vertebrae."
  Not found
- AMNH No. 7393
  Catalog notes: "Cr, Md, and part of skeleton, a few bones of infant"
  Age: 15 to 18 years
  Sex: Female
  Skull shape: Long
  Perimortem damage: Minor damage to nose. No animal damage.

Field No. 415

Provenience: Section 5, five feet
Wetherill description: "Skeleton. Head south face up knees near chin feet not found."
Artifact associations. None

Skeletal data:
- AMNH No. 7402
  Catalog notes: "Cr and Md and vertebrae of adolescent"

Age: 10 years
Sex: Indeterminable
Skull shape: Round and undeformed
Perimortem damage: There is no apparent damage by humans or animals.

Field No. 418

Provenience: Section 6, seven feet.
Wetherill description: "Skeleton. Head N.W., face up, feet at pelvis, arms straight. Under wall." (punctuation added)
Artifact associations. Bone awl on pelvis

Skeletal data:

- AMNH No. 7394
  Catalog notes: "Cr."
  Not located
- AMNH No. 7395
  Catalog notes: "Cr."
  Not located
- AMNH No. 7397
  Catalog notes: "Near complete skeleton"
  Not located

Field No. 419

Provenience: Section 6, seven feet
Wetherill description: "Skeleton. Parallel with 418."
Artifact associations: None

Skeletal data:

- AMNH No. 7398
  Catalog notes: "Cr and Md part of skeleton"
  Age: Adult
  Sex: Female
  Skull shape: Indeterminate
  Perimortem damage: Mandible is missing. No damage by humans or animals could be identified.

Field No. 420

Provenience: Section 6, seven feet
Wetherill description: "Skeleton. Head west, face up, arms at sides, across 419. infant bones on inside ribs. All (418-420?) in a group under back wall of C.H. (cliff house)."
Artifact associations: Projectile point or knife near head.

Skeletal data:

- AMNH No. 7415
  Catalog notes: "Cr, Md and parts of 2 skeletons"
  Age: Adult
  Sex: Female
  Skull shape: Indeterminate
  Perimortem damage: Minor damage, seemingly human-inflicted.

Acknowledgements

Hurst examined the American Museum of Natural History's artifact collection as part of the Wetherill–Grand Gulch Project team, with the permission of Dr. David Hurst Thomas, and the assistance of Anibal Rodriguez. Fred Blackburn, Ann Phillips and the other members of the Wetherill–Grand Gulch Project team assisted in the examination of artifacts and provided much valuable historical material. Permission for Turner to examine the American Museum of Natural History's human skeletal collection was granted by the late Harry L. Shapiro (1978) and Ian Tattersall (1989). The examinations were assisted by Precilla Ward, Jaymie L. Brauer, Gary Sawyer, Anibal Rodriguez, and Jacqueline A. Turner. Turner's examinations were conducted as parts of two dental anthropological studies sponsored by the National Geographic Society.

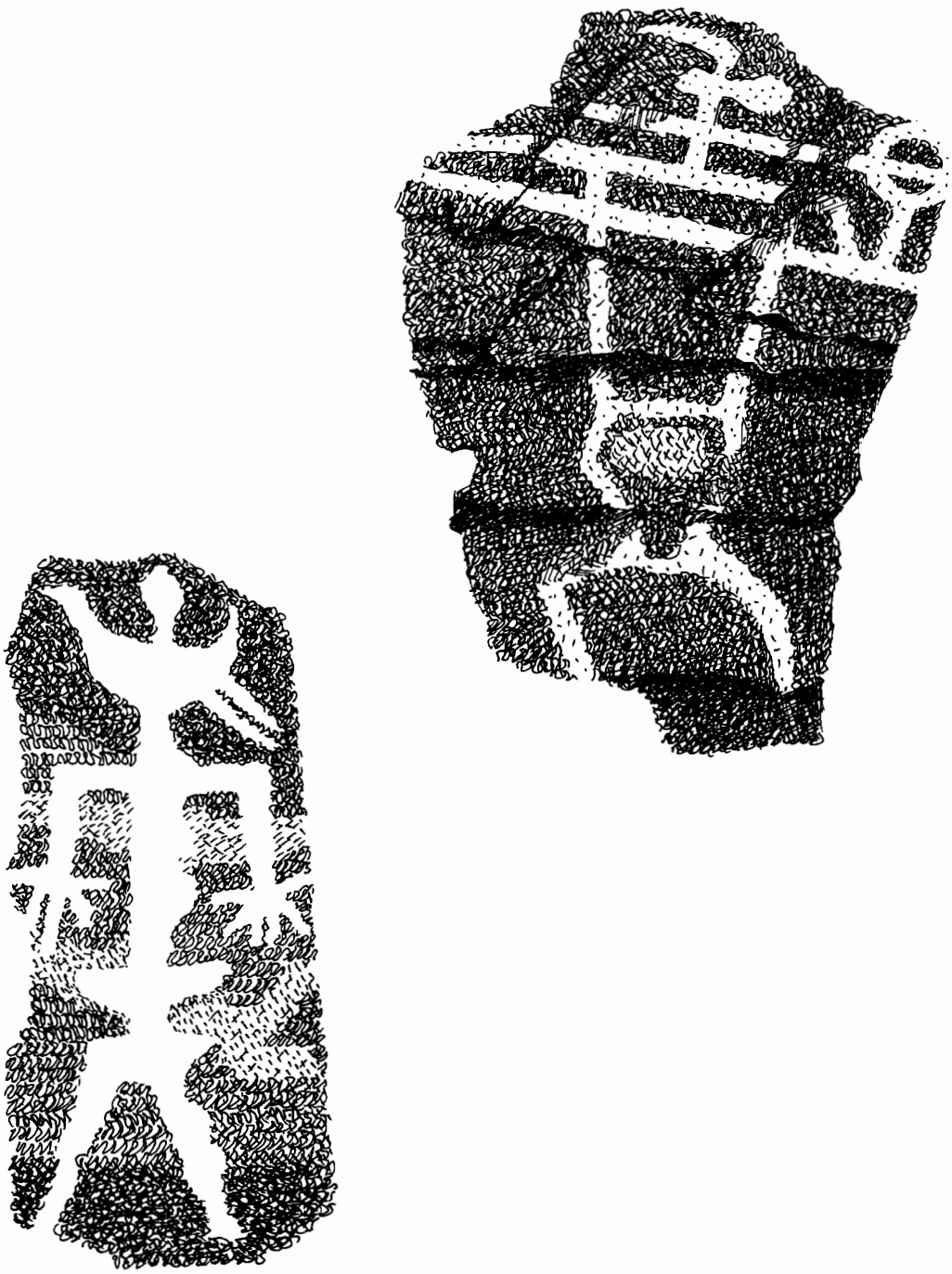


Figure 9.0 Petroglyphs from Grand Gulch (Drawings by Ann Hayes)

Basketmaker Rock Art at the Green Mask Site, Southeastern Utah

Sally J. Cole

Introduction

In the winter of 1896–1897, the Whitmore-Bowles expedition led by Richard Wetherill of Mancos, Colorado, entered Grand Gulch on Cedar Mesa, southeastern Utah (Figure 9.1), for the purpose of making archaeological collections. Wetherill was particularly interested in collections related to Basketmakers that he had recently described as being distinct from Cliff Dwellers (McNitt 1957). During the expedition, Wetherill returned to some sites he had visited during the winter of 1893–1894 as part of the Hyde Exploration Expedition. One of these was the Green Mask site (number 42SA3711), designated as Cave 11 in 1897 and as Cave 17 in 1893–1894 (Anonymous nda; Anonymous ndb; Anonymous ndd; Anonymous ndg).

Field collection catalogs from both expeditions exist; and field notes from the 1896–1897 expedition, with references to earlier work, have survived. A number of artifacts and burials removed from the site have been inventoried at the American Museum of Natural History and elsewhere by the Wetherill–Grand Gulch Research Project (reported in this volume).

In addition to Wetherill party excavations, Charles McLoyd and C. C. Graham from Durango, Colorado, excavated at the Green Mask site in 1890–1891. Other relic hunters of the late 1800s and early 1900s, as well as those of the more recent past, may have excavated at the site (Keller et al. 1974). Signatures on rocks at the Green Mask site document the presence of various individuals (Blackburn and Atkins this volume).

Keller et al. (1974) attempted to locate evidence of Wetherill's past activities, and mapped archaeological features and looters' pits present at the Green Mask site (Figure 9.2). A total of 52 pits were documented, and it is evident that most visible features have been disturbed. Rock art at the Green Mask site was documented by Cole and Cole (1976), and more completely in 1985 by a research expedition associated with White Mesa Institute (materials on file at Edge of the Cedars State Park, Blanding, Utah).

While the archaeological integrity of the Green Mask site clearly has been damaged and much information lost, it is worthwhile to examine existing materials and rock art to answer questions about ancient use of the site. Over time, abundant rock art has provided a backdrop of conspicuous imagery for which it is possible to identify stylistic and cultural associations. In this manner, the imagery can be placed in both space and time, and functions and meanings can be explored.

Just as social groups are likely to have designated certain floor areas for certain activities over time, rock art symbolism may have been restricted to wall space near or otherwise associated with relevant areas of the floor. Identifying rock art spatial organization, subject matter and themes, as well as material associations, aids interpretation of how the

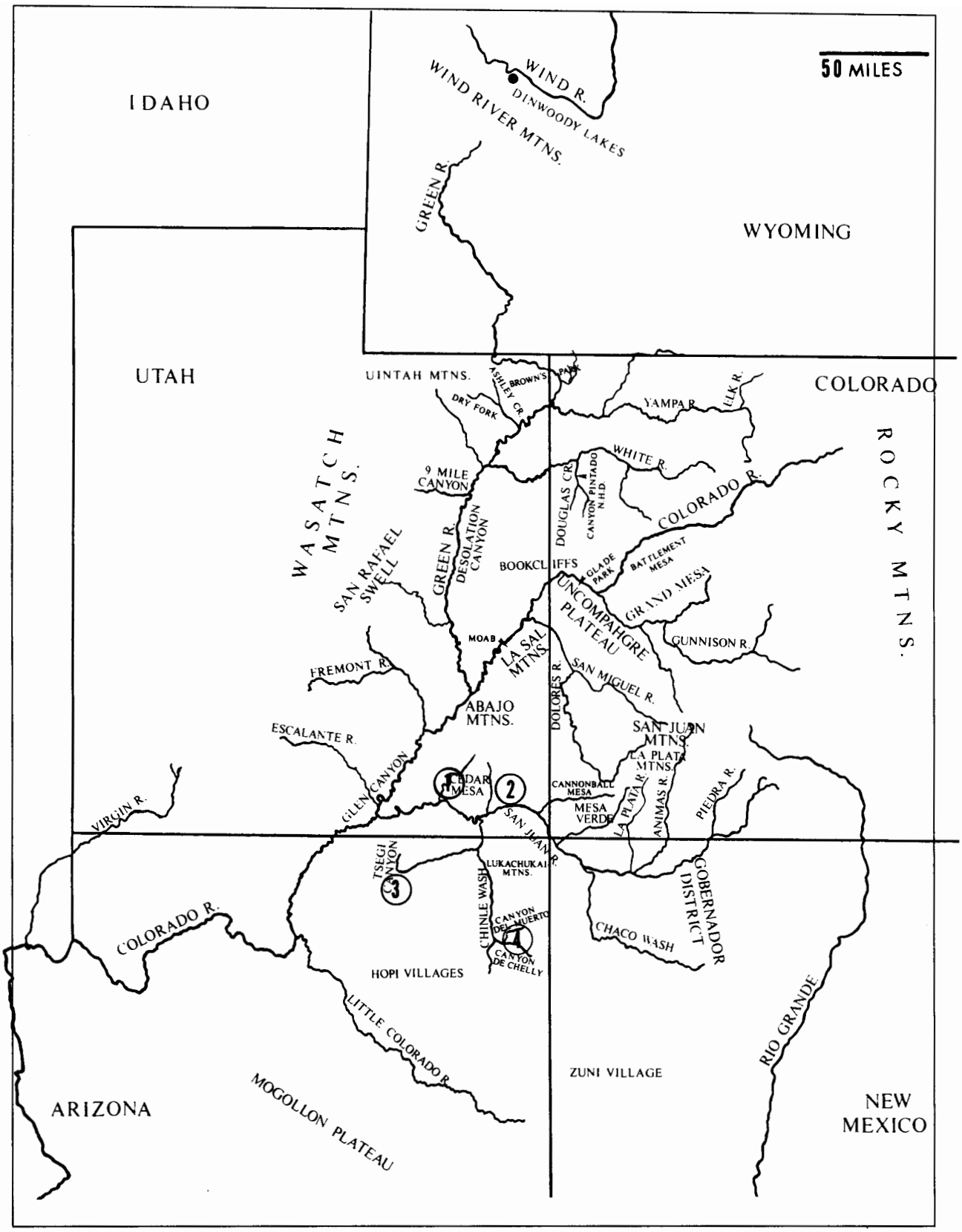

50 MILES
IDAHO
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
WIND R.
DINWOODY LAKES
WIND RIVER MTNS.
GREEN R.
UINTAH MTNS.
ASHLEY CR.
BROWN'S PARK
DRY FORK
YAMPA R.
ELK R.
WHITE R.
COLORADO R.
ROCKY MTNS.
WASATCH MTNS.
9 MILE CANYON
DOUGLAS CR.
CANYON PINTADO N.H.D.
SAN RAFAEL SWELL
GREEN R.
DESOLATION CANYON
BOOKCLIFFS
GLADE PARK
BATTLEMENT MESA
GRAND MESA
UNCOMPAHGRE PLATEAU
GUNNISON R.
MOAB
LA SAL MTNS.
FREMONT R.
DOLORES R.
SAN MIGUEL R.
ABAJO MTNS.
SAN JUAN MTNS.
ESCALANTE R.
LA PLATA MTNS.
GLEN CANYON
CEDAR MESA
CANNONBALL MESA
MESA VERDE
LA PLATA R.
ANIMAS R.
PIEDRA R.
VIRGIN R.
SAN JUAN R.
TSEGI CANYON
LUKACHUKAI MTNS.
CHINLE WASH
GOBERNADOR DISTRICT
CANYON DEL MUERTO
CANYON DE CHELLY
CHACO WASH
COLORADO R.
HOPI VILLAGES
LITTLE COLORADO R.
RIO GRANDE
ZUNI VILLAGE
MOGOLLON PLATEAU
1
2
3
4

Figure 9.1 (Facing Page) Map of the Colorado Plateau and Four Corners region showing locations of significant San Juan Basketmaker rock art style areas: 1–Grand Gulch and Cedar Mesa; 2–Butler Wash; 3–Marsh Pass and Tsegi Canyon; and 4–Canyon de Chelly and Canyon del Muerto.

site was used and of the societies that used it. This research is likely to be most meaningful in situations where rock art preservation and knowledge of associated features and materials are good. The Green Mask site has some of these qualities. Rock art preservation is good, and records of collected materials and site layout are available despite repeated looting that has diminished possibilities for interpretation.

Rock art, a purely symbolic subject, is but part of the overall cultural record available to explain the past, and its integration into that record maximizes its research possibilities. Comparisons with material culture provide information for determining age as well as clues to meaning that can be supported by physical and aesthetic factors and ethnographic information. In a complementary fashion, rock art has the potential to shed light on the distribution, function, and meanings of associated materials.

Site Description

The Green Mask site is located near the mouth of Sheik's Canyon, an eastern tributary to Grand Gulch that drains south from Cedar Mesa to join the San Juan River near the Utah-Arizona line (Figure 9.1). A general location is within the Four Corners region of the Colorado Plateau. The site was described by Richard Wetherill in 1896–1897 field notes in which he included a map of a sandstone rockshelter, Cave 11, and sketches of rock art and archaeological features. Wetherill (1896–1897) noted physical relationships between rock art and burials he excavated:

Cave 11 is in a small side canon draining into the Grand Gulch from the east... The cave is on the north side of the canon and opens very little above the bottom of the arroyo... in the central and western part, talus from the roof has filled it up 30 or 40 feet... upon this, small attached houses are built, and between the rocks are the few pot holes dug out by us [in 1893–1894?]. *The cave is 200 feet long, 50 feet high, and 50 deep... These measurements of course depend for correctness upon where we imagine the cave to begin and end—This is the only cave in the canon.*

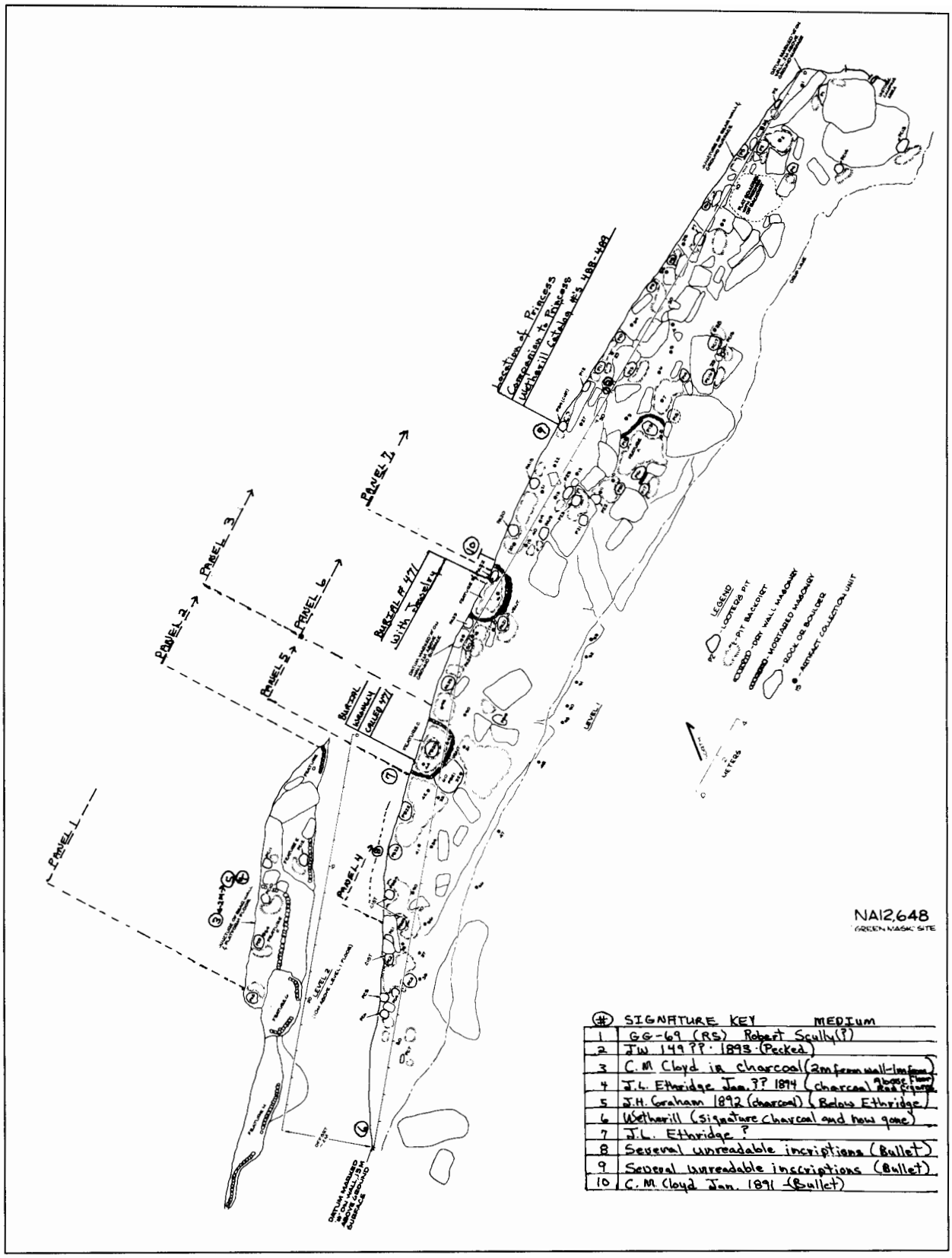
It has a small cliff house in [a] *cleft higher up.*

The face of the cliff on the north side is covered with painted pictures in red, yellow, green, brown, and white. We failed to get a negative of these. On the cliff seven feet above mummies 488 and 489 were three pictures in white with red nipples. These pictures are of large size—being 3 feet long at limit. Many prints of hands in red [were] *also seen.*

In the western or southwestern end of the cave on the cliff are pictures of headless people. These happened to be above the burials of fragments of human beings. Whether they have any significance or not we did not find out.

The Green Mask site presently consists of thirteen architectural features including cists of presumed Basketmaker II origin dug into old alluvial fill and late Pueblo II–Pueblo III masonry structures that occur on upper and lower levels within the rockshelter (Keller et al. 1974). Some of the cists may have been used by later Pueblo occupants. The floor of the upper level is approximately ten meters higher than that of the lower level. Lower level features are surrounded by rockfall, and much of the floor is covered with large boulders and slabs of rock that have fallen from the rear wall.

Two masonry structures are possible kivas, and one has walls decorated by plaster designs. Ceramic materials at the site generally are associated with the late Pueblo II–Pueblo III period (Keller et al. 1974). Rock art is abundant and highly visible throughout the site. It occurs high on the overhanging



#	SIGNATURE KEY	MEDIUM
1	GG-69 (RS) Robert Scully(?)	
2	JW 149 ?? · 1893 · (Pecked)	
3	C. M Cloyd in charcoal (2m from wall-1m from)	
4	J.L. Ethridge Jan. ?? 1894 (charcoal Above Floor Red figures)	
5	J.H. Graham 1892 (charcoal) (Below Ethridge)	
6	Wetherill (signature charcoal and now gone)	
7	J.L. Ethridge ?	
8	Several unreadable incriptions (Bullet)	
9	Several unreadable inscriptions (Bullet)	
10	C. M. Cloyd Jan. 1891 (Bullet)	

Figure 9.2 (Facing Page) Map of the Green Mask site (42SA3711), Shiek's Canyon, Grand Gulch, Utah, providing an overview of the rockshelter and rockfall within. Locations of rock art panels, archaeological features, artifact and burial collection areas, historic signatures and evidence of looting are indicated. Drawing adapted from Keller et al. (1974) with handwritten additions by Fred Blackburn.

rear wall and ceiling of the rockshelter and is directly above and behind architectural features.

For descriptive purposes, the wall (located behind and above the two living floors) is seen as composed of three levels: the nearly vertical lower panel extends from the living floor to a point nearly forty feet high; the second level is an overhanging panel lying at an angle of nearly thirty degrees beyond vertical and extending approximately twenty feet higher than the first; and the third level is the nearly horizontal ceiling of the shelter that is approximately sixty feet above ground level at the dripline. The rock art has been assigned to seven panels on these various levels for ease of documentation and mapping (Figure 9.2).

Rock Art

The focus of this paper is rock art of the Basketmakers; but three general styles of rock art, possibly representing three cultural groups, occur at the Green Mask site. The groups are hunter-gatherers of the Archaic period (pre-A.D. 1 to 500 or later), San Juan Basketmaker II and Basketmaker III (pre-A.D. 1 to 700–900), and Pueblo II and Pueblo III (A.D. 900 to 1300) (Keller et al. 1974; Cordell 1984; Nichols and Smiley 1984). The overall context of the site includes the three styles, and the imagery may have influenced use of the site over time, making an impression on occupants and visitors alike. Accordingly, all three rock art expressions at the Green Mask site will be discussed.

It is possible that successive groups and cultures accorded significance to the site and utilized it, at least in part, based on existing rock art. An active role may have been played by rock art in determining how the site was used by those who shared existing symbolism as well as by those who had a different symbolic systems. Fewkes (1906), Stevenson (1904:233), Stephen (1969), and Malotki and Lomatuway'ma (1987) have described shrines of the Hopi and Zuni that are marked by rock art images representing clan symbols and supernatural beings featured in ancestral traditions and religious ceremonies. In an ethnographic study of Zuni rock art, Young (1985) has observed that it is difficult to separate the spiritual power accorded a place, such as a shrine, from the power of rock art images that mark it.

In light of Young's observation, it is interesting to note that while the three rock art styles at the Green Mask site are distinct from each other and may be widely separated in time, all have qualities that are considered ceremonial in nature. This includes imagery consistent with religious, mythic, and heroic subjects as well as highly decorative elements and elements in locations high above the floor, some with difficult access. It is suggested that successive groups and cultures used the site, in part, for ceremonies. The overall context of the site, including earlier rock art, may have influenced such usage. Material associations and ethnographic information support this conclusion.

Archaic Rock Art

Predominantly abstract polychrome rock paintings proposed to date from the Archaic period of pre-A.D. 1 to 500 or later (Keller et al. 1974; Schaafsma 1980; Cole 1990) are located on the upper wall and ceiling of the Green Mask site in Panels 2 and 3, where more than 250 elements occur. A few abstract paintings also occur lower on the rear shelter wall, near the tops of Panels 6 and 7 (Figure 9.2). Because of their overall height, the paintings are most easily viewed from the

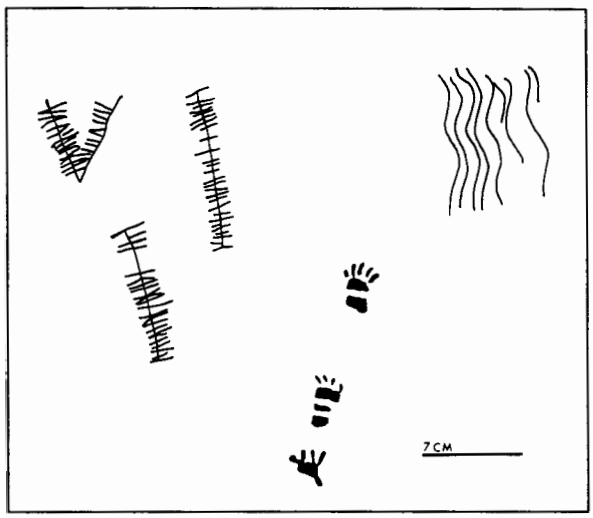
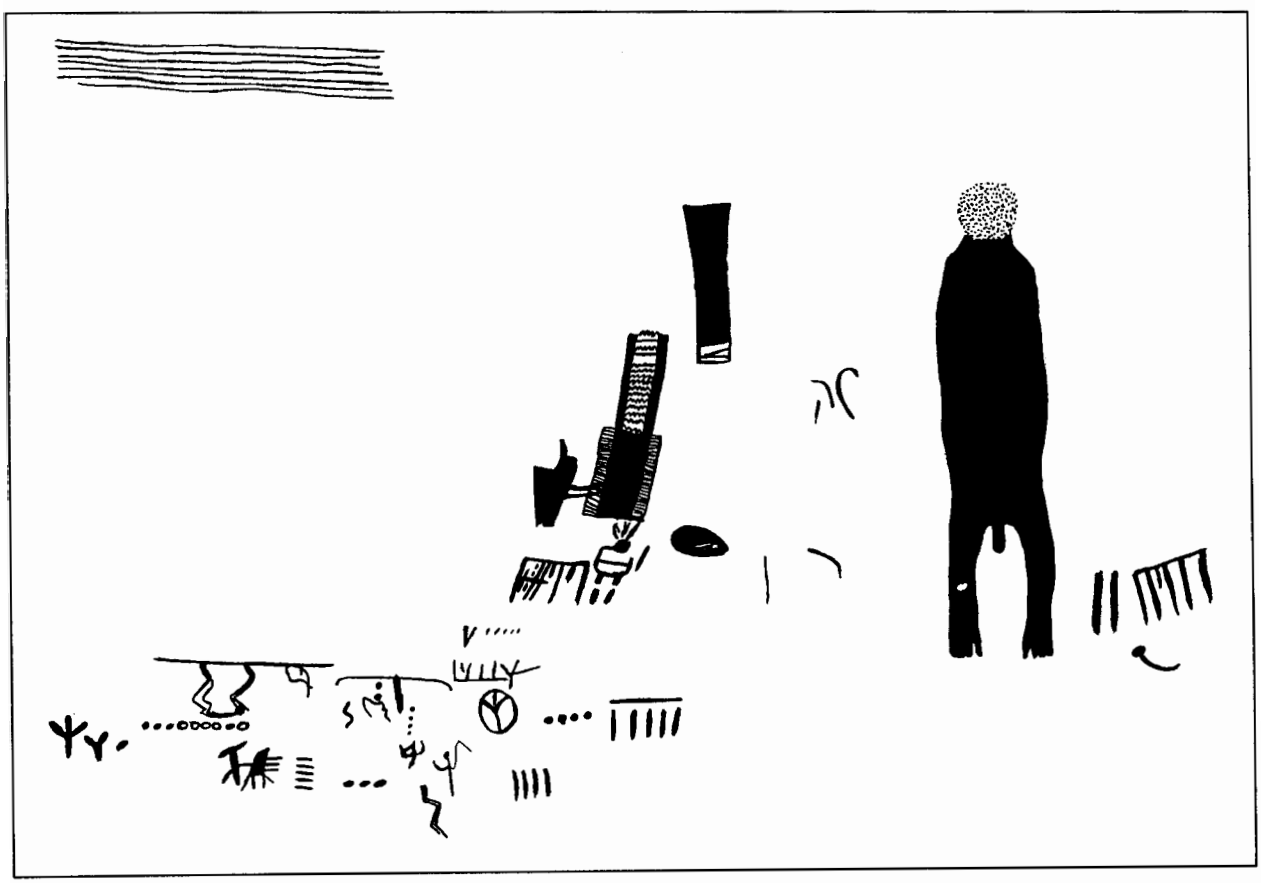


Figure 9.3 Schematic drawing of impressed and incised abstract imagery in clay walls of Basketmaker storage cists at North Shelter, Animas River drainage, southwest Colorado. Drawn from photographs by Morris and Burgh (1954:Fig. 77).

outer portions of the rockshelter and from outside.

Schaafsma (1980:49–55) has identified the paintings as Chihuahuan Polychrome Abstract Style and has associated them with hunters and gatherers of the greater Southwest culture area. Additional sites on the Colorado Plateau are reported from drainages of the Green, Colorado, and Escalante rivers to the north and west of Grand Gulch (Castleton 1978, 1979; Noxon and Marcus 1985; Cole 1990). While abstract imagery clearly dominates the style, representational images or identifiable

Figure 9.4 (Below) Detail of Panel 3, Green Mask site, showing polychrome abstract style paintings including an unusual anthropomorph that is near life-size. Abstract paintings are red, brown and greenish gray; anthropomorph is yelowish pink or cream. Stippled area is indistinct. Adapted from a field sketch by Fred Blackburn.



subjects from nature such as pawprints and bird tracks, plant forms, and generally simple anthropomorphs and quadrupeds are included.

Abstract petroglyph styles in the Southwest, Great Basin, and Plains culture areas also associated with the hunter-gatherer lifeway (Heizer and Baumhoff 1962; Castleton 1978, 1979; Schaafsma 1980; Sundstrom 1984; Buckles 1989; Cole 1990) are part of the same abstract rock art tradition. Generally, abstract rock paintings appear to have been less common than abstract petroglyphs, but this may be a result of differences in rates of deterioration and levels of reporting.

Polychrome abstract paintings at the Green Mask site generally are bright and well preserved despite their proposed antiquity. Colors include red, brown, greenish gray, yellow and yellowish pink or cream. As noted above, most of the paintings occur high above living floors and the surface of the ground outside the rockshelter. They presumably were painted using ladders, or access was gained from rock ledges that have since fallen. Scars on the rear wall of the shelter indicate past rock falls. Images near the outer edge of the ceiling, near the dripline of the shelter, probably were painted using ladders or other climbing devices. Regardless of the means of access, it clearly was the intention of the artists to place the paintings in high locations. Keller et al. (1974) have observed that the height of the abstract paintings above the living floors and other rock art, including Basketmaker style paintings on the scar of a fallen ledge, suggests an Archaic origin.

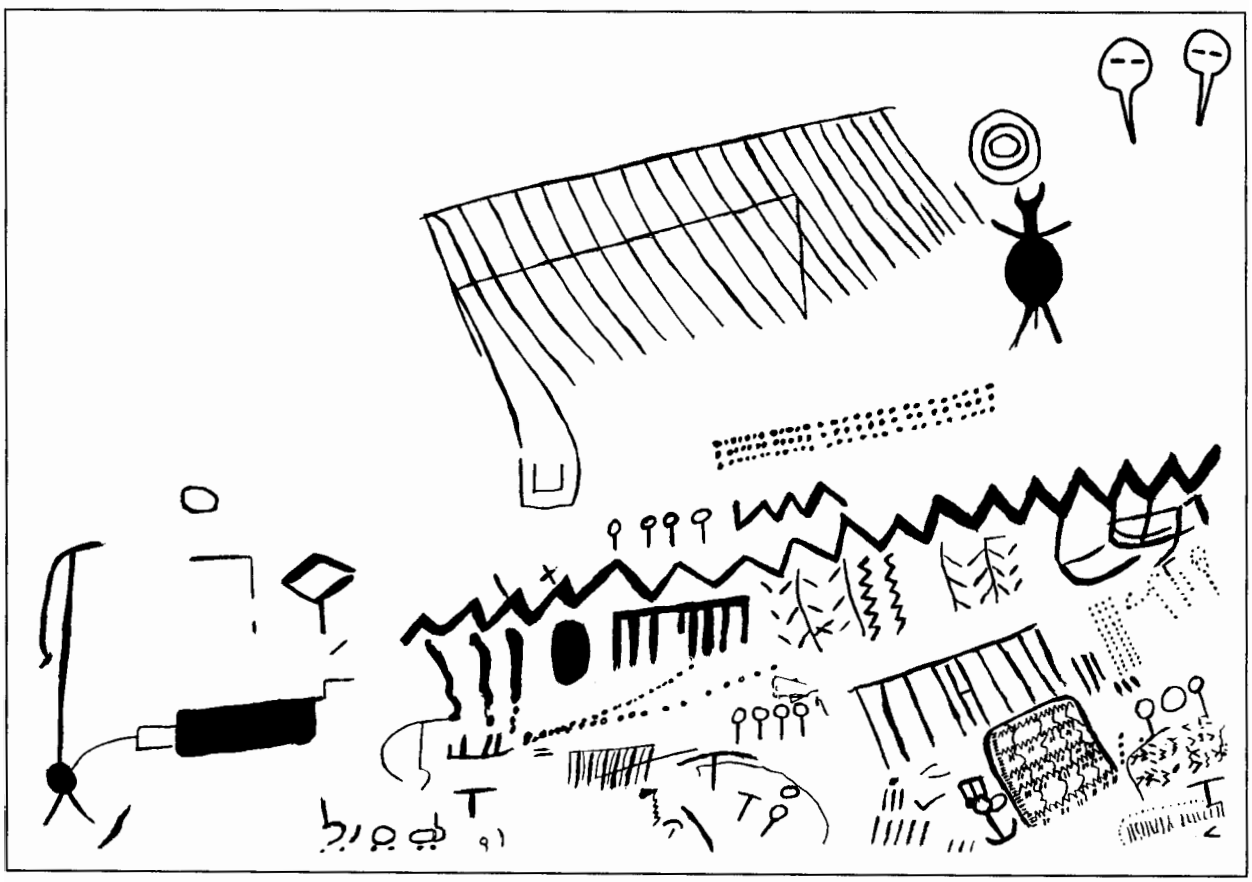


Figure 9.5 Detail of Panel 3, Green Mask site, showing polychrome abstract style paintings, an anthropomorph with a horn-like headdress, and two "faces". Abstract images are greenish gray, red, brown and yellowish pink or cream. Anthropomorph and "faces" are cream. No scale available. Adapted from a field sketch by Fred Blackburn.

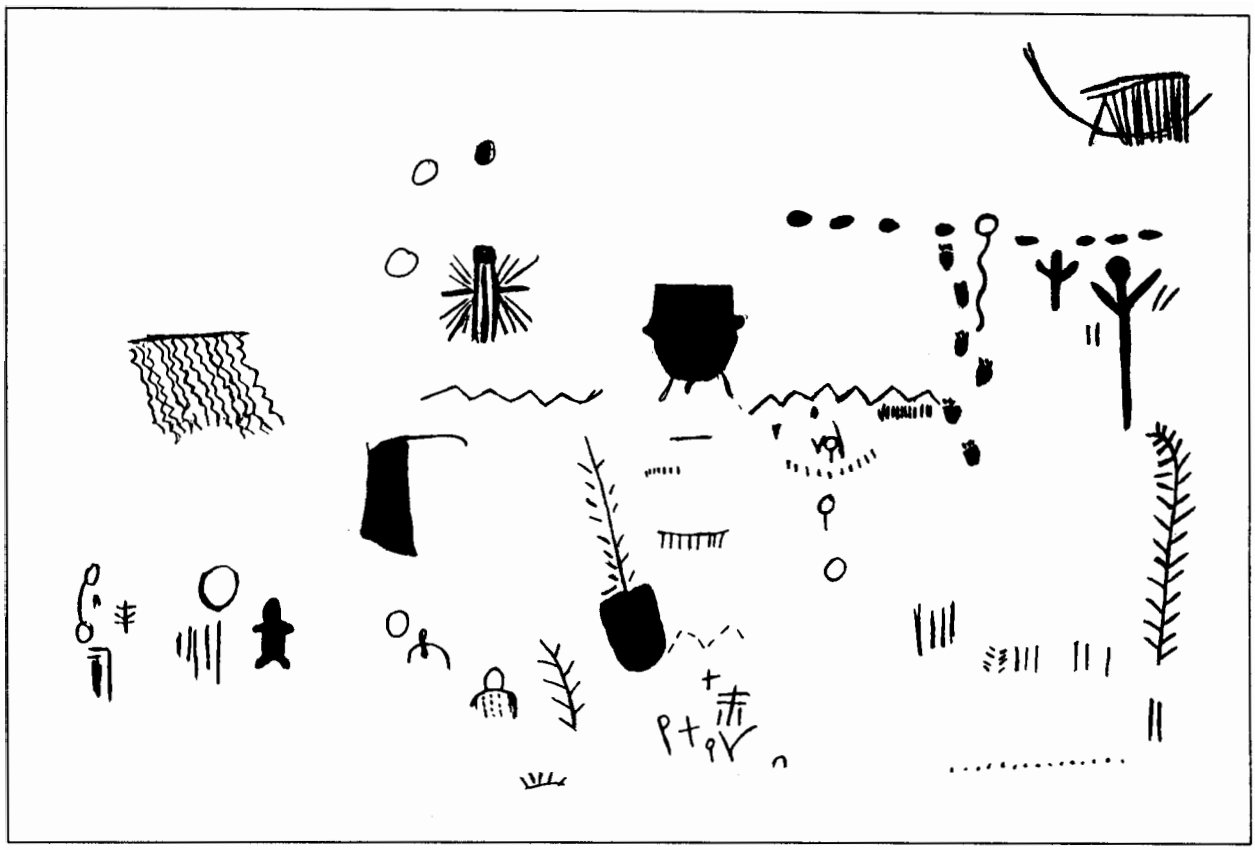


Figure 9.6 Detail of Panel 3, Green Mask site, showing polychrome abstract style paintings including paw prints, plant-like forms, a possible quadruped, possible insects and possible stick-figure anthropomorphs with upraised arms. The "stick figures" are cream colored: other imagery is yellow, greenish gray, red and brown. No scale available. Adapted from a field sketch by David M. Jabusch.

The abstract paintings feature a variety of simple and complex geometric designs including rows of dots and "fingerprints," straight lines, zig-zag lines, circles, triangles, one-pole "ladders," concentric circles, "rakes," circle and line "tadpoles," and "boxes" (Figures 9.4–9.6). Included with these non-representational images are a few elements that appear representational; some are more definitive than others. Less definitive forms include: "plant" stalks, an atlatl, bird tracks, insects, "faces" with sticklike torsos (so-called lollipops), an "anthropomorph" with a "weaving" and stick-figure anthropomorphs with upraised arms.

More definitive representations include a "flattened" quadruped or possibly a pelt, a vertical row of six pawprints, and two anthropomorphs. One anthropomorph (Figure 9.4) is unusually large, approximately a meter in length. The figure has an elongated and slightly ovate torso and a phallus. Arms are not apparent. Legs hang down, and toes are indicated. The head is faded and appears to be rounded; the neck area is not clearly defined. A second anthropomorph with a rounded torso also has a phallus (Figure 9.5). Arms are out to the side, and the figure appears to wear a two-horn headdress. These two anthropomorphs, and the less definitive "faces" (Figure 9.5) and stick-figure anthropomorphs (Figure 9.6), occur in the eastern portion of Panel 3 and are painted with a yellowish-pink or cream colored pigment.

The variety of element types and execution of details, colors, and superimpositions, as well as their often crowded appearance, suggest that the abstract paintings were made

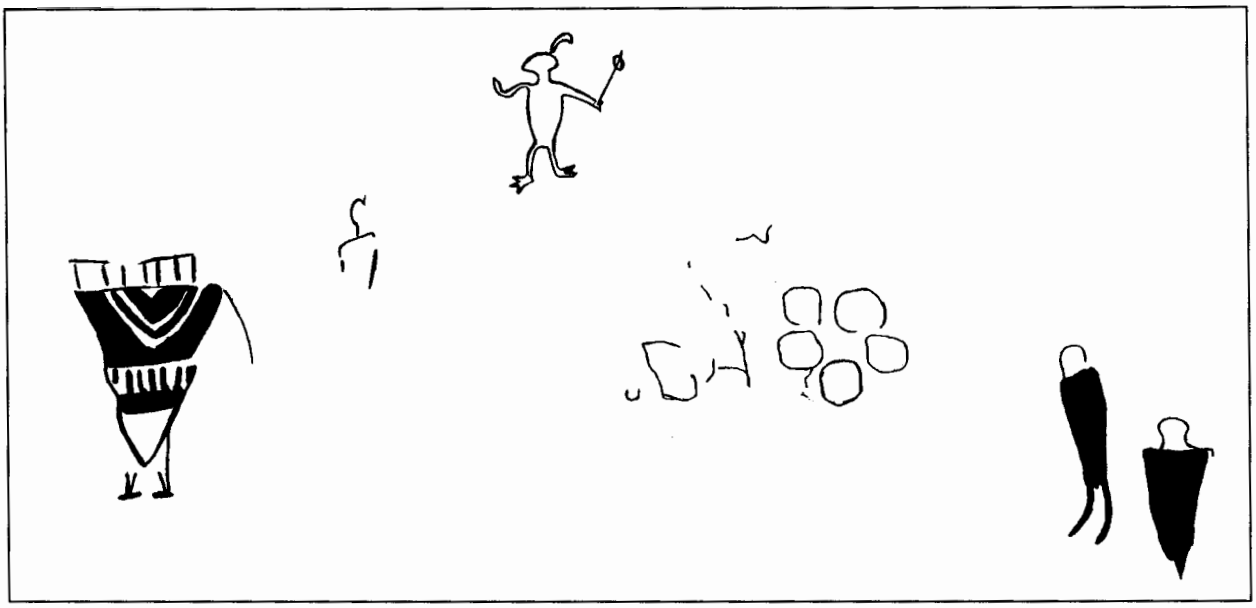


Figure 9.7 Detail of Panel 1, Green Mask site, showing Basketmaker style rock paintings just east of those shown in Figure 8. Leftmost figure appears to wear a diaper-like menstrual apron, belt and necklace that are indicated by painting and pecking. Smaller figure to the right appears to hold an atlatl or dart. Solid areas are red; outlined areas are white. Leftmost figure is approximately 40 cm in length. Adapted from a field sketch by Vaughn Hadenfeldt.

over a period of time by different artists. Much of the art is precisely executed and very decorative, for example, multi-color "rakes" that have very fine parallel zig-zag lines, and extremely fine-line rectangular "boxes" that include zig-zag and parallel straight lines. This information and the height of the paintings indicate that they had ceremonial significance. The presence of the figure with a horned headdress supports that proposal.

San Juan Basketmaker Rock Art

It is possible that all or some of the predominantly abstract rock paintings described above date from the Basketmaker II–III period. The making of this style of art may have been a hunter-gatherer tradition that was continued by Basketmakers. Evidence of Basketmaker associations with abstract rock art exists in the Zuni-Cibola region of northwestern New Mexico, where abstract petroglyphs may be Basketmaker in origin (Schaafsma 1980) and on Cedar Mesa, Utah, and the upper Dolores River valley, Colorado, where scratched and incised abstract forms are juxtaposed with more definitive Basketmaker style rock art (Ives 1986; Cole 1990). Stronger evidence exists in the presence of incised and impressed abstract imagery in clay walls of Basketmaker II storage cists at North Shelter, near Durango, Colorado (Morris and Burgh 1954: Fig. 77). These wall images (Figure 9.3) are similar to forms at the Green Mask site (Figures 9.4–9.6) and elsewhere.

A second style of rock art at the Green Mask site has long been associated with San Juan Basketmakers and probably dates from the Basketmaker II–early Basketmaker III period (pre-A.D. 1 to 500–600). This generalized Basketmaker style is predominantly representational and features anthropomorphic imagery. Identification of the Basketmaker style art is based on comparisons with styles (including paintings and petroglyphs) from the San Juan River drainage described by Guernsey and Kidder (1921), Haury (1945); Daniels (1954), Turner (1963, 1971), Grant (1978), and Schaafsma

Figure 9.8 Detail of Panel 1, Green Mask site, showing red, white and pecked figures that may represent females with faded white heads wearing diaper-like menstrual aprons. Historic signatures and other elements are also visible. Elements to the east of the above are shown in Figure 9.7. Rocks in the foreground are part of a masonry wall from the late Peublo II–Pueblo III period. Scales are 10 cm in length.

(1980). Significant locations for the identification of San Juan Basketmaker styles are the vicinity of Butler Wash, Utah, and Marsh Pass-Tsegi Creek and Canyon de Chelly-Canyon del Muerto, Arizona (Figure 9.1)

Basketmaker style rock art at the Green Mask site is located in two general areas within the rockshelter and occurs on much of the vertical wall space directly above and behind two living floors in Panels 1 and 4–7 (Figure 9.2). Most of it is located well below the panels of polychrome abstract rock art and is easily visible and can be reached from adjacent floor areas. A relatively small number of elements, approximately eight, are in Panel 1 on a sloping wall in the rear of the rock cleft noted by Wetherill above. This panel is above and behind late Pueblo II–Pueblo III period masonry walls on the upper occupation level (Figures 9.7 and 9.8). A number of elements that appear to be modern "copies" of

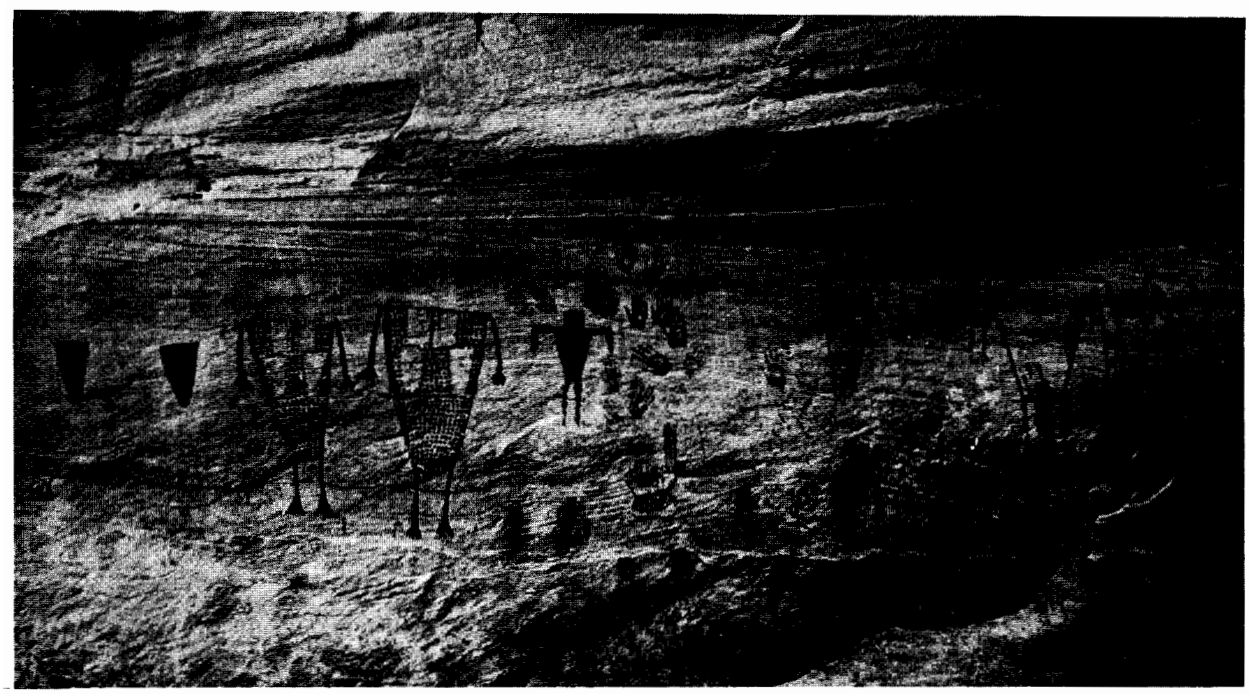


Figure 9.9 Detail of Panel 4, Green Mask site, showing very faded white anthropomorphs wearing roughly crescent-shaped headdresses, side hair bobs and a variety of red elements including handprints and possible females signified by "breasts" and "nipples" and a "birth scene". Three red trapezoidal "breast plates" carefully superimpose the torsos of faded white anthropomorphs. Handprints are life size.

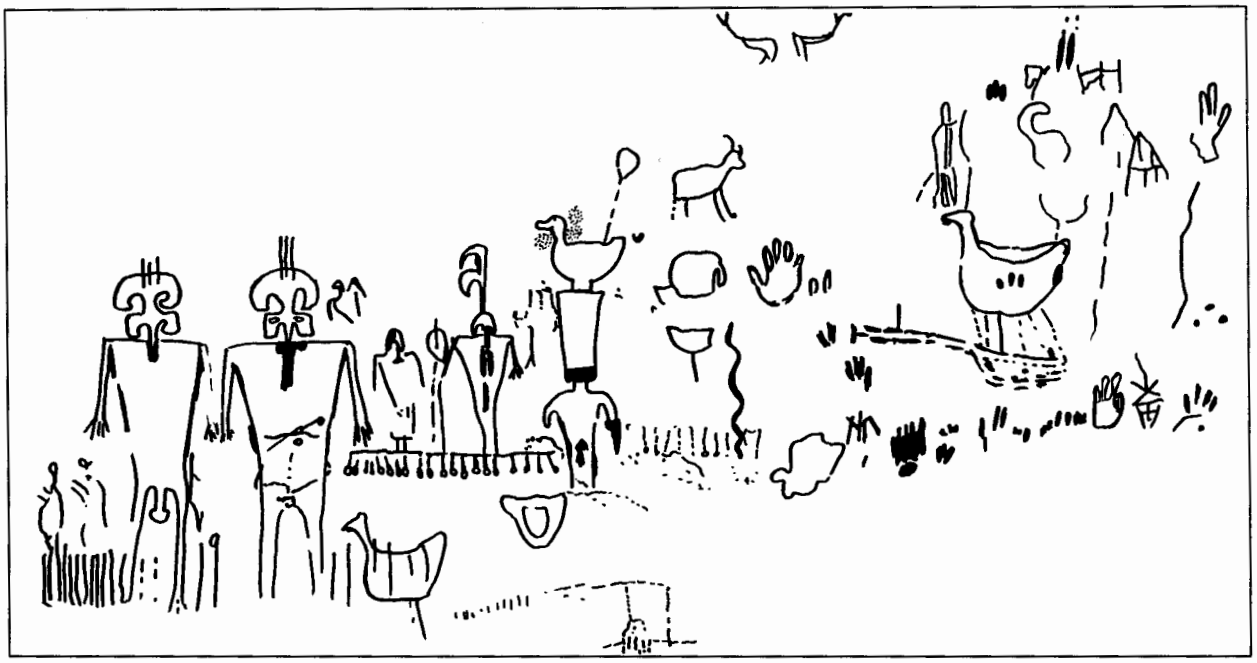


Figure 9.10 Detail of eaxt central portion of Panel 7, Green Mask site, also shown in Figure 14. Imagery includes pinkish white anthropomorphs (one phallic male), birds, roughly crescent-shaped headdresses, side hair bobs, a tablita-like headdress with a bird on top, a plume-like headdress, handprints, lines, quadrupeds and a possible snake. Contrasting colors of red, yellow and white are indicated by solid areas; stippled areas represent mud balls. Handprints are life size. Adapted from a field sketch by Dennis Hadenfeldt.

Basketmaker style art also occur on this panel, as well as historic signatures.

More than 200 additional Basketmaker style elements are identified in Panels 4–7, on the nearly vertical rear wall of the rockshelter and just above the lower living floor in all but the extreme east end of the shelter where the floor level drops. The greatest concentrations of images occur in Panel 4 (Figure 9.9) and in the central portion of Panel 7 (Figures 9.10 and 9.11), where elements are very crowded and superimpositions are visible.

Description and Interpretation

Since the time of the Wetherill expeditions and the work of Kidder and Guernsey (1919; Guernsey and Kidder 1921) at Marsh Pass, Arizona, much has been learned of the Basketmaker culture and continues to be learned as evidenced by papers in this volume. Accordingly, Basketmaker rock art styles exist within an ever increasing context of material culture and related meanings. Some subjects and themes of Basketmaker style rock art are found in art and material culture of historic Pueblos, particularly the Hopi, Zuni, and western Keresan of Acoma (Fewkes 1903; Stevenson 1904; White 1932, 1943; Smith 1952; Stephen 1969). This provides another context for interpretation on a broad level that takes into account significant cultural changes through time. Such changes, prehistoric and historic, are evident in archaeological and historic records (Ortiz 1979; Cordell 1984).

Basketmaker style imagery at the Green Mask site includes anthropomorphs, quadrupeds, atlatls and darts, handprints, finger prints, possible snakes, a plant-like form, and geometric designs such as zig-zag lines, rows of straight lines, and dots. A number of unidentified elements also occur.

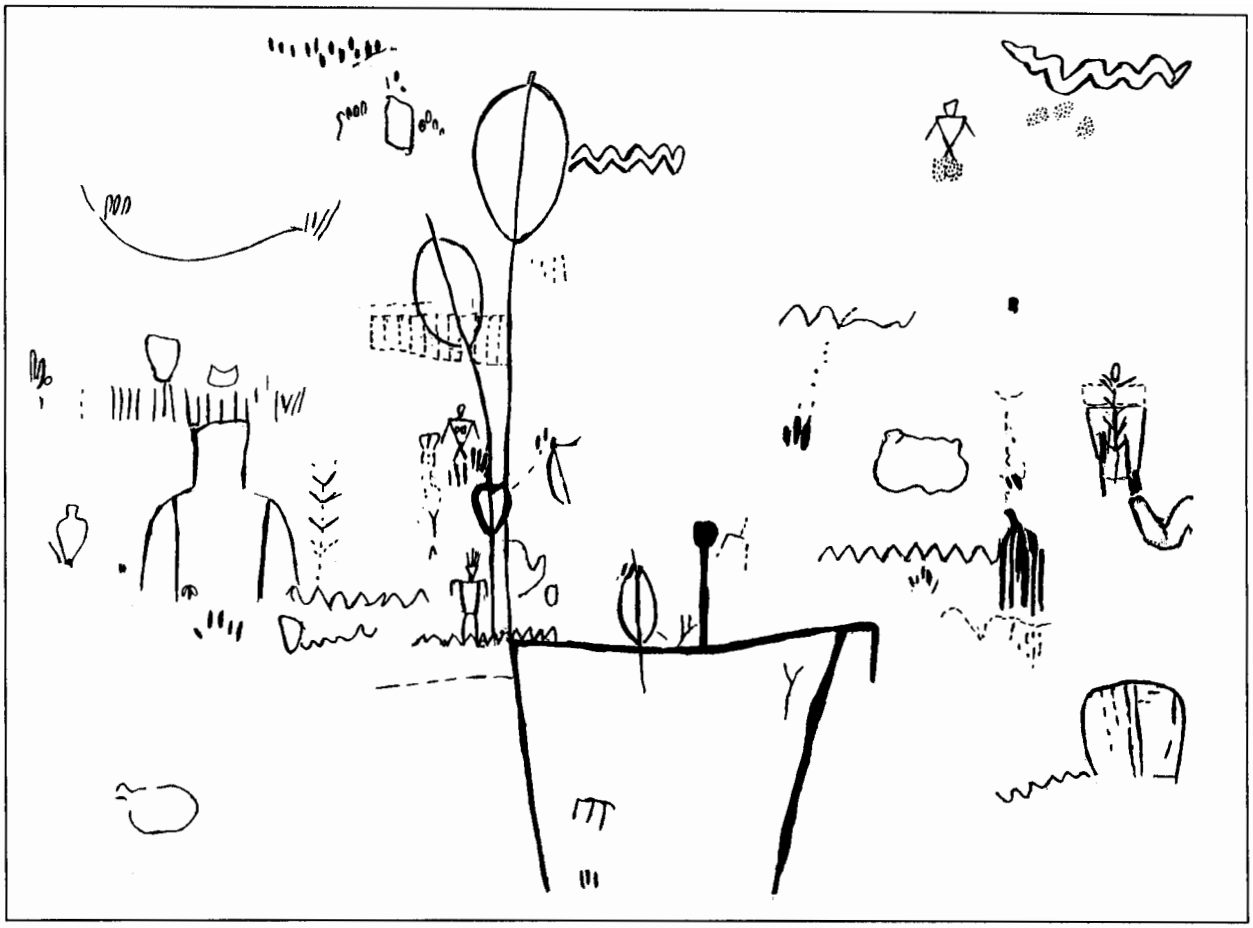


Figure 9.11 Detail of the east central portion of Panel 7, Green Mask site, showing white, pinkish white and red paintings. More lightly outlined elements and lines are white and pinkish white; heavy lines and solid areas are red. Stippled areas represent mud balls. The two large atlatl or dart representations in the left center are white; oval is red and pecked. Small triangular figure may represent a female with breasts; rectangular figure below wears a crown-like headdress. Largest anthropomorph shown in heavy outline and "dart" in the left shoulder are red. Drawing is foreshortened; largest atlatl or dart is approximately 1.2 m in length. Adapted from a field sketch by Dennis Hadenfeldt.

The great majority of elements are rock paintings, monochrome and polychrome; a few elements incorporate pecking and grinding. Paintings are white, pinkish white, yellow, brownish yellow, red, reddish brown, and green. White and pinkish white were used extensively, and appear the most faded; some images are barely visible with only shadow-like forms remaining on the cliff. Colors other than white, particularly red, are not only better preserved (and may be more recent) but often superimpose and add details to white forms.

Superimpositions include red "breast plates," handprints, and anthropomorphs on white anthropomorphs in Panels 1 and 4 (Figures 9.7–9.9), and red and pecked "nipples" shown on pinkish-white figures in Panel 7 (Figures 9.12 and 9.13). Additionally in Panel 7, collars or necklaces and head details painted yellow appear on pinkish-white figures as do red torso streaks, white genital areas, a white necklace, and a white arm band (Figures 9.10 and 9.12–9.14).

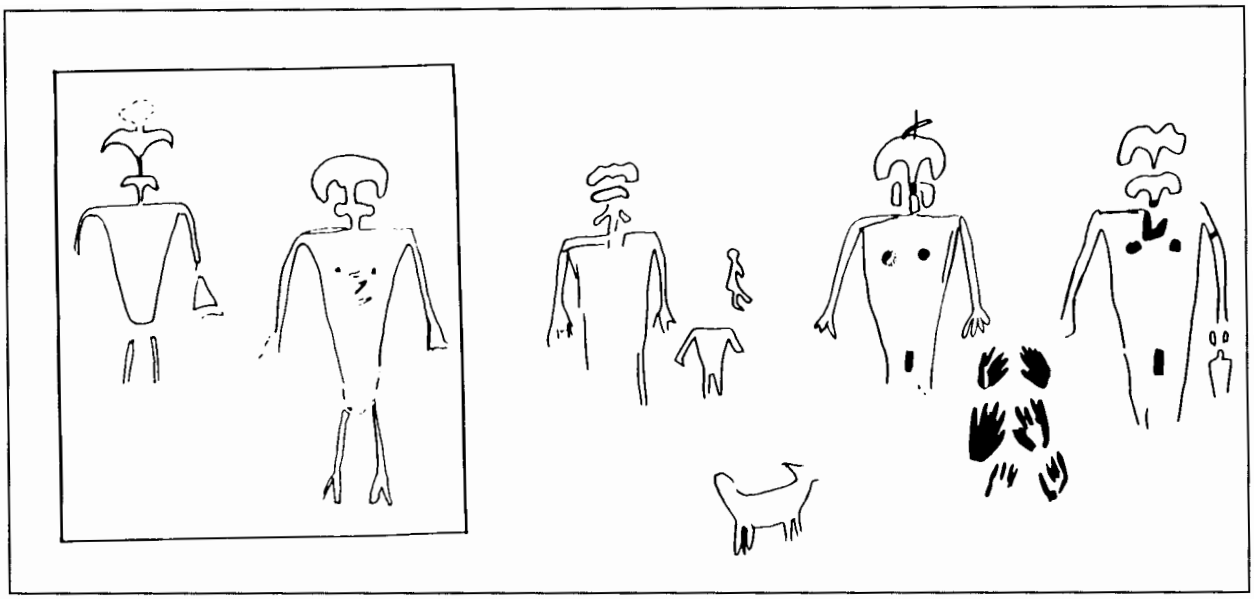


Figure 9.12 Details of west central portion of Panel 7, Green Mask site. The rightmost elements are also shown in Figure 9.13. Inserted figures occur approximately one meter west of others. Areas shown in outline are pinkish white; solid areas are red, yellow and white; and stippled area is pecked. Red and pecked "nipples" shown on 3 figures may signify females; burials 488 and 489 were reportedly remove from below the right most pair. Red handprints are life size. Adapted from field sketches by Kathy Kankainen and Becky T. Menlove.

Featured representations at the Green Mask site are static broad-shouldered anthropomorphs that may have arms and legs hanging down. Anthropomorphs at the Green Mask site range from approximately twenty centimeters to more than a meter in length. Body forms are tapered or trapezoidal and rectangular, and may be painted solid or in outline and with interior body decorations. Other figures have triangular body forms with reverse-V shaped legs, and a few are stick figures. Similar anthropomorphic images are shown on San Juan Basketmaker II–III textiles, basketry, and ceramics (Pepper 1902:15; Guernsey and Kidder 1921:Fig. 26c; Morris and Burgh 1941:Fig. 13f; Lister and Lister 1978:Fig. 4, 7). A few anthropomorphs that appear active are also shown in rock art (Figures 9.7 and 9.12). These generally are smaller and more natural in form than the highly stylized static figures. Relatively large hands and feet are present on some figures, and some show details of toes and fingers. Figures may hold items such as those shown in Panels 1 and 7 (Figures 9.7, 9.12 and 9.13). Heads are rounded, linear, trapezoidal, and rectangular in shape. With one possible exception in Panel 7 (Figure 9.10), facial features do not appear to be represented at the Green Mask site.

Heads of some anthropomorphs may be missing as noted by Wetherill in 1896–1897. Obvious examples are in Panels 1 and 4, in the western portion of the site (Figures 9.7–9.9), where relatively large red figures appear at first glance to be headless. Some of these figures, however, superimpose white anthropomorphs and share white heads that are very faded and difficult to see. Faded white heads occur with red torsos in at least five of six instances in Panel 1 (Figures 9.7 and 9.8); other heads may no longer be visible. It is quite possible that all of the headless figures noted by Wetherill originally had white heads.

In Panel 4 (Figure 9.9), nine or more faded white anthropomorphs wearing headdresses similar to those in Panel 7 (Figures 9.10 and

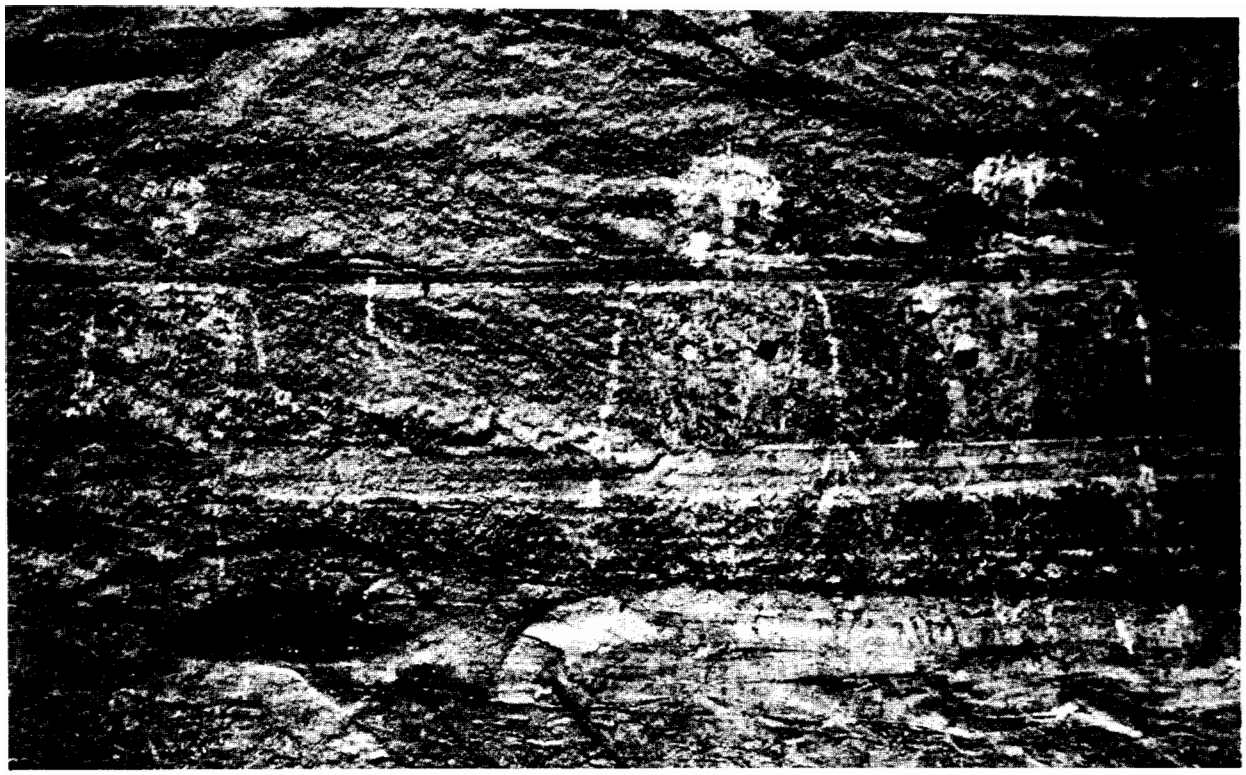


Figure 9.13 Detail of west central portion of Panel 7, Green Mask site, showing pinkish white figures wearing roughly crescent shaped headdresses and side hair bobs with various details in white, red and yellow. "Nipples" on pair of figures to the right are painted red and pecked and may signify females; red handprints appear between the pair. Wetherill burials 488 and 489, the "princess" and "companion to the princess" were reportedly removed from below the pair. The elements are also illustrated in Figure 9.12. Handprints are life size.

9.12–9.14) are present and are superimposed by red images including handprints, anthropomorphs, and trapezoidal "breast plates." The "breast plates" are situated on torsos of white figures and, in at least one instance, the head of a faded white figure appears to serve as the head for a red anthropomorph with interior dot decoration. A second "headless" figure with interior dots and two nearby "headless" red figures shown in outline also may share heads of faded white figures, but these relationships are not clear.

The presence of faded white heads in Panels 1 and 4 seriously challenges any association between that type of imagery and burials of "fragments of human beings" that presumably were removed from the area below the panels (Figure 9.2). Relationships between rock art and burials described by Wetherill are discussed in more detail below.

Hairstyles, indicated by side bobs; items of dress, indicated by belts and diaper-like aprons; and jewelry, indicated by necklaces, arm bands, and possible pendants, are shown (Figures 9.7–9.10 and 9.12–9.14). San Juan Basketmaker II–III artifacts including burial materials support these identifications (Guernsey and Kidder 1921; Amsden 1949; E. H. Morris 1951; Morris and Burgh 1954; Morss 1954; E. A. Morris 1980).

Headdresses of various types are exhibited, and some examples are elaborate. These include a tall rectangular device topped with a ducklike image, a crown-like "feather" headdress, and a tall plume-like headdresses

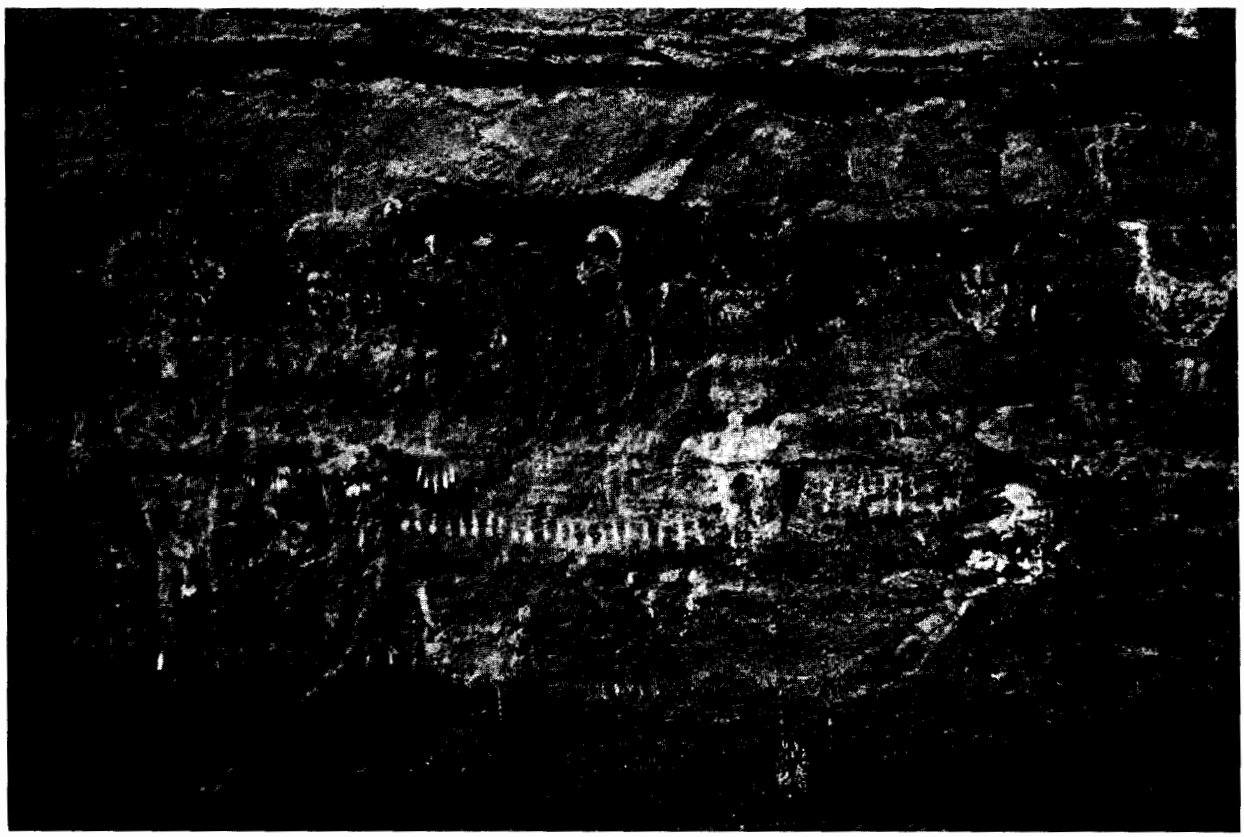


Figure 9.14 Detail of west central portion of Panel 7, Green Mask site, that is illustrated in Figure 9.10. Elements are predominantly pinkish white with various details and other elements shown in red and pecked. Lower face band enclosed by dashed lines is yellow. Area directly below dashed shoulder line is yellowish brown with red and pecked details as indicated. The lower torso (not shown) is decorated with horizontal red and pecked zig-zag lines. Face is approximately life size.

shown in Panel 7 (Figures 9.10, 9.11 and 9.14). The rectangular device suggests *tablitas* or decorated thin wooden boards worn as headdresses in Pueblo ceremonies (Fewkes 1903; Stevenson 1904; Stephen 1969).

Roughly crescent-shaped headdresses, one and two levels high, are worn by white figures in Panels 4 and 7 (Figures 9.9, 9.10 and 9.12–9.14). These are similar to headdresses exhibited elsewhere on Cedar Mesa and at Butler Wash, Utah (Figure 9.15), Cannonball Mesa, Colorado (Figure 9.16), and Canyon de Chelly–Canyon del Muerto, Arizona (Grant 1978:212; Fig. 4.13a, 4.19b–d), which appear to be centrally mounted on or suspended from a stick. At Butler Wash sites, similar single and multiple stacked devices occur independently and displayed at the top of a stafflike form (Cole 1989:Fig. 3a), suggesting that the crescentlike imagery functioned in more than one way.

A wooden artifact (roughly crescent-shaped) with a carved duck-like design and a hole, possibly for suspension (Figure 9.17a and b), is strikingly similar to the crescent-like headdresses shown in rock art. The similarity is emphasized by a rock painting from Slickhorn Canyon on Cedar Mesa showing an anthropomorph wearing one of the headdresses with a duck-like bird attached to the top (Figure 9.18). The wooden artifact presumably was collected in the Grand Gulch-Cedar Mesa area in 1890–1891 by McLoyd and Graham. It is not known if it dates from the

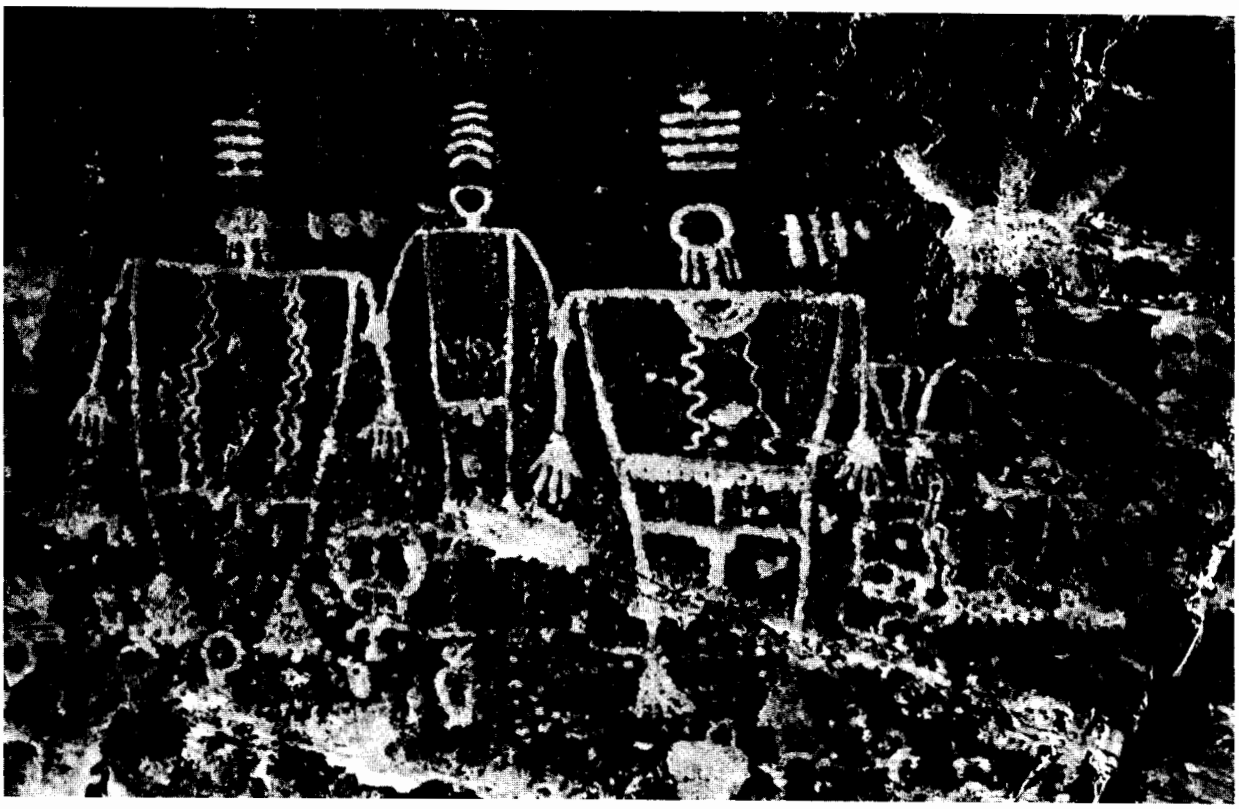


Figure 9.15 Detail of Basketmaker style petroglyphs, San Juan River canyon near Butler Wash, Utah. Roughly crescent-shaped headdresses and independent elements similar to headdresses at the Green Mask site are shown. Note the large mask-like head on figure to the right. Larger anthropomorphs are approximately one meter in length.

Basketmaker period, and it is not apparent how the artifact may have been used. The similarities between rock art images and the artifact, however, support the possibility that the artifact was used as a headdress and perhaps as part of a hand-carried "standard."

Grant (1978:153–160, 170–174, 186–213) has discussed birds that frequently are depicted in Basketmaker III–Pueblo I style rock art of Canyon de Chelly. Of particular interest are anthropomorphs with heads replaced by birds and those with birds perched on their heads. Related imagery probably dates from the Basketmaker II–early Basketmaker III period. Examples include the headdress from Slickhorn Canyon discussed above and the *tablita*-like headdress with a duck-like bird perched on top from Panel 7 at the Green Mask site (Figures 9.10 and 9.14).

Two, possibly three, birds in addition to that on the headdress are represented in Panel 7 (Figures 9.10 and 9.14). One bird-like form appears to hover above the left shoulder of a large anthropomorph. Two similar birds with long necks and boat shaped bodies are shown, one below the left arm of the same large anthropomorph.

A variety of birds and their feathers are associated with both San Juan Basketmaker style rock art and artifacts. Wading birds, a quail, turkeys, ducks, and geese appear in rock art (Grant 1978; Castleton 1979; Schaafsma 1980; Cole 1989, 1990). Guernsey and Kidder (1921:99; Fig. 16, Pl. 18, 39-40, 61) report a Basketmaker II ceremonial wand with a carved bird head and a bundle of feathers suspended from the neck, as well as a stuffed bird skin, a feather

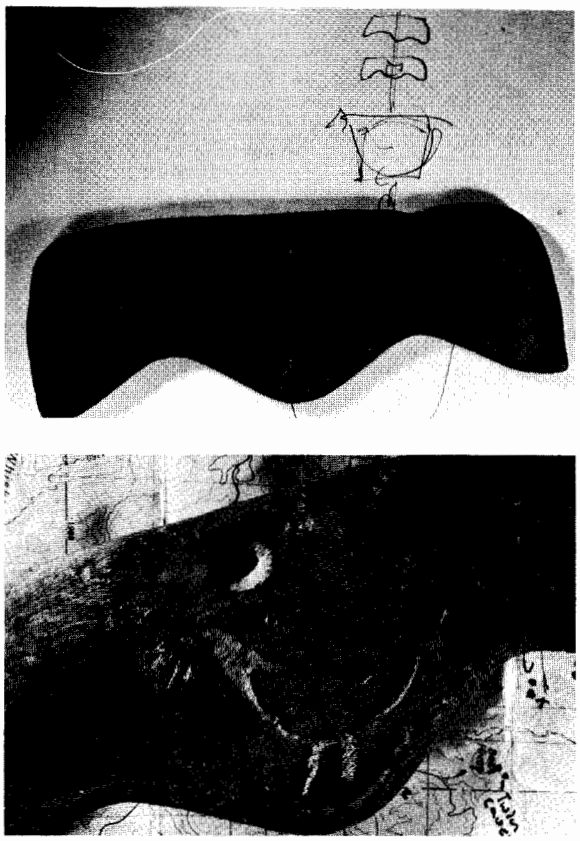
headdress (crown-like), and numerous feather bundles and feather clothing. Feathers representing at least 16 bird species have been reported from a Basketmaker II context at Sand Dune Cave, Utah (Hargrave 1970:41). Pepper (1902:13, 15) and Morris and Burgh (1941:Fig. 16f) illustrate Basketmaker II and Basketmaker III basketry with bird representations.

Figure 9.16 Detail of Basketmaker style petroglyphs at Cannonball Mesa (site 5MT312) in southwest Colorado. Anthropomorphs wear roughly crescent-shaped headdresses and side hair bobs similar to those at the Green Mask site. Larger anthropomorphs are approximately one meter in length.

Among the historic Pueblos, birds and their feathers have considerable spiritual significance and are symbolized by katsina masks, carved wooden fetishes, wall murals and other painted images as well as by feathers worn and carried in a variety of ceremonies (Fewkes 1903; Stevenson 1904; Bunzel 1932; White 1932, 1943; Smith 1952). In a fashion similar to Basketmaker rock art representations, certain katsinas of the Hopi wear whole birds as headdresses (Fewkes 1903:Pl. 15, 17). "Prayer feathers" attached to sticks and to strings are made periodically by religious societies, and are placed before altars, at shrines and in private homes. Clans, esoteric societies and katsinas of the Hopi, Zuni and western Keresan symbolize and are identified with birds that figure prominently in oral traditions where they perform supernatural feats and act as intermediaries between the upper and lower worlds (Fewkes 1903; Stevenson 1904; White 1932, 1943; Courlander 1971; Stephen 1969).

Abstract interior body decorations, such as dots and trapezoidal "breast plates" (solid and decorated with zig-zag lines), "pendants," necklaces, and an arm band are exhibited at the Green Mask site (Figures 9.8–9.10 and 9.12–9.14). These may represent painted body decorations and other forms of adornment similar to those worn by historic Pueblo katsinas, social dancers, and medicine and other society participants (Fewkes 1903; Stevenson 1904; Bunzel 1932; White 1932, 1943; Stephen 1969).

Basketmaker style anthropomorphs with elaborate headdresses and body decorations, and those lacking naturalistic qualities may be symbolic of supernatural beings. Grant (1978:167–189) has convincingly argued that similar forms in Canyon de Chelly rock art may have symbolized shamans, their knowledge, supernatural powers, and spiritual



Figures 9.17a and b Views of an artifact of shaped wood with a carved duck-like image similar in form and symbolism to headdresses at the Green Mask site and elsewhere in the San Juan River drainage. Artifact is 18 cm in length; a hole is visible in the center. Artifact collected by Charles McCloyd and C. C. Graham in 1890–91, presumably from Grand Gulch, Utah. No information on provenience and cultural associations available. C. H. Green Collection, Catalogue number 49E, Field Museum of Natural History number 21543. Photographs courtesy of Wetherill–Grand Gulch Research Project, Bruce Hucko, photographer.

experiences including death and soul flight into various realms of the cosmos. He has observed that the frequently associated birds may be symbolic of soul flight. It also is possible that anthropomorphic imagery was related to ancestors and ancestral traditions. Both of these themes (and bird symbolism) are

Figure 9.18 Detail of Basketmaker style paintings in Slickhorn Canyon, Cedar Mesa, Utah. Faded white anthropomorph in center wears a roughly crescent shaped headdress with an attached duck-like bird and side hair bobs. Anthropomorph is approximately one meter in length.

present in historic Pueblo ceremonies and mythology, particularly those of medicine and warrior societies (White 1932, 1943; Titiev 1944; Stephen 1969) and the katsina cult, which have strong ancestral associations (Fewkes 1901, 1903; Stevenson 1904; Titiev 1944).

Gender is indicated by varied imagery at the Green Mask site. Females may have been significant subjects for the artists. One pinkish-white male (with a phallus) is shown in Panel 7 (Figures 9.10 and 9.14), and twelve "females" in Panels 1, 4, and 7 may be signified by diaper-like clothing, by the depiction of breasts and nipples, and by a possible birth scene (Figures 9.7–9.14).

Figure 9.19 Detail of red and white Basketmaker style rock paintings in Grand Gulch, down stream from the Green Mask site. The figures are similar in form and decorative details to those shown in Panel 1 at the Green Mask site and may represent females wearing diaper-like menstrual aprons and belts. Larger figures are approximately 50 cm in length.

Female identifications are based on comparisons with Basketmaker diaper-like (string) menstrual aprons and clay and vegetal female figurines with similar details (E. H. Morris 1951; Morss 1954; E. A. Morris 1980). Examples of diaper-like menstrual aprons are shown in Panel 1 and at other rock art sites in Grand Gulch (Figure 9.19) and in Butler Wash, Utah (Figure 9.20). This type of imagery has been described by Cole (1989, 1990). Interestingly, dots decorate the bodies of possible females with breasts and nipples in Panel 4 (Figure 9.9), and are used to represent bandolier-like devices worn by "females" shown in Figure 9.20. Punctations in some Basketmaker III clay figurines give them a similar appearance.

The possible birth scene occurs in Panel 4 (Figure 9.9). The "mother" is shown in red outline and appears to superimpose a red solid-painted "child." Colors of the two figures vary somewhat, and it may be that they were not part of an original composition. Just below the left hand of the "mother" is a small red outline figure with "nipples," another possible female. It has been suggested that the birth scene represents a breech birth because of the upright position of the "child" (Castleton

Figure 9.20 Detail of Basketmaker style petroglyphs in Butler Wash, Utah. The two larger anthropomorphs, more than a meter in length, may represent females with diaper-like menstrual aprons, belts, bandoliers and a collar. These figures may have originally been painted as well as pecked and are similar in details to figures shown in Panel 1 at the Green Mask site (Figure 9.8) and in Figure 9.19.

1979:249). It is possible that the symbolic message was less specific, and the position of the "child" (possibly a pre-existent image) was not crucial. While some level of realism is exhibited in San Juan Basketmaker style rock art, naturalism is rare. Additionally, symbolism exists on many levels, and operating principles of the distant past are unknown. An upright figure may have symbolized life or well-being, whereas a reversed figure symbolized death or other misfortune, important distinctions to make depending upon the function of the rock art.

In Panel 7, females may be signified by red and pecked "nipples" that appear on three pinkish-white figures, two of which have genital areas marked in white (Figures 9.12 and 9.13). Red handprints appear between these figures. Handprints also appear with possible females in Panel 4 (Figure 9.9). Elsewhere in Panel 7, a relatively small white figure may also have nipples or breasts signified (Figure 9.11).

The nature of symbolism and the function of rock art can be used to address Wetherill's comments (1896–1897 field notes) regarding possible relationships between certain rock art images and burials recovered from the Green Mask site. As discussed above, the floor area below "headless" red figures in Panels 1 and 4 (Figures 9.2 and 9.7–9.9) is probably the location of burials of "fragments of human beings" described by Wetherill. Other burials described as "the princess" and "companion to the princess" (specimens 488 and 489) were apparently removed from below paintings of a pair of possible females having red and pecked "nipples" in Panel 7 (Figures 9.2, 9.12 and 9.13).

It is likely that both sets of burials are Basketmaker in origin. Wetherill's records indicate that he was aware of levels of excavation and culturally diagnostic features and materials during the 1896–1897 field season. Additionally, other Basketmaker burials of partial human remains have been reported. A Basketmaker burial of arms with hands was reported from Canyon del Muerto (Canyon de Chelly) by E. H. Morris (1925:291–292), and partial human burials are discussed in this volume by Turner and Hurst. A photograph of "the princess" with associated burial materials, taken by Wetherill, was examined during preparation of this paper. Basketry and burial characteristics indicate a Basketmaker II origin.

Despite probable Basketmaker origins for both sets of burials and nearby rock art, linkage between specific imagery and burials is tentative at best. Precise dates for the burials and paintings are unknown; each may have occurred any time during the proposed Basketmaker time span at the site (pre-A.D. 1 to 500–600). As discussed above, "headless" figures in Panels 1 and 4 may originally have had heads, either contemporaneous or shared with earlier forms. For that matter, some or all figures with breasts and nipples may not signify females. Even if headless figures and females are represented and can be associated with nearby burials, rock art images may have been related to spiritual concepts rather than reality.

While burials recovered by Wetherill are not demonstrably linked to rock art found in close association, it is reasonable to assume that rock art at the Green Mask site was related to events that took place there over time, possibly in adjacent areas. Events involving various social groups and special use areas of the site may have included birth, death, burials, and everyday occurrences involving food procurement and storage. Ceremonies related to any and all of these events may have also taken place. Archaeological features and materials indicate that the site was, at least, used for multiple burials and storage.

Support for relationships between rock art and use of the Green Mask site is found in the spatial organization of highly visible imagery just above the two living floors. An obvious way in which rock art and floor areas may be related is that rock art was made for periodic ceremonies and served to communicate appropriate symbolism during and after the events. The appearance and ceremonial nature of some Basketmaker style art described above and below reinforce this proposal. Historic Pueblo kiva paintings periodically serve similar ceremonial functions (Smith 1952).

Basketmaker style rock art at the Green Mask site, with the variety of colors, techniques, states of preservation, and imagery, appears to have been created over time by various artists. However, organization and containment of subject matter is evident, suggesting that certain wall space functioned

for certain symbolism over time. For example, "females" are concentrated in Panels 1 and 4 and in the central portion of Panel 7 (Figure 9.2). Anthropomorphs with elaborate headdresses and bird representations are concentrated in Panels 4 and the central portion of Panel 7.

Juxtaposition and superimposition of images are most obvious in these same areas (Panels 9.4 and 9.7), and elements appear crowded in some instances. Additional Basketmaker style imagery at the Green Mask site has similar organizational qualities. This imagery, discussed below, includes handprints, atlatls and darts, and a representation of a whole hair and face scalp.

Handprints of both left and right hands are very common in San Juan Basketmaker style rock art (Grant 1978; Schaafsma 1980). Guernsey and Kidder (1921) have observed that they consistently occur at sites with Basketmaker remains in the Marsh Pass area. At the Green Mask site, handprints are found in groups and individually (Figures 9–11 and 12–14). Handprints are juxtaposed with and superimpose anthropomorphs including possible females (Panel 4; 7). Such usage suggests a relationship between those leaving the handprints and the anthropomorphs.

Figure 9.21 Detail of red Basketmaker style rock paintings in Grand Gulch, down stream from the Green Mask site. Anthropomorph appears with rows of possible atlatl or dart representations. Anthropomorph is approximately 40 cm in length.

Handprints may identify supplicants and participants in events and ceremonies. Handprints may also identify artists, members of socioreligious groups utilizing sites, and

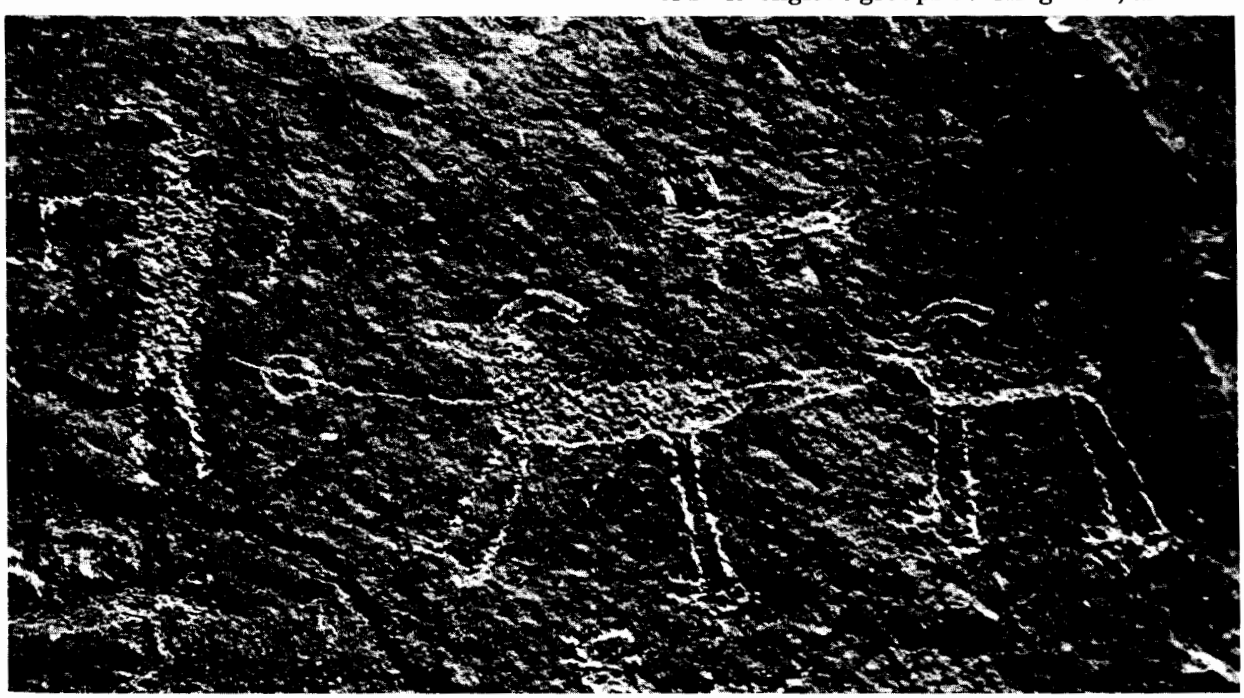


Figure 9.22 Detail of Basketmaker style petroglyphs in Slickhorn Canyon, Cedar Mesa, Utah, showing anthropomorph holding a possible atlatl and a quadruped impaled by a dart with attached projectile point. Larger elements are approximately 20 cm in length.

Figure 9.23 View of the Green Mask, east portion of Panel 7, Green Mask site. The Basketmaker style image is an approximately life-size face decorated by horizontal bands with hair worn in side bobs. A pyramid-shaped loop appears on top of the head. It occurs on a surface that appears smoothed by abrasion. Colors are green, yellow, white and red. The image is similar in form and details to a whole hair and face scalp reported by Kidder and Guernsey (1919). Mud balls that presumably date from the Pueblo II–III period surround the Green Mask; one touches the left hair bob.

combinations of all the above. Grant (1978:168–169) reports that handprints are viewed as a kind of signature among the historic Pueblo, possibly used for sympathetic magic and acting to identify individuals who complete tasks such as plastering a room or performing a ritual. Stevenson (1904:233) describes a Zuni rockshelter shrine marked by handprints. The masks of a Zuni katsina and of the Hopi Hand katsina (Matia) are marked by a handprints (Fewkes 1903:104).

Seven atlatls and darts, painted white and red, appear to be represented in Panel 7 (Figure 9.11). Another example of an atlatl or dart is depicted in Panel 1 (Figure 9.7) and is shown being held by an anthropomorph. Grant (1978:30–31, 53, 210–211) has discussed the representation of atlatls in Basketmaker rock art at Canyon de Chelly and elsewhere. Images show the wooden shaft and leather finger loops of Basketmaker atlatls and darts with feathers. The imagery includes both abstract and highly detailed subjects. When

abstract, the representations of atlatls and darts are similar in appearance and serve as examples of conventionalized symbolism.

Atlatl and dart representations are frequently found in the Cedar Mesa area. One Grand Gulch panel shows a red painted anthropomorph arrayed with a collection of atlatls or darts (Figure 9.21). At a Slickhorn Canyon site, petroglyphs show a hunter holding an atlatl, and a nearby quadruped impaled by a dart with an attached projectile point (Figure 9.22). A nearby panel shows what may be a complete "tool kit" with atlatls, darts and projectile points.

In Panel 7 at the Green Mask site, two "atlatls" are in association with an anthropomorph painted in red outline and shown with a long neck and small round head (Figure 9.11). The white atlatls appear to cross a red oval that is also pecked and end near the right shoulder of the anthropomorph as if being held. A short red "dart" appears imbedded in the right shoulder near the neck of the anthropomorph. The neck and head are off-center from the torso, perhaps to accommodate the imbedded red "dart" that, along with the white atlatls, may have already been present when the anthropomorph was painted. Such relationships involving superimpositions between white and red images are consistent with observations about other panels at the Green Mask site.

The so-called Green Mask for which the site is named occurs relatively high on the wall, near the east end of Panel 7. The Green Mask is a striking and well preserved painting that exhibits four or five colors in carefully executed details (Figure 9.23). The complex image is found in relative isolation, in an uncrowded portion of Panel 7 that otherwise has relatively simple forms. Additionally, it is the only image of its type at the site, and serves as a clear example of image containment.

Interestingly, Wetherill does not discuss the Green Mask in his 1896–1897 notes despite his interest in rock art at the site, and the fact that the image is obviously that of an approximately life-size anthropomorphic head. Such subject matter seems consistent with his concern with "headless" figures at the site.

Analyses of the Green Mask image have been published (Cole 1984, 1985, 1989, 1990), and this discussion is brief. The Green Mask appears to have been painted on a smoothed wall area. It is possible that an earlier image existed in that location because faded red pigment is visible in the "neck" area. The mask has red hair worn in two side bobs, partially outlined in white, with white "ties." The top of the head shows a V-shaped area of white and yellow, and a slightly pointed loop (made by abrasion or possibly of mud plaster) is attached.

The face is decorated by alternating horizontal bands of green and yellow paint with some white outlines. The mouth area appears as blocks of faded yellow or natural within the lower band of green. This image probably represents a whole face and hair scalp similar to that excavated from a Basketmaker II burial and reported by Kidder and Guernsey (1919). Details of form and design allow the Green Mask to be identified by comparison to the scalp artifact.

It is the entire head skin of an adult, with the hair carefully dressed... The face has been colored rather elaborately; the "part" and tonsure are painted with a pasty, greenish-white pigment; up the center of the "part" and across the tonsure runs a narrow streak of yellow. Just under the forehead seam there is a thin, horizontal band of red. From this to a line drawn across the face half an inch below the eyes is a zone of white. A band left in the natural color of the skin extends from here to just below the nostrils, whence to the bottom the white paint is continuous, except of a broad median band of red running downward from the mouth seam (Kidder and Guernsey 1919:190–191).

The scalp was part of burial goods associated with a young female and infant. It presumably had been suspended around the

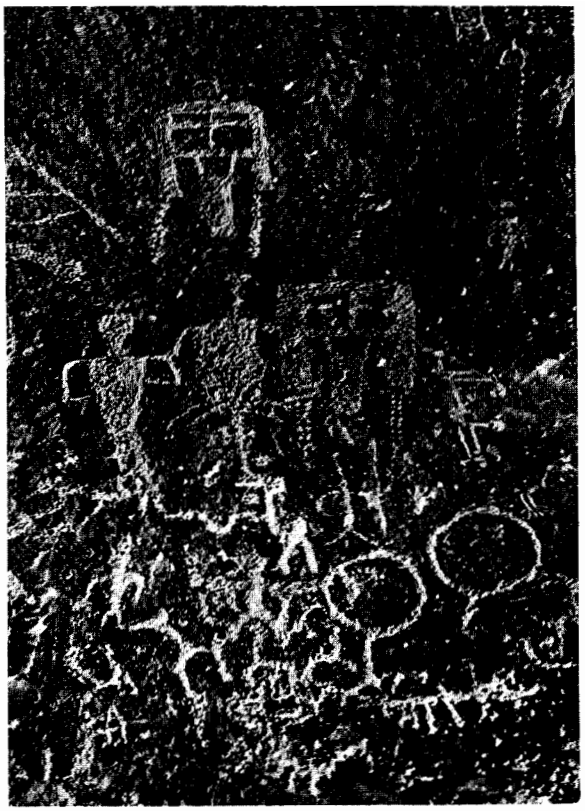


Figure 9.24 Detail of Basketmaker style petroglyphs near the San Juan River at Sand Island, Utah (site 42SA5263). Two images similar in form and details to the Green Mask are visible in the upper center. Upper figure has a rounded loop attached to the top of the head. No scale available.

woman's neck by use of a leather thong attached to the top. The thong was broken at the time of discovery, and the scalp rested beneath the woman's body. It is possible that the loop attached to the top of the Green Mask signifies a similar thong.

Rock art depictions of scalplike subjects are numerous in the San Juan River drainage, particularly in Grand Gulch (Schaafsma and Young 1983). The imagery appears to be more common north of the river than south, and occurs as petroglyphs as well as paintings (Figure 9.24). Generally, scalp-like paintings are less detailed than the Green Mask, and may show solid faces, some with hair in contrasting colors. A number of paintings and petroglyphs clearly show loops attached to the tops of heads.

The representation of scalps in rock art offers insights into how scalps may have been used other than as burial items, and what meaning they may have had. A painting from Canyon del Muerto, Arizona, appears to show a scalp-like object suspended from a loop on the head and carried by a Basketmaker style anthropomorph (Figure 9.25). This type of use is also suggested by loops on other rock art representations and by the presence of a thong on the Marsh Pass artifact. Scalps also

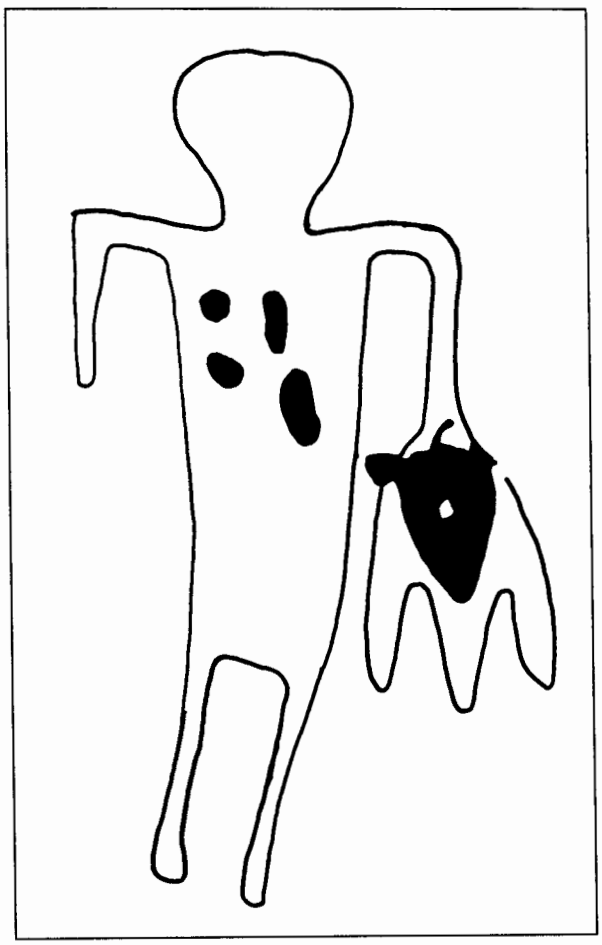


Figure 9.25 Detail of rock paintings in Canyon del Muerto, Canyon de Chelly, Arizona. Anthropomorph is painted white with green spots and appears to carry a scalp with white hair and a green face. Figure is approximately one meter in length.

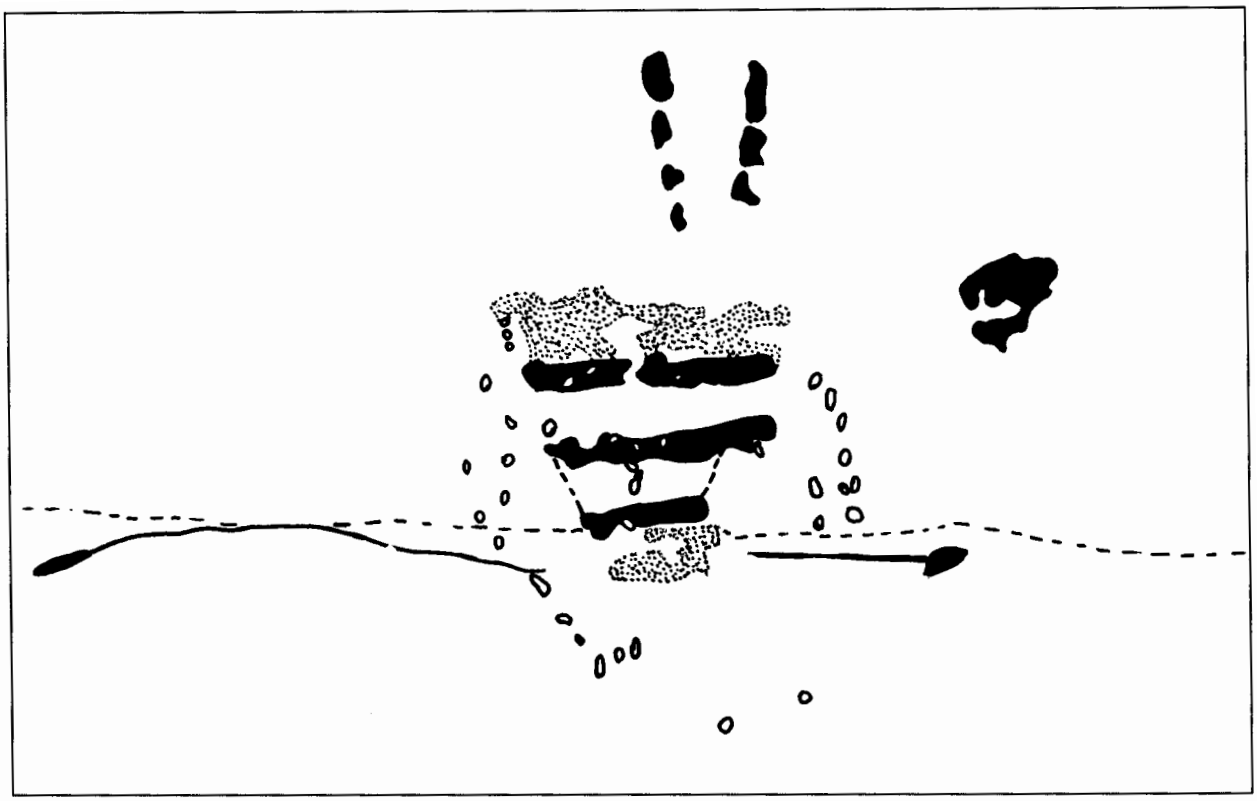


Figure 9.26 Detail of combination rock paintings and petroglyphs in Grand Gulch, down-stream from Shiek's Canyon. Drawing shows the head and shoulder area of an anthropomorph with face decorated in horizontal bands similar to the Green Mask. Solid areas are red; stippled areas are blue-green; and solid outlined areas are pecked. Lower face band enclosed by dashed lines is yellow. Area directly below the dashed shoulder line is yellowish brown with red and pecked details as indicated. The lower torso (not shown) is decorated with horizontal red and pecked zig–zag lines. Face is approximately life size.

may have been suspended from sticks and poles as suggested by historic Pueblo ceremonies (Stevenson 1904; Stephen 1969; Beaglehole 1976).

Certainly, the nature of scalps and the amount of preparation involved in the scalp artifact, as well as the burial context, indicate that such items were ceremonial in nature. Other meanings are suggested by historic Pueblo ceremonies that involve the taking and display of scalps. Scalps and scalp ceremonies are associated with ancestral traditions, warfare (trophies), becoming a warrior (initiation), fertility, and with prayers for moisture and rain (Stevenson 1904; White 1932, 1943; Stephen 1969; Beaglehole 1976).

In addition to obvious death symbolism of the scalp artifact and its burial context, the facial paint may have also been associated with death. An American Museum of Natural History specimen catalog from the 1893–1894 Hyde Exploration Expedition to Grand Gulch lists three mummies of children with coloring (green in two cases) on the lower part of the faces (specimens 562, 799, H-16015) and one of an old man with white and black pigment on the eye socket (specimen 485). Paint is used by historic Pueblos to decorate faces of the dead (Stevenson 1904:316; White 1943:322), which is indicative of socioreligious affiliations and experiences. Basketmaker painted symbolism also may have been related to the practice of masking by using facial coverings and facial paint (Figure 9.15; Daniels

1954:Fig. 114; Grant 1978:Fig. 4.60a, b) and designs similar to the Green Mask and scalp artifact (Figures 9.26 and 9.27).

Pueblo II–Pueblo III Rock Art

Pueblo II–III style rock art at the Green Mask site probably dates from the late Pueblo II–Pueblo III period, A.D. 1000–1050 to 1300. It appears to be limited to plaster discs in Panel 5 (Figure 9.2), mud balls and the remains of mud balls that have been thrown against the rockshelter walls, and relatively small pecked petroglyphs showing a phallic "lizard-man" and a possible snake in Panel 4 (Figure 9.2). This form of anthropomorph is typically found in rock art and on ceramics of that period (Grant 1978; Schaafsma 1980; Cole 1990).

Four plaster discs, a smooth pair and a pair impressed with spiral designs, occur on Panel 5, a rockshelter wall area that also serves as the blackened and plastered northwest wall of a possible kiva designated as Feature C (Figures 9.2 and 9.28). The spirals are oriented in opposite directions, one clockwise and one counter clockwise. Two smooth plaster discs also appear on masonry walls near where they abut the cliff on either side of the four.

Spirals are very common subjects of Pueblo II–III style rock art (Schaafsma 1980; Cole 1990). Spirals, shown clockwise and counter clockwise, are commonly represented on Pueblo II–Pueblo III pottery (Lister and Lister 1978). Among historic Pueblos, spirals are variously identified as being symbolic of a path, migration, and a whirlwind (Olsen 1985:107).

Plain and decorated painted discs, usually larger than those in Panel 5, are found north and south of the San Juan River (Anderson 1971; Schaafsma 1980; Cole 1990) where they commonly occur near cliff dwellings. These larger images, often highly visible, have been interpreted as representing shields and as being symbolic of social groups that used the dwellings.

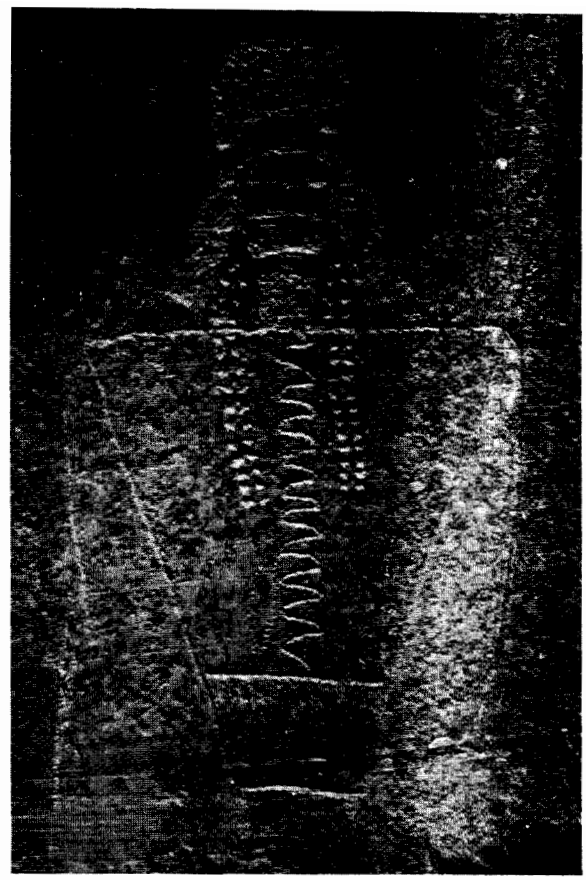


Figure 9.27 Detail of Basketmaker style petroglyphs from Butler Wash, Utah. Details of facial decoration and hair style are similar to those of the Green Mask and other rock art images in the San Juan River drainage. Figure is approximately one meter in length.

Mud balls are found in association with late Pueblo II–Pueblo III cliff dwellings north and south of the San Juan River. When both are present, mud balls sometimes appear to have been thrown at rock art. At the Green Mask site, mud balls and traces of mud are present on both upper and lower rock art panels (Figure 9.2). Some rock art elements have been hit and partially covered with mud (Figure 9.11), but it is obvious that it was not always the goal to hit rock art.

Juxtaposition of mud balls with rock art images may have been intended in some instances. Good examples of this last situation are seen in Panel 7. Several mud balls

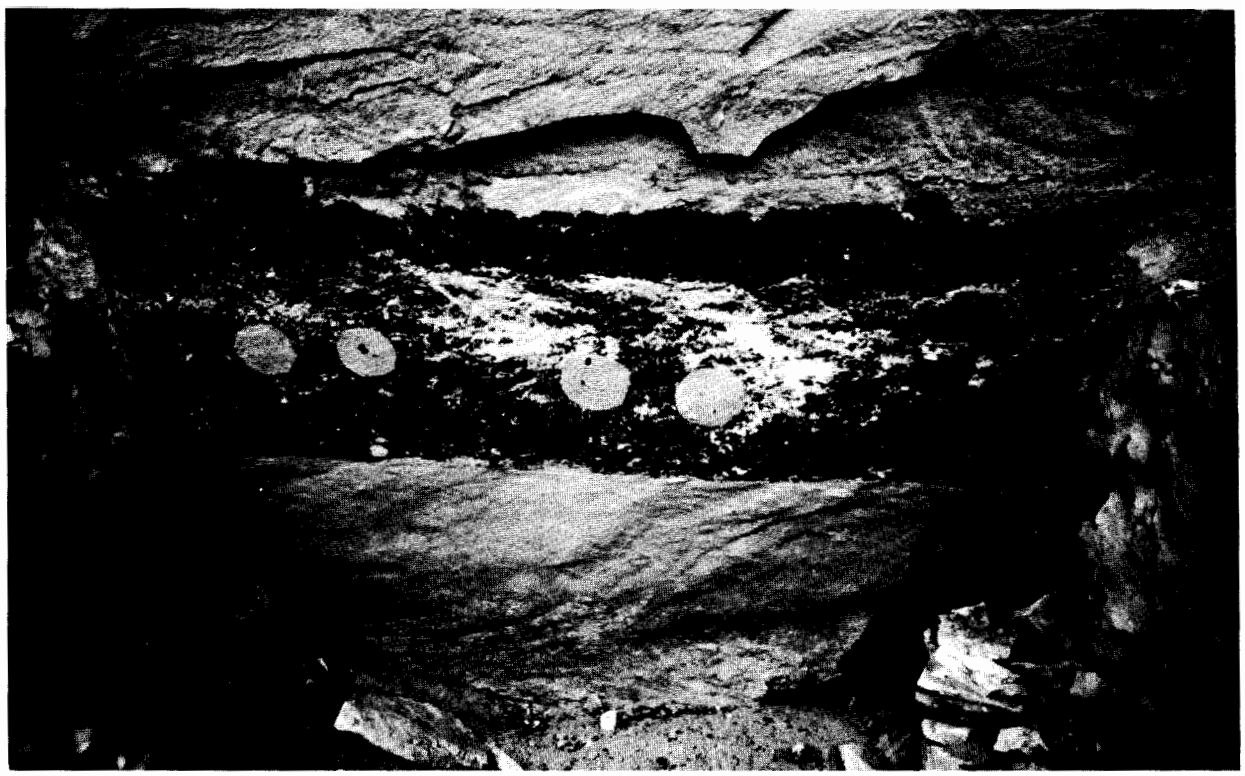


Figure 9.28 Detail of Panel 5, Green Mask site, Grand Gulch, Utah, showing the northwest wall of a possible kiva (Feature C) from the late Pueblo II–Pueblo III period. Wall is blackened and decorated with two pairs of plaster discs, one pair smooth and the other pair impressed with spirals in opposing directions. Two additional plaster discs appear on masonry walls that abut each side of the panel. Discs are approximately 20–30 cm in length.

surround, but only one appears to touch the Green Mask (Figure 9.22), a highly visible image that would not have been difficult to hit from the living floor below. Mud balls also surround but do not cover the head of a ducklike bird perched on the top of a headdress discussed above (Figures 9.10 and 9.14). Seemingly, it would have been more difficult to surround than hit this relatively small image.

The significance of throwing mud balls is not clear, and it may have been a diversion associated with making mortar to build masonry walls. The widespread occurrence of the practice, however, suggests that it was rooted in tradition and may have been more than a casual activity. Among historic Pueblos, mud is thrown as part of wedding ceremonies (Stephen 1969:260), and Leoleobac'tca katsina throws small balls of mud from the end of a stick, which are reported to bring long life to those who are hit (White 1932:80).

Summary and Conclusions

Rock art at the Green Mask site is abundant and highly visible. It represents three style horizons associated with the Archaic period of pre-A.D. 1 to 500 or later, the San Juan Basketmaker II–early Basketmaker III period of pre-A.D. 1 to 500–600, and the late Pueblo II–Pueblo III period of A.D. 1000–1050 to 1300. Most of the rock art is related to the Archaic and Basketmaker periods. It is possible that use of the Green Mask site by each successive group and culture was

influenced by earlier imagery, a point that is emphasized by the abundance of rock art and its ceremonial qualities.

The earliest style of rock art is associated with hunter-gatherers and possibly with Basketmaker cultures. It is represented by predominantly abstract and detailed polychrome paintings found on the higher levels of the rockshelter walls. Placement and manner of execution, along with subject matter, suggest that the rock art and site had some ceremonial significance.

Unlike the abstract art, more definitive San Juan Basketmaker style rock art at the Green Mask site occurs in close association with living floors utilized for burials and storage. The Basketmaker style features representational forms including anthropomorphs wearing headdresses. This imagery may have been related to shamanistic activities and to ancestral traditions based on the subject matter, artifact and ethnographic associations. Basketmaker style rock art is spatially organized. The concentration of imagery within certain wall areas of the site along with juxtaposition and superimposition of elements suggests that it was related to activities, including ceremonies, taking place nearby.

Rock art associated with the Pueblo II–Pueblo III period has limited representation at the Green Mask site. Of particular note are paintings enclosed within a possible kiva and numerous mud balls. Ceremonial significance for the combination rock and masonry wall art is indicated if the room served as a kiva, and geographic distribution and ethnographic associations suggest that mud balls may have had some ceremonial significance.

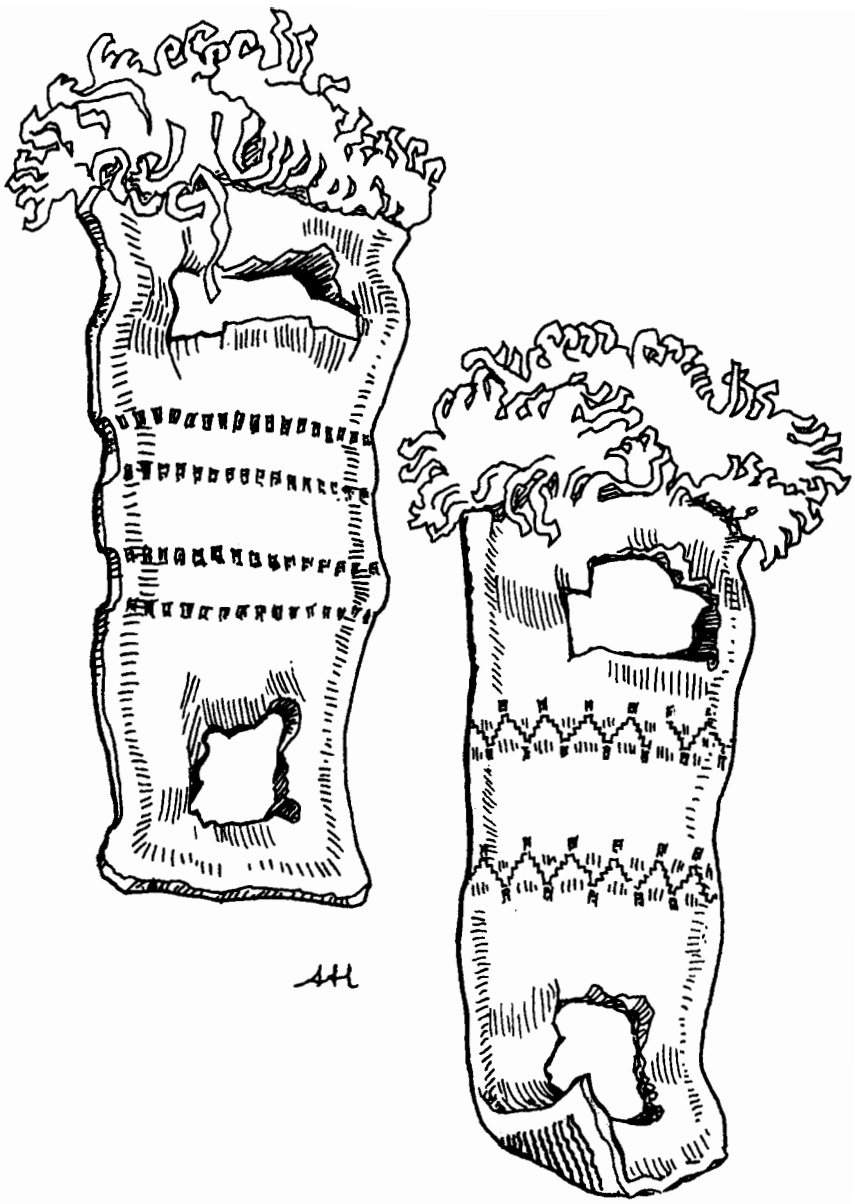


Figure 10.0 Drawing of worn sandals. (Drawing by Ann Hayes)

The Archaic to Formative Transition North of the Anasazi: A Basketmaker Perspective

Joel C. Janetski

Introduction

The transition from food gathering to food production is one of the most intriguing in prehistory. The details of this shift, the timing, the foodstuffs adopted, etc., vary from region to region as does the understanding of how the change occurred. In the Anasazi area of the American Southwest this transition occurred by the Basketmaker II period, which is relatively well described and dated (cf Berry 1982, Guernsey and Kidder 1921, Gumerman and Dean 1989, Kidder and Guernsey 1919, Matson 1991, Smiley 1985). North of the Anasazi on the northern Colorado Plateau and in the eastern Great Basin of Utah, the shift is less well understood. This paper summarizes new data from Utah for the transition period

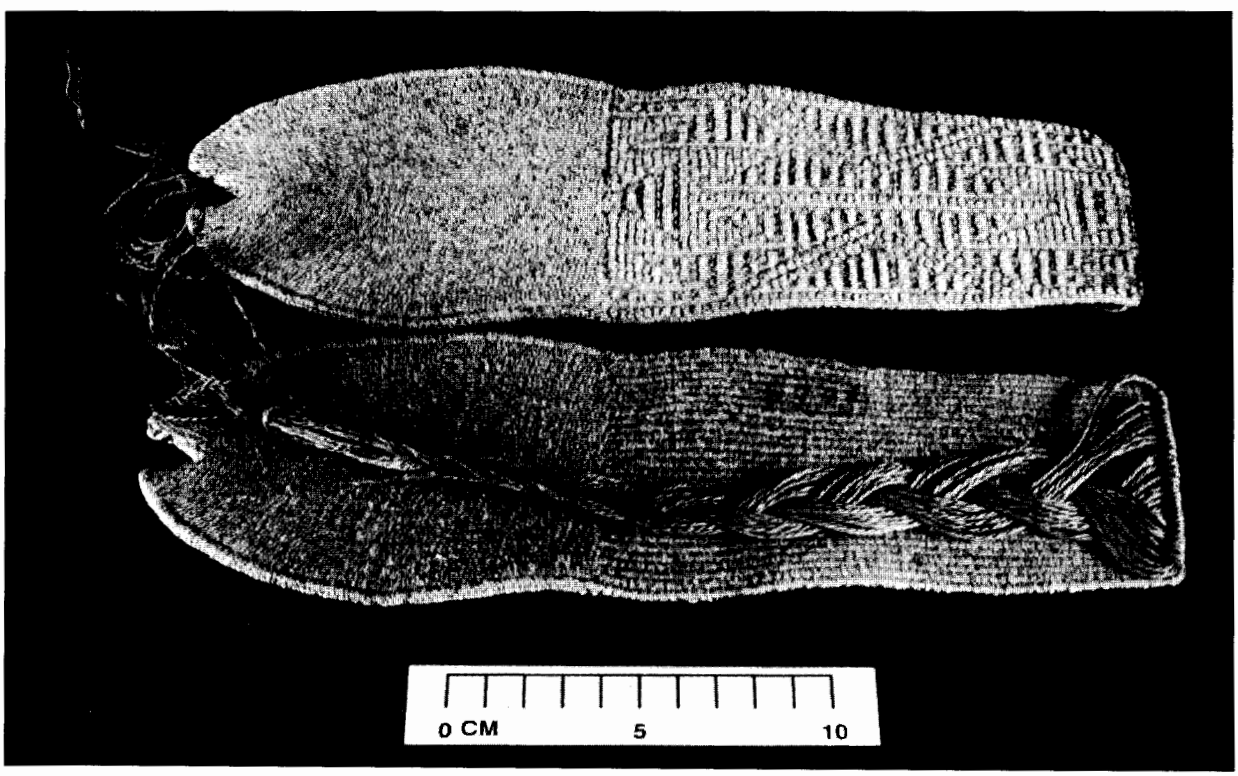


Figure 10.1 Unusual multiwarp sandals from a Basketmaker context in southeastern Utah. Museum of Peoples and Cultures accession no. 66.56.4. (Context described and illustrated in Montgomery 1894:228)

and argues for a gradual shift from hunting and gathering to farming. These data also suggest that a Basketmaker II–like strategy was present well to the north of the traditional Anasazi area and preceded the better known Formative (Fremont) adaptation in this region (see also Wilde and Newman 1989).

What Is Basketmaker? Early Use of the Term

The Basketmaker label is attributed, at least in concept, to Richard Wetherill based on his excavations in Grand Gulch and surrounding areas of southeastern Utah. It was here in the 1890s that the Wetherills and others, such as C.C. Graham and Charles McLoyd, uncovered irrefutable evidence of the presence of a people who lived in this region earlier than the well known Cliff Dwellers. These earlier people were referred to as "Basket People" by the Wetherills due to the common occurrence of baskets as burial goods rather than the pottery typical of later occupations (McNitt 1966:64). The stratigraphic relationship of Basketmaker and overlying Cliff Dwellers remains was well illustrated by Richard Wetherill in a letter to Hyde in December of 1883:

In the cave we are now working we have taken 28 skeletons and two more in sight and curious to tell, and a thing that will surprise the archaeologists of the country is the fact of our finding them at a depth of five and six feet in a cave in which there are cliff dwellings and we find the bodies under the ruins, three feet below any cliff dweller sign. They had feather cloth and baskets—no pottery. Six of the bodies had stone spear heads in them..." (McNitt 1966:65).

Wetherill described the material culture and physical characteristics of the "Basket Makers" as including a wide array of sophisticated textiles (such as multi-warp woven sandals [Figure 10.1] and woven bags), atlatls and atlatl darts (Figure 10.2) (McNitt 1966:64–65). It was also clear to the Wetherills that these people did not make pottery nor did they use the bow and arrow.

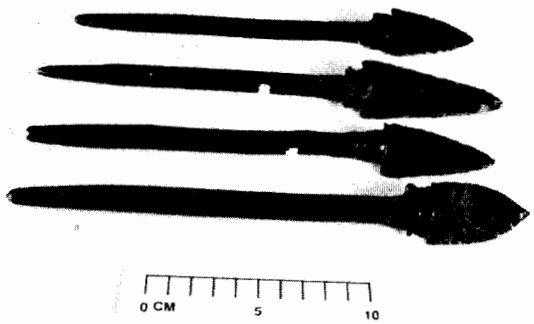


Figure 10.2 Atlatl dart foreshafts from Basketmaker contxts in southeastern Utah. Museum of Peoples and Cultures accession nos. 66.56.3.1, 66.56.5.1, 66.56.5.2, 66.55.3.2. (Probable context described in Montgomery 1894:228

And, unlike the Cliff Dwellers, the crania of the individuals recovered from the numerous Basketmaker burials were not deformed. Also occurring with the Basketmaker remains was corn (McNitt 1966:70).

Prudden (1897) and Pepper (1902) assisted in popularizing the Basketmaker term in their articles, "Elder Brother to the Cliff Dweller" and "The Ancient Basket Makers of Southeastern Utah" respectively. The archaeological findings of the Wetherills in Grand Gulch were later replicated by the research of A.V. Kidder and Samuel Guernsey between 1914 and 1923 in the Marsh Pass region of northeastern Arizona (Kidder and Guernsey 1919, Guernsey and Kidder 1921, Guernsey 1931). Nusbaum et al. (1922) likewise described findings at Cave Dupont near Kanab,Utah, as "Basket-maker." Similar materials had been observed by James Stevenson who worked in Canyon De Chelly in 1882 (Amsden 1949:41). Stevenson, although he suspected that the woven materials he uncovered, including finely woven sandals, were of great age, did not obtain the clear stratigraphic relationship documented by the Wetherills (see Matson 1991 for an excellent review of early Basketmaker research).

By the time A.V. Kidder used the Basketmaker term in his 1927 Pecos classification, it was in wide use. It was also becoming clear by then that the pre-Puebloan period was more complicated than initially thought. As a consequence, Basketmaker was subdivided into Basketmaker II and III (Kidder 1927). Basketmaker II peoples were defined as semi-nomadic, but who were settling down due to their pursuit of agriculture, and who "already made excellent coiled basketry, twined-woven bags, sandals, and used the atlatl; but whose dwellings were of a perishable nature... pottery-making was unknown" (Kidder 1927:489). During Basketmaker III "pottery was introduced, or possibly independently invented, houses of the pit type were perfected, and became grouped into villages, and the bow-and-arrow began to supplant the atlatl" (Kidder 1927:489).

The term Basketmaker (in the sense of Basketmaker II) was not only being used by scholars working in the Southwest, but also by those working throughout the Great Basin and Colorado Plateau north and west of the Four Corners area. In Utah, for example, Neil Judd (1926), working at both Fremont and Anasazi sites from the Great Salt Lake region south to the Kanab area in the 19 teens and '20s, attributes several sites to Basketmaker occupations. In the 1930s Julian Steward considered whether cultures represented by remains in caves around the Great Salt Lake were somehow related to the Basketmakers (Steward 1937). And, further to the west, L. L. Loud and Mark Harrington (1929) working at Lovelock Cave in western Nevada and Luther Cressman (Cressman et al. 1940), who excavated a number of caves in southeast Oregon, all considered relationships with the Basketmakers of the Four Corners.

Why did these researchers contemplate such connections? In part because they found baskets (some full of cached artifacts such as the well-known duck decoys from Lovelock), sandals, and atlatls, all of which, although clearly stylistically different, were reminiscent of Basketmaker material culture from the Four Corners region. Charles Amsden, for example, referred to the groups in northeastern Nevada as "cultural cousins" of the Basketmakers. According to Amsden (1949:98), these groups "lived the same kind of life and used the same major types of implements and equipment... (but) did everything just a bit differently." Most importantly they did not have corn.

What did the Basketmaker term mean to those doing archaeology in the West? Was it simply the presence of basketry and the absence of pottery? Why was there such an effort to relate finds from distant sites to the Four Corners prehistoric cultures? Likely the effort stemmed from two primary archaeological interests. First was the very important goal of placing cultural groups and sites in time. The Basketmaker clearly preceded the Cliff Dwellers or Puebloan groups in the Southwest and that chronological placement was important for archaeologists attempting to order cultural sequences in their regions, at least in a relative sense. In the absence of developed or available tree-ring sequences and prior to radiocarbon dating techniques, absolute dating of occupations was mostly a dream. But to be able to say that this or that occupation was before or contemporary to the Puebloan was an important temporal statement for those working in the Great Basin and Southwest during the early part of this century.

Secondly, archaeologists were interested in spatial and cultural relationships. Did the distinctive and elaborated farming societies of the Southwest have contact with and influence neighboring groups (especially of interest here are those to the north and west)? What was the extent of that influence and what is the evidence of it? Such questions stemmed from an interest in defining "Culture Areas" that have long been an important part of archaeology, although we have moved beyond such definitions as research goals. Relationships were usually established for roughly contemporary prehistoric groups by comparing similarities in material culture as well as other cultural traits such as subsistence.

Within the context of these concerns with chronology and cultural relationships, the Basketmaker emerged as an important point of reference, both temporally and materially. The large quantities of well-preserved artifacts recovered from the dry alcoves of the Four Corners region and the consistent stratigraphic relationship between them and the later Puebloans, set the Basketmaker rather firmly (albeit relatively) in time and cultural space by the early 1900s. To early twentieth century archaeologists Basketmaker meant sophisticated textiles, the use of the atlatl and dart points, the absence of pottery, and a particular time frame. And importantly for those working in the Southwest, the Basketmaker sites often contained evidence of horticulture in the form of corn.

Current Definitions of Basketmaker

More recent definitions of the Basketmaker have tended to emphasize strategies, especially subsistence and settlement, rather than material traits. As is well known, basketry manufacture and the use of the atlatl were widespread in North America for millennia, and pottery does not appear anywhere in the west until after the time of Christ. Consequently, these traits have not endured as being uniquely Basketmaker; rather it is the use of corn that has come to be particularly significant. I especially like Smiley's (1985:9) description of Basketmaker II as positioned "at the chronological base of food production on the Colorado Plateau."

Smiley (1985:10) goes on to define Basketmaker II as aceramic "peoples of the northern Southwest, organized in small groups, cultivating Mexican-derived domesticated plants, using dry caves and rockshelters as storage facilities and marking their stewardship of such facilities by placing their dead within them in comparatively rich funerary context." Gumerman and Dean (1989:113) elaborate on this latter point by noting that the richness of the burial goods (which includes exotic trade items such as turquoise and marine shell) in Basketmaker II burials suggests some degree of status differentiation.

The archaeological evidence for Basketmaker II presence in the Southwest has been well reviewed: most recently by Matson (1991), but also by Berry (1982), Gumerman and Dean (1989), and Smiley (1985). Material remains assignable to this period and adaptation stretch from the Moapa area of southern Nevada on the west to northwestern New Mexico on the east, and from southern Utah on the north to northern Chihuahua, Mexico on the south (cf. Smiley 1985:12).

Archaeological research at Basketmaker II sites has encountered considerable variability in architecture, both residential and storage. Habitation structures assigned to the Basketmaker II period range from rather deeply incised, large pit houses found at Lost City (Shutler 1961) and at Lolomai Phase sites on Black Mesa (Smiley 1985) to relatively small, shallow, basin-shaped houses exemplified by those reported from the Durango, Colorado, area by Morris and Burgh (1954), the Los Pinos phase sites at the Navaho Reservoir District (Eddy and Dickey 1961, Dittert et al. 1963) in northwestern New Mexico, and the early Hay Hollow sites in northeastern Arizona (see Berry 1982 for a good summary). All contain more or less centrally located firepits. House shapes tend to be circular to oval, and most include an entryway facing south to east (Berry 1982:38, Figure 4). Formal antechambers were present on the Navaho Reservoir District early houses (Eddy 1966). Superstructure techniques range from cribbed walls to wattle and daub to more opportunistic brush and pole structures. Cribbed houses are well documented at the Durango sites and the Navaho Reservoir District and perhaps at the Little Jug site on the north rim of the Grand Canyon (see Berry 1982: 54–56 for a summary). Early houses at Black Mesa include both surface structures and pit houses, with the former probably roofed with brush and pole technique and the

latter by cribbing (Smiley 1985:277). Residences occur in sheltered areas as well as in the open.

Storage features are also variable in size and shape. They include slab-lined cists (see especially Morris and Burgh 1954, Guernsey and Kidder 1921:Plate 9), jug-shaped cists (Morris and Burgh (1954), and bell-shaped cists (especially Smiley 1985:290–309) located both inside of and outside of residences. Wills (1992) reporting on the early farming sites in New Mexico makes an interesting argument for a shift from communal to household strategies based on the presence of exterior versus interior storage respectively.

Almost without exception (see Berry 1982:39–40, 55 for discussions of the dating of ceramics at the Hay Hollow and Little Jug sites), the Basketmaker II occupations are aceramic and corn is present. Projectile points from sites in the classic areas south of the Colorado–Virgin rivers are atlatl points.

The temporal placement of the Basketmaker II strategy, especially the arrival of corn, has been much debated (see especially Berry 1982 and Smiley 1985). Berry (1982:90) suggests the Basketmaker II occupation spanned the period between 200 B.C. and about A.D. 350 with a 200 year hiatus between 50 B.C. and A.D. 200. Smiley's (1985:346, 386) Lolomai Phase on Black Mesa is well dated to between the first century B.C. and A.D. 400. Lipe (1970), Matson et al. (1988) and Matson and Lipe (1978) in their research on the Red Rock Plateau and Cedar Mesa regions just north of the San Juan River in southern Utah place Basketmaker II settlement there at about A.D. 200–300 (Lipe 1970:93) and A.D. 250 to 300 (Berry 1982:57) respectively. Gumerman and Dean (1989:110) date the Basketmaker II occupation for the Western Anasazi region generally between 560 B.C.and A.D. 600 while Matson (1991:123) suggests 500 B.C. to A.D. 400 as the period for Basketmaker II.

The Basketmaker as a Transitional Strategy

Interesting questions about the Basketmaker have revolved around the process or mechanics of the transition from the hunting and gathering lifeway of the preceding Archaic to one of food production. Most fundamentally, the question has been: Does the onset of the Basketmaker strategy represent a migration of people who brought with them new ideas, including farming? Or were they literal descendants of the indigenous hunting and gathering folks who adopted traits from contacts with others? Presumably "others" here were those to the south (Mexico) as that is where the tropical cultigens (corn, beans, squash) used by the Anasazi were first developed. This concern with how the process occurred was a primary question being asked early on by Guernsey and Kidder (1921:115) (although they were clearly more interested in the relationship between the Basketmaker and the Cliff-Dwellers). Kidder and Guernsey reached no conclusions, but they did set up certain expectations which, if met, would argue for either a migration or a development in place. In essence they maintained quite logically that: if the transition consisted of a migration we should find a rapid replacement of cultures (read material remains) in the archaeological record; if change were due to an in situ development, we should see a more gradual transition in that record.

This question about the process of the beginnings of food production is as current today as it was in the 1920s. Matson (1991) and Matson and Chisolm (1991) have recently summarized the pros and cons of this argument for the Southwest. The traditional view as presented by Irwin-Williams (1973), Plog (1979), and Cordell (1984) suggest a gradual development while Berry (1982) and Berry and Berry (1986), Smiley (1985), and Matson (1991) argue for a migration of horticulturalists into the Southwest. Berry (1982), for example, maintains that changes in the Anasazi developmental sequence as represented by the Pecos Classification were

not gradual, but were, in fact, abrupt shifts resulting from dramatic episodes of drought and subsequent out-migrations to more environmentally favored areas followed by a re-settlement of the drought-stricken region after climatic amelioration. Likewise, Berry (1982:31–32) characterizes the diffusion of corn as rapid, probably being brought in by a migrant group (see Dean 1985 for a critique of Berry's thesis). Similarly, Smiley (1985) suggests that the initial settlement of the Black Mesa region was the result of settlement of peoples already practicing a horticultural strategy.

Archaic to Formative Transition North of the Anasazi

Comparable questions have been asked of the transition to the Formative (Fremont) in the northern Colorado Plateau and eastern Great Basin regions of Utah. That is, was the transition from the Archaic to the Fremont a result of a migration of peoples from the Anasazi area or elsewhere or a gradual diffusion of ideas? The relationship between the Fremont and the Anasazi clearly varied from area to area (cf. Jennings 1978, Madsen 1989), but most agree that Fremont horticulture, architecture, and ceramics were influenced to some degree by Anasazi patterns. Because of these similarities, Noel Morss, who first defined the Fremont in 1931 based on his work along the Fremont River in south central Utah, stated that "the influences which molded the Fremont Culture appear to have been Southwestern" (Morss 1931:77). Further, he felt that the Southwestern or Anasazi influence was greatest during the Basketmaker III period or about A.D. 500–700 (Morss 1931). Morss stops short of stating that the Fremont were Anasazi people who migrated northward, however.

James Gunnerson (1969:195), on the other hand, postulates an expansion or migration of Virgin Anasazi northward around A.D. 900 and suggests that it was these migrants that became the Fremont. Gunnerson makes his case based on examples of corn recovered by the Claflin–Emerson Expedition in the 1920s (the same expedition that Noel Morss was on, by the way). Specifically, he argues that the introduction of eight-rowed corn that hybridized with existing varieties to produce strains that were more productive, easier to mill, and which grew in colder climes allowed the expansion of horticultural peoples (the Fremont) into more northern latitudes (Gunnerson 1969:180).

Jennings (1956, 1978), however, has argued for an indigenous development of the Fremont culture resulting from a series of "pulsations" of ideas and traits from the south "perhaps as early as A.D. 500" (Jennings 1978:155). He cites the diminishing intensity of obvious Anasazi influence as one moves from south to north across the Fremont area as support for his conclusions.

Consistent in some ways with Gunnerson's ideas are those of Madsen and Berry (1975) who, based on a review of the current archaeological evidence for the northeastern Great Basin in the mid-1970s, argue against Jennings' in situ model by suggesting that the transition from the Archaic to the Formative was best explained by a migration of peoples. What was the basis of their argument? First, they pointed out that there were no radiocarbon dates for the transitional period (1500 B.C. to A.D. 500) from archaeological sites in the northeastern Great Basin. Second, archaeological assemblages representing the Archaic period consisted of atlatl points, slab milling stones, basketry, the remains of wild plants and animals, and other evidences of a rather mobile hunting and gathering economy. These material remains were, without exception, from deep, stratified cave or rockshelter deposits (Danger Cave, Hogup Cave, Sudden Shelter, and Cowboy Cave) (see Jennings 1978, Aikens and Madsen 1986 for reviews). No structures were found in these sheltered sites. Dates of these assemblages spanned much of the Holocene–10,000 plus to about 3000 years ago. Finally, it was clear that these Archaic cave assemblages were in decided contrast with those from open, structural Fremont sites, e.g., Median Village,

Nephi Mounds, Evans Mound, Paragonah, etc. At these sites were found the remains of fairly energy-expensive architecture (both residential and storage) suggesting reduced mobility, arrow points, troughed milling stones, basketry distinct from the Archaic styles, a well-developed ceramic tradition that included a sophisticated figurine style, and domesticated plants (especially corn) along with the remains of wild plants and animals (see Marwitt 1986). Dates for these structural, Formative sites clustered in the A.D. 900 to 1100 range, with the earliest around A.D. 500.

Obviously a dramatic change had occurred. Madsen and Berry (1975:404) explained the absence of dates and the massive cultural shift by suggesting that people were absent from the northeastern Great Basin for 1500 to 2000 years. A cultural hiatus had occurred. The hiatus ended with a fairly rapid migration of Fremont folks into the region, people with new ideas, a new tool kit, and a different livelihood. The shift was a major one with few precedents. The case was well presented and convincing.

It is important to point out that the geographical focus of Madsen and Berry's argument was narrow: their data came from sites in the central and northeastern Great Basin. And they noted a tendency for the hiatus to be shorter at Colorado Plateau sites to the east. This tendency leads them to suggest that the Fremont may have originated in the eastern Utah–western Colorado area. They also acknowledge that the hiatus may be a function of sampling bias (Madsen and Berry 1975:398). They are firm, however, in their view that the shift to the Formative was due to

Table 10.1 Pertinent raw and calibrated radiocarbon dates available from the sites discussed in the text.

Site	Lab Number	Radiocarbon Age	Calibrated 2 Sigma range
Rock Canyon Shelter (Janetski and Wilde 1989)			
Stratum IV	Beta-14603	2020 ± 60 B.P.	105 B.C. – A.D. 28
Stratum IV	Beta-14604	2030 ± 70 B.P.	204 B.C. – A.D. 119
Hog Canyon Dune (Schleisman and Nielson 1899)			
Hearth 1	Beta-8781	1680 ± 130	A.D. 60 – 640
Burial 2	Beta-8782	2530 ± 110	910 – 390 B.C.
Sunny Beaches (Geib and Bungart 1989)			
Hearth 1	Beta-16272	1800 ± 100 B.P.	50 B.C. – A.D. 250
Hearth 2	Beta-21235	2260 ± 230 B.P.	770 B.C. – A.D. 150
North Richfield (Talbot and Richens n.d.)			
Pit	Beta-16678	2480 ± 70	790 – 410 B.C.
Beam?	Beta-16677	3370 ± 80	1935 – 1440 B.C.
Beam?	Beta-24435	3020 ± 100	1545 – 910 B.C.
Icicle Bench (Janetski et al. 1985)			
Str.2/Beam	Beta-8791	1610 ± 50	A.D. 240 – 585
Str.2/Beam	Beta-8793	1830 ± 60	A.D. 20 – 255
Elsinore Burial Corn (Wilde and Newman 1989)			
Charcoal	Beta-13412	2100 ± 80	395 B.C. – A.D. 185
Charcoal	Beta-13415	2050 ± 80	385 B.C. – A.D. 210
Corn	Beta-13414	2140 ± 100	405 B.C. – A.D. 30

migration, not a development in place. This view was refined by Berry and Berry (1976) based on survey work and a review of the data from the Uinta Basin of northeastern Utah and the Colorado Plateau. In this paper Berry and Berry (1976:33) argue for a cultural hiatus beginning about 3000 B.P. and ending with a "rapid spread of Basketmaker II technology" into the area between 2000 and 1500 years ago. A similar argument is made later that also includes the southern Colorado Plateau (Berry and Berry 1986)

In the 15 years since Madsen and Berry presented their hypothesis much archaeology has been done. What I intend here is to bring information about the transition up to date, and, after reviewing the pertinent data, again pose the questions: Does the evidence still support the migration—expansion hypothesis suggested by Madsen and Berry (1975) and Berry and Berry (1976, 1986) for the Fremont area? Was there a break in the cultural occupation of this area? How does the evidence fit the criteria for migration vs. in situ development presented by Kidder and Guernsey?

Current Archaeological Evidence for the Beginnings of the Formative

To answer the above questions, I review below data from several sites in central Utah containing archaeological evidences of the onset of the Formative and dating to the period from 1000 B.C. to A.D. 500. Specifically, I review the timing for the arrival of material remains most often associated with Formative occupation in Utah north of the Anasazi: the presence of pithouses as well as surface habitation and storage architecture, the use of corn, bow and arrow technology, and the production of ceramics (cf. Jennings 1978). This discussion will follow a rough geographical order by describing sites located in the southern Utah and northern Arizona first and then those in central Utah (see Figure 10.3 for site locations).

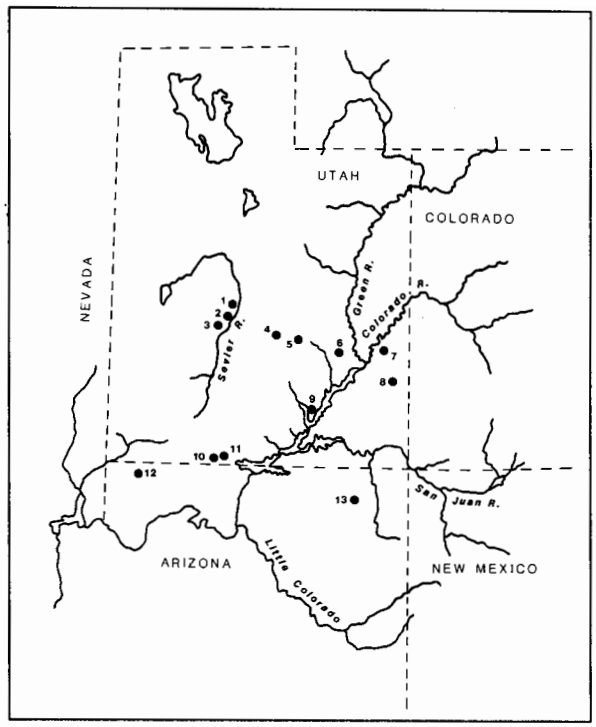


Figure 10.3 Archaeological sites or regions mentioned in the text: 1) North Richfield sites; 2) Elsinore Burial; 3) Icicle Bench; 4) Aspen Shelter; 5) Muddy Creek; 6) Cowboy Cave; 7) Orchard Pithouse; 8) Sandy Ridge; 9) Sunny Beaches; 10) Cave Dupont; 11) Hog Canyon Dune; 12) Rock Canyon Shelter; 13(Black Mesa sites.

Rock Canyon Shelter

Located in northeastern Arizona on the Uinkaret Plateau just east of the Hurricane Cliffs, Rock Canyon Shelter was tested by the Office of Public Archaeology at Brigham Young University (OPA/BYU) in cooperation with the Bureau of Land Management, Arizona Strip District in 1986 (Janetski and Wilde 1989). The site is a small (25 m wide by 7.5 m deep), dry, south-facing rock shelter on the north side of Short Creek just below its confluence with Clayhole Wash. The site was badly vandalized. The testing exercise was pursued primarily as a salvage effort.

The earliest cultural deposits in Rock Canyon shelter are dated to about 2700 B.C. (see Table 10.1) and include Archaic style projectile points (San Raphael and Elko series). Corn occurrence begins between 104 B.C. and A.D. 119 (calibrated 2 sigma range) and continues into the upper levels. Ceramics are restricted to the upper levels dated to A.D. 668–794 (calibrated 1 sigma range). No structural features were encountered; however, the presence of numerous sandstone slabs on the vandals' backdirt piles suggested that slab-lined pits or cists may have been present.

Hog Canyon Dune

Hog Canyon Dune (42Ka 2574) is located at the junction of Hog and Kanab creeks about two miles north of Kanab, Utah. The site was excavated by OPA/BYU in 1983 in cooperation with the Utah Department of Transportation (Schliesman and Nielson 1988). The site consisted of two areas of defined use: a circular, slab-lined pit structure and associated use-area dated to about A.D. 500 and an activity area located about 15 m to the west and stratigraphically beneath the structure. Associated with the activity area, called Occupation Level A, were two burials, one in a slab-lined cist, and four circular, basin-shaped hearths, three of which were rock-lined. All of the features are considered "relatively" stratigraphically contemporaneous (Schliesman and Nielson 1988:42), although Hearth 1 is thought to be stratigraphically above Burial 2. This is reflected in the raw dates from Hearth 1 (1680 ± 130 B.P.) and Burial 2 (2530 ± 110 B.P.), which are considerably separated in time (see Table 10.1 calibrated ranges for these dates)

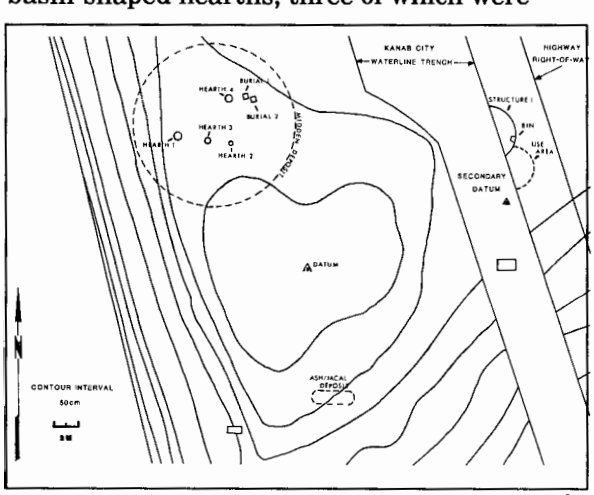


Figure 10.4 Plan view of excavations at Hog Canyon Dune (42Ka2574)(from Schleisman and Neilson 1985).

Of particular interest here is the discovery of five charred corn kernels associated with features in Occupation Level A: two were found in Burial 1, one with Burial 2, and two with Hearth 4. Zea pollen was also found on the surface of the pit structure and use area adjacent to the pit structure (Schleisman and Nielson 1988:95).

Two North Creek Gray sherds were found "near" Hearth 1 in Occupation Level A, but are considered intrusive (Schleisman and Nielson 1988:53). Given this explanation for the ceramics, the possibility exists that the corn kernels were intrusive as well, although the fact that they were found in three spatially separated features argues against this. The authors consider the possibility that the early dates from Occupation Level A in both Burial 2 and Hearth 1 may be a result of dating old wood charcoal, but tend to accept them as valid (Schleisman and Nielson 1988:119).

Sunny Beaches

Geib and Bungart (1989) of Northern Arizona University worked at this site in Canyonlands just north of the Escalante–Colorado river confluence in 1986. Sunny Beaches (42Ka 2751) was a limited activity site containing several basin-shaped hearths and radiocarbon dated to about A.D. 100 (Table 10.1). Associated with the hearths were fragments of nine small projectile points including two nearly complete, three distal fragments and proximal or basal portions (Geib and Bungart 1989:37). The more complete points and basal portions were classified by the excavators as Rose Springs

Corner-notched arrow points. The site was aceramic and no corn or architectural features were uncovered.

Sandy Ridge

The Sandy Ridge site (42Sa 18500) is located in Dry Valley of southeastern Utah south of Moab at an elevation of about 1870 m (6100 feet). The site consists of a single pit house sitting on a rather narrow, south extending finger ridge. It was excavated by OPA/BYU with the cooperation of the BLM in 1988 (Richens and Talbot 1989).

The pit house is a fairly large (about 5 m in diameter), roughly circular basin with a central hearth and a number of floor pits. The hearth is slab-lined along part of its perimeter. One of the pits is bell shaped with an oval-shaped, flat bottom measuring 55 cm by 80 cm. The bottom of the pit was 90 cm below the floor of the house. The pit was located inside the north edge of the house. Although beam fragments were present, no postholes were identified. The beams were dated to about A.D. 200 (Table 10.1). Artifacts in floor contact included four untyped side-notched arrow points and miscellaneous chipped stone tools and groundstone fragments. No ceramics were found.

Orchard Pithouse

Orchard Pithouse is located in the city of Moab and was discovered during street and sidewalk construction. The excavations were carried out on a volunteer basis by the Moab Chapter of the Utah Statewide Archaeological Society under the direction of Bruce Louthan.

In a preliminary report Louthan (1990) describes the pit house as a circular, basin-shaped feature measuring about 4 m in diameter and as much as 90 cm deep. Interior features include two central firepits, smaller storage pits and an enigmatic, elongated trench (Louthan 1990:24). Three definite and two possible postholes 10 to 15 cm in diameter were found just outside and along the edge of the structure suggesting a fairly massive superstructure constructed using large leaner beams. The fill of the house contained chunks of burned adobe probably associated with the roof construction. Associated features include two hearths, one in the fill of the structure and the other adjacent to it.

Radiocarbon dates from the pit house "cluster around 300 B.C." (Louthan 1990:26). The hearth outside the structure is dated to about A.D. 240, while the hearth in the pit house fill dates to A.D. 510. Artifacts associated with the use of the structure includes two Elko Corner-notched projectile points, one found in floor contact and the other in the fill. Although ceramics were present on the surface of the site, none were found in the pit house. Floral samples have not yet been examined.

Muddy Creek (42Em 1887)

The Muddy Creek site is located east of the Old Woman Plateau and in the vicinity of a number of well known archaeological sites dating to both the Fremont (Snake Rock [Aikens 1967], Old Woman and Poplar Knob [Taylor 1957]) and Archaic (Sudden Shelter [Jennings et al. 1980]) periods in central Utah (Figure 10.3). The site is one of several excavated by the University of Pittsburgh in the mid to late 1980s (Gundy et al. 1990) in advance of I-70 construction. The data from the sites excavated on this project have not yet been fully analyzed or reported. A substantial Fremont occupation was located immediately to the south (across the highway) of the Muddy Creek site but was not tested as it was outside the right-of-way.

Site 42Em 1887 sits on the Muddy Creek flood plain just east of the juncture of Ivie and Muddy creeks at about 1675 m (5500 feet) in elevation. At least six pit structures were found here with dates ranging from about A.D. 200 to A.D. 550 (Gundy et al. 1990). The houses were all basin-shaped and contained roughly centrally-located firepits and various small subfloor pits. House shapes were

small subfloor pits. House shapes were primarily circular to oval in plan with one rather squarish. Five of the houses measured between 3 m to 4.2 m in diameter while one measured 5 m by 7 m in size. Postholes were present both inside as well as outside the structures. Associated with but outside the houses were three well-defined hearths and six large (estimated up to 1 m deep and 1 m in floor diameter), bell-shaped pits with flat bottoms. Additional features were likely present, but time and money constraints did not allow further excavation. Artifacts in association with the structures include both Rosegate and Elko style projectile points. Ceramics were very scarce at the site and none were found in direct contact with feature floors.

Corn was found in the fill of at least one of the bell-shaped pits dated to about A.D. 300. It is not known whether the excavators were able to demonstrate that corn was stored in the pits or whether it simply was part of the post-occupational fill, nor is it known whether the date was on wood or the corn.

The Muddy Creek Site is important in the context of this study of Archaic–Formative transitions. It appears to have been a small community of people firmly committed to corn use and storage at a time prior to the manufacture of ceramics. The remains here are consistent with those from the Elsinore Burial and the approximately contemporary Icicle Bench occupation near Richfield (see below).

Aspen Shelter

Aspen Shelter (42Sv 1365) is located at 2498 m (8200 feet) in an aspen–spruce context on the eastern edge of the Old Woman Plateau about 8 km directly north of I-70. It was first tested by the USFS in 1979 (DeBloois 1983). Extensive excavations were carried out here by OPA/BYU in cooperation with the

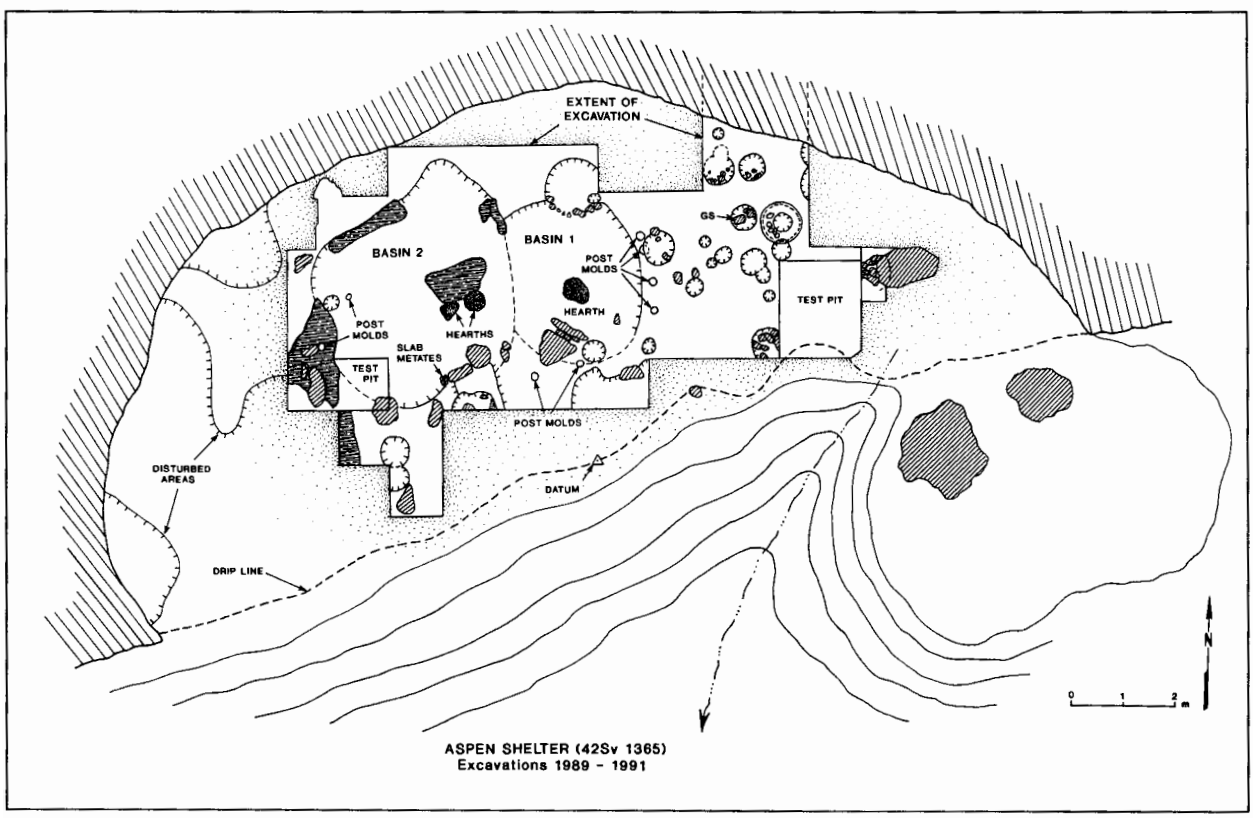


Figure 10.5 Plan view of excavations at Aspen Shelter (42Sv1365).

Forest Service during the summers of 1989 and 1990 (Janetski and Wilde 1990).

The shelter is smallish, perhaps 17 m wide by 7 m front to back. Deposits contained evidence of an intensive mid to late Archaic occupation, dated to as early as 4500 B.P., followed by much lighter and more sporadic use of the site through the Fremont period. The Archaic levels contained abundant animal bone (especially deer but also some rabbit and other small mammals and birds), mostly Gypsum and Elko style projectile points, grinding implements and assorted stone and bone tools. Subsequent levels contained animal bone (in much smaller quantities), Rosegate and Bull Creek arrow points, and plain and painted gray ware ceramics.

At the lowest level of the site, associated with a semi-compacted use surface, were numerous features including both basin- and jug-shaped pits, probably used for roasting and storage respectively, and two architectural features perhaps best described as living basins. The architectural features were roughly circular, basin-shaped, and located essentially side by side in the central portion of the shelter (Figure 10.5). Each was deliberately constructed using middeny sand to cover the underlying sterile sediments and jumbled sandstone rocks. Each also contained a hearth feature located somewhat south of center and about a meter in front of slab reflector stones that were positioned between the hearth and the front of the shelter. Along the eastern edge of Basin 1 were four probable post holes. Unfortunately, the stratigraphic relationship between Basin 1 and Basin 2 was muddied by both the earlier USFS testing effort and extensive looting activity at the site. There is no clear evidence that either feature overlapped the other. The fact that Basin 1 was filled in with rocks may argue that it predates Basin 2. Both features, however, underlay intact deposits containing Gypsum style projectile points suggesting they were roughly contemporaneous.

Basin 1 contained no floor-contact finished tools, although pressure flakes were abundant in the sandy floor. Basin 2, on the other hand, contained a number of stone and bone tools primarily located in a shelf-storage area toward the rear of the feature. Included were two floor (shelf) contact Gypsum points, several utilized flakes, a bone awl, and ground stone (metate) fragments. Leaning against the upright slab reflector stone in Basin 2 were two slab metates.

The data recovered from Aspen Shelter suggests a intensive residential use by hunter-gatherers. Season of use was probably primarily during the fall as evidenced by the common occurrence of deer cranial fragments with antlers attached. The two structurally similar architectural features offer some insights into Archaic house forms.

North Richfield

In 1985 OPA/BYU excavated a series of sites (42Sv2113, 42Sv 2114 and 42Sv 2124) on the north edge of the town of Richfield, Utah, prior to I-70 construction (Talbot and Richens n.d.). Several Fremont age features (houses and hearths) were found, as well as an array of Late Archaic hearths and use surfaces stratigraphically below, although spatially separated from, the Fremont material. Included in the Late Archaic features at 42Sv 2124 was a round, basin-shaped pit structure measuring 3.8 m in diameter found ca 1.8–2 m below the current ground surface (Figure 10.6). Associated with the use-compacted floor of this structure were a fairly large (45 cm diameter) basin-shaped hearth, several sub-floor pits, and two probable post holes. Also on the floor were a number of flakes, a mano fragment and an Elko style projectile point. Overlying the floor were burned beam fragments and twigs suggesting the presence of a covering superstructure. Radiocarbon dates from the burned beams date to between 1000 and nearly 2000 B.C. while a sample from one of the subfloor pits suggest a use at round 600 B.C. (see Table 10.1). This latter date is

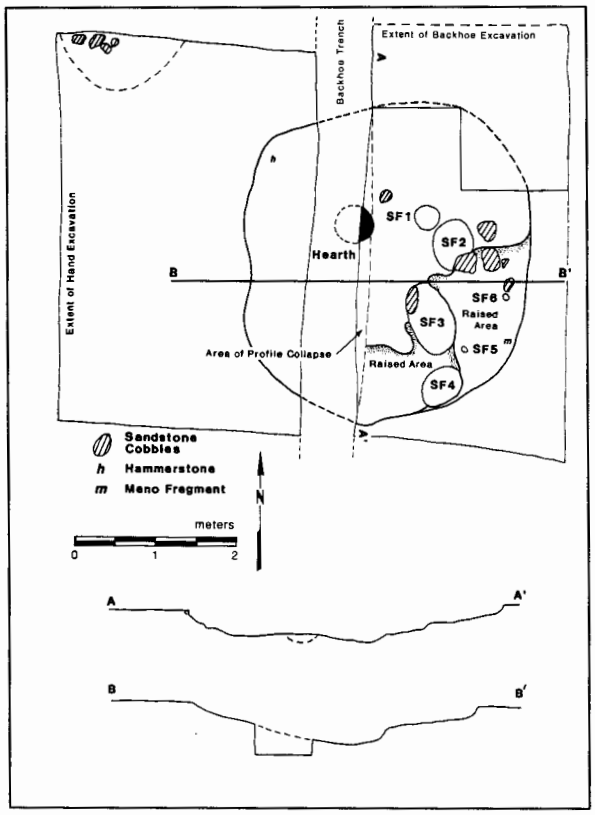


Figure 10.6 Plan view of Archaic house depression at North Richfield (42Sv2124)(from Talbot and Richens 1990).

contemporary with several dates from the adjacent sites and is the most acceptable date for the use of the house.

Several hundred meters to the northwest at 42Sv 2113, another heavily used area containing a series of hearths and use areas was excavated. A possible wickiup-like structure was found here with a compacted use-surface, associated hearth and heavy ash concentration as well as Elko points, all essentially contemporary with the 42Sv 2124 structure described above. The ash and compacted surface extended over an irregular area measuring roughly four meters in diameter. The absence of post holes and any discrete "edges" to the feature makes this find somewhat enigmatic. Other hearths and use areas from these two sites were dated as early as 2000 B.C., although the majority of the dates fall at about 600 B.C. as noted above.

The data from the North Richfield Archaic sites place them within an Archaic hunting and gathering pattern operating several centuries before the time of Christ. No corn or other Formative foreshadowings (other than the house itself) were found.

Icicle Bench

Icicle Bench (42Sv 1372) sits on the east side of Clear Creek at the mouth of Clear Creek Canyon about 24 km (15 miles) south of the town of Richfield, Utah. The site was excavated by OPA/BYU in 1983–84 prior to I-70 construction in the canyon (Janetski et al. 1985). Cultural debris on the surface of the site prior to excavation was limited to Fremont style ceramics and scattered lithic detritus. Excavations uncovered five pit structures, three circular and two sub-rectangular, and a number of use areas and hearths all demonstrating use of the area for well over a millennium. The dates and stratigraphy at the site suggest two periods of use: an early

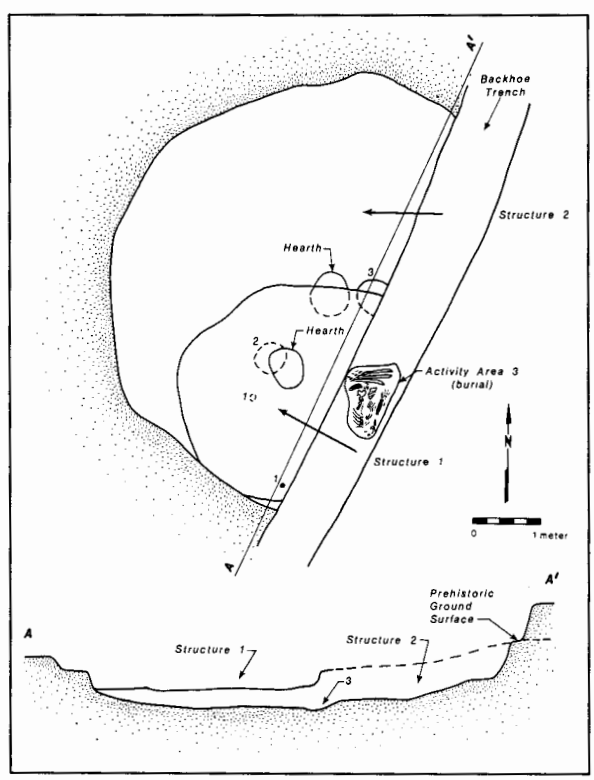


Figure 10.7 Plan view of aceramic pit house at Icicle Bench (42Sv1372).

occupation beginning perhaps as early as 400 B.C. and continuing sporadically until about A.D. 500, and a later, rather typical Fremont presence between A.D. 950 and the late 1200s.

Of particular interest here is Structure 2, which was a fairly shallow, circular (5.8 m diameter), basin-shaped pithouse. It contained a centrally-located, basin-shaped hearth and a number of floor-contact, small-diameter beams radiating outward from the center. No postholes were found (Figure 10.7). Beam samples were radiocarbon dated to about 250 A.D. (see Table 10.1 for dates on this structure). Charcoal samples were taken from structural beams. No diagnostic artifacts were found on the pithouse floor. Structure 2 lay below Structure 3, also a circular pithouse, which was radiocarbon dated to about 950 A.D. Several hearths and use areas at the site were also dated to this early period of use. All early levels including Structure 2 were aceramic. Macrobotanical samples have been examined from Structure 2 (Young 1990). Only wild plant remains were identified.

The Icicle Bench data argue for a sporadic, pre-Formative presence at this location from about 600 B.C. until A.D. 500 (Janetski et al. 1985:47). The presence of the pithouse suggests a more intensive use during the second and third century A.D.

Elsinore Burial

The Elsinore Burial yielded what are currently the earliest reported dates for corn in the central part of the state (Wilde et al. 1986, Wilde and Newman 1989). The site, located just south of Richfield, Utah, was excavated by OPA/BYU in 1985 as part of the I-70 construction. The site was discovered when a bulldozer exposed a large bell-shaped pit containing human remains and corn cobs sealed by over 2 m of fill. The flat to slightly concave pit floor, which was partially destroyed by the construction, appears to have been oval in plan measuring 1.7 m at its greatest extent and about .9 m deep. Corn from the pit was dated to ca. 175 B.C. or essentially equivalent to the earliest dates from Cowboy Cave (Wilde and Newman 1989) (Table 10.1). The other dates, which are contemporary with the corn date, are on charcoal from the burial pit fill. One chert biface was found in the pit. No other features were observed in the extensive exposed sediments.

Discussion

What does this review of the evidences of the onset of the Formative strategy tell us about how it happened? To facilitate answering this question the following discussion considers each of the essential ingredients of the Formative identified at the onset of the site descriptions: the presence of domesticated plants (primarily corn), pithouse architecture and storage facilities, the bow and arrow, and ceramics. The focus here, given the way I have asked the question, is timing, although form, especially that of houses is also important.

Early Houses in Utah

It goes without saying that our understanding of house construction and many other aspects of the pre-Formative pattern is very thin. Little excavation has been done at open Archaic sites; consequently, little is known about such things as houses or residential patterns generally. However, the evidence presented above demonstrates that houses were being constructed in Utah north of the Anasazi during the Archaic period well before the time of Christ. Four Archaic houses have been documented: two at Aspen Shelter dating to about 2000 B.C., one at North Richfield dating to about 500 B.C. and one at Moab dating to about the time of Christ. These earlier houses tend to be shallow, basin-shaped, oval to circular structures containing central, unprepared hearths and roofs constructed using leaners placed over the house depression rather than within it. House size seems to be quite small, as all are under 4 m in diameter. The overall impression of the Aspen Shelter and North Richfield houses, is one of expediency. The slim evidence for

superstructure at Aspen Shelter suggests that small poles were used for roofing or a windbreak. Orchard Pithouse, on the other hand, which dates somewhat later, is deeper and required considerable effort to construct, as suggested by the evidence for rather large leaner beams and the probable use of adobe for the superstructure. The Sandy Ridge house is contemporary with houses on Cedar Mesa (Pittman and Veres sites) and in Glen Canyon (Lone Tree Dune) (all of these are described in Berry 1982:57), and is similar in shape and hearth placement, but it lacks the formal entryway evident in all three of these latter houses.

The later, but still aceramic, houses from central Utah dating to just after the time of Christ tend to resemble the earlier Archaic houses in form and construction. The several houses at Muddy Creek and Icicle Bench are all circular to oval in plan, fairly shallow, and basin-shaped. The Icicle Bench house was apparently built with poles and brush, while those at Muddy Creek may have been roofed using both leaners and central supports. One structure at Muddy Creek and the house at Icicle Bench, however, are considerably larger than the other Archaic houses identified to date. None of the structures discussed here contained any evidence of entry ways.

The dates from these later aceramic structures suggest contemporaneity with Basketmaker II structures in the Anasazi region to the south which they also resemble in some ways. In both areas houses include a style that is generally circular to oval in plan and basin-shaped in profile, and tended to be quite shallow. However, many of those from the Basketmaker area have entryways and antechambers (cf. Berry 1982:38) and those from the Black Mesa area especially are deep, with many measuring well over a meter (Smiley 1985:282). Superstructure in Basketmaker houses is variable, but a number appear to be cribbed, a style not found in the central Utah aceramic houses discussed here.

Continuity in structure style north of the Anasazi is evident when comparing the aceramic pithouses from central Utah to early Fremont house forms. Early Fremont pithouses, like the earlier forms, tend to be relatively shallow and circular. Later houses are deeper, rectangular, and more likely to have adobe or stone-lined walls (Aikens 1967, Berry 1974, Dodd 1982, see especially the numerous pithouses at Five Finger Ridge dated to A.D. 1000 and later [Janetski et al. 1985]). Surface, adobe-walled residences are also known from Fremont sites, but are rare and generally occur later in the Fremont sequence (cf. Metcalf and Heath 1990). Like the Archaic houses, Fremont hearths are central but are usually rimmed with clay, although this is less common early (see Dodd 1982:38; Lohse 1980:45). Posthole patterns are variable in Fremont structures, but an interior quadralateral pattern is more common that exterior posts (Lohse 1980:45).

The use of bell-shaped pits at the Elsinore Burial, Sandy Ridge, and especially Muddy Creek sites is particularly interesting. Prior to the excavation of Elsinore Burial and Muddy Creek sites, such pits were unknown for Utah north of the Anasazi. This storage strategy may be a concomitant of horticulture, as they have not been documented at Archaic sites. These storage facilities are similar to those found in Basketmaker II contexts, especially in northeastern Arizona and northwestern and western New Mexico. At Black Mesa such features are common, with sites containing from one to 20 bell-shaped pits, many of which had fire-hardened walls and stone slab covers (Smiley 1985:290–293). Most of these appear to have been located outside of the houses, a pattern also apparent at Muddy Creek and the Elsinore Burial. Bell-shaped pits are also common at Basketmaker II sites in New Mexico; see Wills (1992) for an interesting discussion of the implications of storage cist placement). No evidence for pit wall treatment was present at the Elsinore burial (James D. Wilde, personal communication 1990). It isn't known as yet whether the pits at the Muddy Creek site were so treated as these finds have yet to be reported in detail.

Although similarity in house styles appears evident, there is little continuity between late Archaic storage facilities and those of the Fremont. Fremont storage facilities (usually referred to as granaries) tend to be above ground and are found both adjacent to houses and in more remote areas away from habitations. Bell-shaped pits are rare (Lohse 1980:46). Granaries found in the eastern Great Basin area adjacent to habitation tend to be low, adobe-walled structures containing one or more small rooms (an exception may be the straight-walled, roofed subterranean "cache pit" found at Woodard Mound, a fairly late Utah Valley Fremont site [Gilsen 1968:63; Richens 1983]). Remote granaries are located high above drainage bottoms in sheltered cliff locations and are constructed of wattle and daub with some stone. On the Colorado Plateau to the east, remote granaries made of wet laid masonry are considerably more common than granaries adjacent to houses (cf. Marwitt 1986).

The apparent discontinuity between Archaic and Fremont storage strategies may be due to a relatively late development of both remote and house-adjacent Fremont storage facilities. Dates from Fremont granaries are scarce, consequently, it is difficult to assess the timing of the use of such storage facilities (however, see Janetski et al. 1985 for dates in the A.D. 700 range for remote granaries in Clear Creek Canyon). It should be noted that a shift from subterranean to surface storage and the eventual incorporation of remote storage also occurred in the Anasazi area during the late Basketmaker III period (A.D. 500 to about A.D. 700) (Lipe 1978:369; Morris 1980).

Settlement location data for transitional sites identified thus far suggest that benches adjacent to flood plains cut by perennial streams were preferred for residences and storage. All of the open late Archaic houses (with the exception of the Sandy Ridge house) discussed here are in that setting. It is significant that in several cases (Muddy Creek, Icicle Bench, North Richfield, Hog Canyon) Fremont occupations either immediately overlay or were near earlier remains. Apparently, such areas were attractive to horticulturalists early on and continued to be the preferred locations for settlement.

Corn

Current chronometric data on the age of corn on the Colorado Plateau suggests maize was present before 1000 B.C. (Matson 1991, Wills 1992). Gumerman and Dean (1989:111) argue that a commitment to agriculture was not in place until around 600 B.C. Matson (1991:268) agrees with Gumerman and Dean and is likewise careful to distinguish between the presence of maize and reliable evidence of a reliance on it as a food crop. Matson (1991) and Matson and Chisolm (1991) have convincingly argued on the basis of several data sets, including dietary carbon isotope studies, that Basketmaker II people were relying heavily on maize for subsistence (however, see Wills 1992 for a critique).

Corn appears in Utah north of the Anasazi several centuries later than its arrival in the Southwest. At the Elsinore Burial site corn is solidly dated to the second century B.C.(Wilde and Newman 1989) (see Table 10.1 for dates). Jett (1991) also reports a date on unprovenanced corn from eastern Utah at 2110 ± 70 (radiocarbon years, Beta-32290). An earlier date in the 400 B.C. range has recently been obtained on corn from the lower levels at the Alvey Site in the Glen Canyon area where upper components are mixed Anasazi and Fremont (Geib 1990). The early (seventh century B.C.) dates on corn from Hog Creek Canyon noted above (Schleisman and Nielson 1988) are all on wood charcoal from hearth and feature fill and may easily predate the corn found in those contexts by several centuries (see, for example, Smiley 1985:346). Dates from Muddy Creek suggest the use of corn there by the second century A.D.

Bow and Arrow

The replacement of the atlatl by the bow and arrow is one of the changes associated with the onset of the Formative in Utah. The timing of that change has been debated somewhat (see Geib and Bungart 1989), but in a recent exhaustive review of the evidence Holmer (1986) concluded that the bow and arrow arrived in Utah and the eastern Great Basin generally by A.D. 300.

Evidence from the sites described here argues that the bow and arrow was present in central Utah by about A.D. 200, slightly earlier than Holmer suggests. Geib and Bungart (1989) maintain that the bow and arrow was in use in the Fremont area earlier than in the Anasazi region to the south where atlatls seem to persist somewhat longer. Reed (1990), however, has noted the presence of arrow points from southwestern Colorado dating to A.D. 200 or so in a Basketmaker context. All of these dates could overestimate the age for the bow and arrow north of the Anasazi, if these dates are derived from wood charcoal. Regardless, it seems clear that bow and arrow technology arrived in the region under discussion here after the time of Christ and well after corn was present.

Ceramics

Early Fremont ceramics are well-developed utilitarian gray wares consisting of various jars, handled jugs and bowls (R. Madsen 1977). Painted and corrugated wares appear later in the Fremont sequence and styles are clearly reminiscent of Anasazi ceramics (Madsen 1986). Little new evidence is presented here on the timing of the arrival of pottery in the eastern Great Basin–Colorado Plateau region. All of the sites discussed above containing early evidence of corn, arrow points and houses are dated to before A.D. 400 and are aceramic. Most scholars place the arrival of pottery in the eastern Great Basin and northern Colorado Plateau at about A.D. 500 or so, although the earliest date, Pint Sized Shelter, ca A.D. 250, is a bit earlier (Lindsay and Lund 1976:31).

Interestingly, the earliest dates for ceramics in the Fremont area come from the north. Fremont occupations on the Bear River and in the Uintah Basin contain pottery dated by association to ca A.D. 500. Madsen (1986:213) notes that a clear north to south pattern of early to late Fremont ceramics exists and that ceramics in northern Utah predate the appearance of pottery in Basketmaker III sites. Does this mean pottery first developed in the north and diffused south? Given the clearly Southwestern influence on much of the Fremont ceramics, I would suggest that this pattern is simply a result of sampling error and earlier dates on pottery will eventually be found to the south. For example, the Little Jug Site, a Virgin Anasazi occupation on the north edge of the Grand Canyon, contained ceramics dated to A.D. 200 (Thompson and Thompson 1974, cited in Berry 1982:55). As Berry (1982:55) points out, the early dates here are consistent with the early appearance of ceramics at Basketmaker II sites to the east. Both the excavators and Berry accept these dates which argue against the statement by Madsen cited above.

Summary and Conclusions

New archaeological data relevant to questions of the transition to food production and Formative patterns in Utah north of the Anasazi have been recovered over the last 15 years. These data include evidence of the use of both temporary and more permanent houses in both sheltered and open contexts during the mid to late Archaic periods. Late Archaic structures appear to be located very similarly to later Fremont houses. These data also demonstrate that shortly before the time of Christ bell-shaped storage pits associated with habitations were in use in central Utah. These pits were likely being constructed to store corn which also appears at this time. The level of commitment to corn cropping is unknown at the moment.

The data suggest that bow and arrow technology followed the arrival of corn and corn storage strategies. Bow and arrow use is in place by A.D. 200 as far south as the northern Anasazi region. The arrival of this important addition to the tool kit seems to represent influence from the north rather than the south as dates for bows and arrows are earliest in that direction (cf. Wilde 1985:143). Ceramics appear well developed by A.D. 500 and are the last of the material traits considered typical of the Fremont to be adopted.

The above summary suggests: 1) that the development of the Formative in Utah north of the Anasazi was a gradual process covering several hundred years (Figure 10.8), and 2) that a Basketmaker II–like strategy that included pithouse architecture, storage in bell-shaped pits, and the use of corn was in place well to the north of the traditional Anasazi region at a time contemporary with the Basketmaker II of the Southwest. This latter point is not new as Wilde and Newman (1989) recently came to a similar conclusion. The data in hand further imply that the process of transition to a Formative strategy was incremental with the various subsistence and material traits, including houses, accumula-ting between the 5th century B.C. and about A.D. 500.

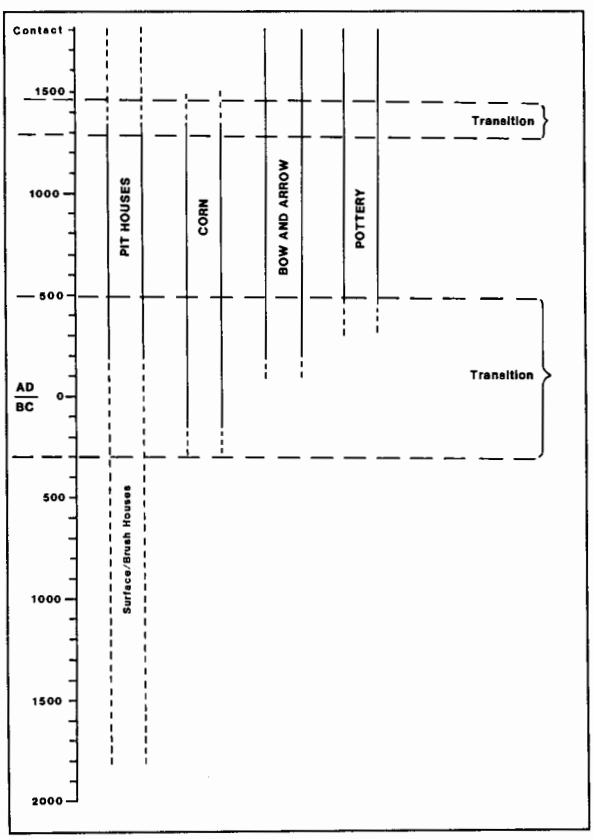


Figure 10.8 Timing of Archaic–Formative transition in central Utah.

Admittedly, the data presented here are sparse; nonetheless, they argue rather persuasively that for the northern Colorado Plateau and the eastern Great Basin the change from the earlier food-gathering strategy to the adoption of cultigens and a food-producing strategy was a slow one occurring over several centuries. Further, these data suggest that indigenous peoples in the central Utah region adopted and adapted new ideas from surrounding areas, both north and south, and gradually, rather than dramatically, shifted to a Formative strategy. This view of change is in contrast with that of Berry (1982:125), Berry and Berry (1976), and Madsen and Berry (1975), for example, who have argued against gradualism as a characteristic of cultural change in Fremont as well as Anasazi prehistory. The conclusion reached here is consistent with that presented by Rudy (1953) and Jennings (1966, 1978; see also Madsen 1982:217; Madsen 1989; Lindsay and Sergeant 1979:36) who have maintained that the unique flavor of the Formative north of the Anasazi is due to the adoption of Southwestern ideas by resident Archaic peoples.

The above conclusions don't necessarily call for a rejection of Berry's thesis for the Anasazi region, however. As noted earlier, Smiley (1985:380) likewise sees little in the way of precedent in the Black Mesa region for the Basketmaker II adaptation that appears about the time of Christ and offers a migration–expansion hypothesis to explain the arrival of horticultural strategies here (see also Berry and Berry 1986). Matson (1991) likewise makes a migration argument for the emergence of horticultural strategies in the Southwest, although he specifically notes that

the Fremont strategy most likely evolved in place (Matson 1991:275). It is certainly possible that agricultural strategies on the central and southern Colorado Plateau arrived through different processes than those operating on the northern Colorado Plateau. Hunter-gatherer populations may have been quite thin in the arid southern Colorado Plateau and, if so, would have offered little resistance to an influx of horticulturalists. To the north, the better-watered eastern Great Basin and adjacent regions could have been home to substantial numbers of resident hunter-gatherers whose presence may have discouraged continued northward movement of the newcomers. Such speculations are difficult to test, however.

It is recognized that this presentation is descriptive only. I have attempted to fill in some gaps in the culture history of the region north of the Anasazi by presenting new data on the timing and descriptions of important changes in the region north of the Anasazi. The argument also speculates as to how those changes might have taken place. None of this speculation has focused on why people in this region might have chosen to produce some percentage of their food. The current literature on the Fremont (Madsen 1989, Marwitt 1986, Jennings 1978), however, suggests that the level of Fremont commitment to agricultural pursuits, although quite variable internally, was nowhere as great as that of the Anasazi (current research may refute this position, however, Joan Coltrain, personal communication 1992). Consequently, the decision to grow corn and other crops never led to the irreversible position eventually achieved by the Anasazi. Flexibility was always an essential part of prehistoric life in this region (Jennings 1978, Madsen 1989).

Do the above conclusions change our view of Basketmaker? Only in terms of geographical extent. The conclusions reached here regarding the Basketmaker II strategy are consistent with the definition offered earlier by Smiley (1985) who defined the Basketmaker as "positioned at the chronological base of food production on the Colorado Plateau." Perhaps the region wherein a Basketmaker-like strategy operated is somewhat broader than that envisioned by Smiley and others, but the economic implications are the same – Basketmaker means the beginnings of the use of corn and horticultural strategies. It should be pointed out that the work of Matson (1991), Matson and Chisolm (1991), and others has demonstrated that Basketmaker II people were committed to agriculture by 500 B.C. In the Fremont area to the north of the Anasazi that commitment was in place by at least by A.D. 500 and perhaps earlier. In contrast with the earlier views of Morss (1931), Jennings (1978) and Marwitt (1986) who maintained that Southwestern influence on the Fremont area began in Basketmaker III times or about 500 A.D., the data presented here demonstrate that such influences began before the time of Christ (see also Wilde and Newman 1989, Madsen 1989).

As a final note, I recognize that many of the dates presented here are somewhat suspect given the problem with dating charcoal out of hearths where old wood may have been burned and from beams that may have been robbed form earlier structures. Berry (1982) and Smiley (1985) have done a good job of forcing us to be absolutely sure we know what it is we are dating.

Acknowledgements

Many thanks to the Wetherill–Grand Gulch Project for the opportunity to be involved with them and their successful efforts to revitalize interest in Grand Gulch archaeology and Basketmaker research. Special thanks to Julie Johnson for offering me the chance to act as the principal investigator for the project, a title that implies more than was involved. This paper has benefitted from ideas generated in discussions with Jim Wilde and from his comments on the written version. Many thanks also to Bill Lipe who attempted to bring me up to speed on the view from the Southwest. The final form of this paper rests on my shoulders alone, however.

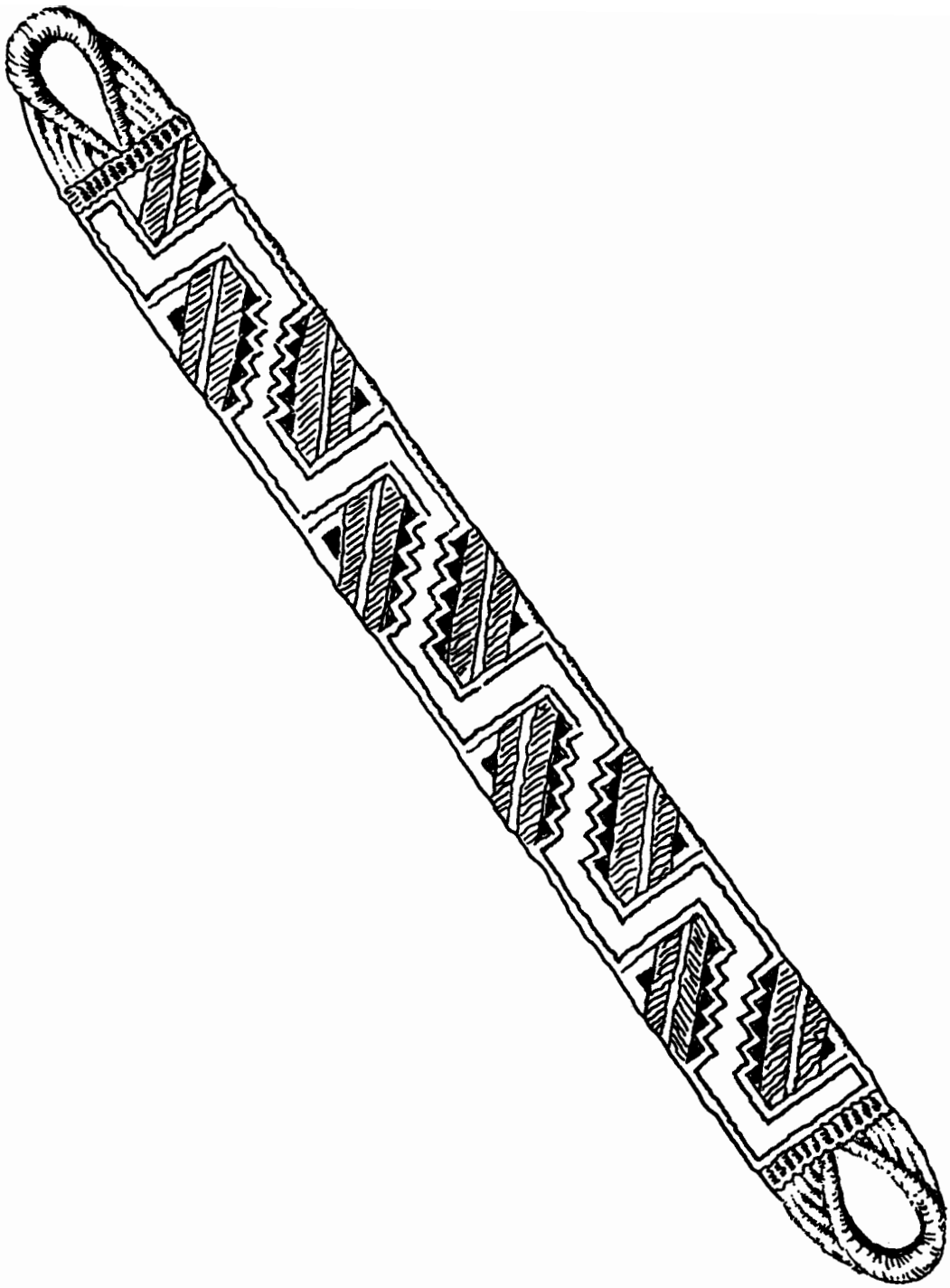


Figure 11.0 Burden band (Drawing by Ann Hayes)

Early Farmers in the Northern Southwest: A View from Marsh Pass

Frances E. Smiley

Grand Gulch and Marsh Pass hold preeminent places in the development of southwestern archaeology. The preeminence of the localities (Figure 11.1) stems in neither case from the spectacular aspect of the cliff dwellings with which both areas abound. Instead their importance lies in the contributions each region has made to our understanding of prehistoric cultural development in the Southwest.

The Grand Gulch region of southeastern Utah gave the scientific world the first inkling that, far from being the first humans in the Southwest, the *cliff-dweller* had an *elder*

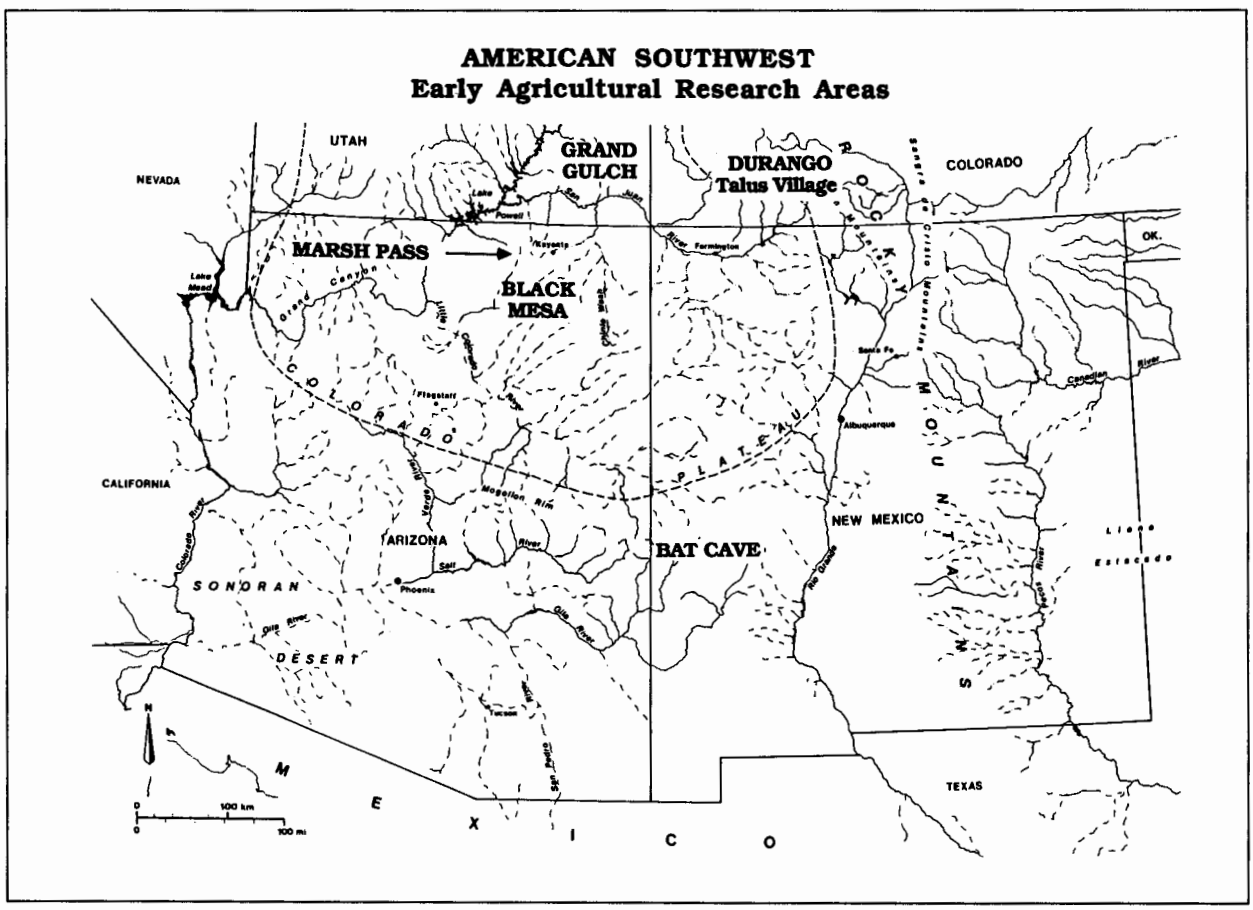


Figure 11.1 Map showing the research areas mentioned in the text.

sibling (Prudden 1897). Marsh Pass in northeastern Arizona was the scene of the first scientific investigations of T. Mitchell Prudden's elder siblings of the cliff-dwellers.

The *Basket Makers*, as these peoples came to be known, left archaeological remains that captivated, among others, the Wetherills, and constituted some of the most important archaeological examples of early agricultural societies in the world. In many ways, Basket Maker archaeology is about early agriculture, and in our long human career, the shift to agriculture looms large, indeed (Smiley 1985; Matson 1991; Wills 1988).

Agriculture, whether "invented" (*sensu* Rindos 1984) or "accepted" by human societies, has led to more dramatic social, technological, ideological, and economic changes more rapidly than any previous comparable phenomenon. The rise of agricultural lifeways in our own American Southwest formed the foundation of the far-flung Anasazi tradition that linked peoples and cultures across the Southwest for nearly two millennia. Compared to the shadowy, ephemeral evidence of the Archaic-period peoples who moved across the vast southwestern landscape for the 7,000 years previous, the early farmers appear to us absolutely florescent.

Not only do the Basket Maker sites provide a window on the process of human transition to food production, but Basket Maker archaeology occupies an important place in the history of archaeological research, as well. Recognized during the birthing of stratigraphic methods (Kidder and Guernsey 1919; Amsden 1949) in archaeological excavations, the Basket Maker remains in the sandy rockshelters of the northern Southwest attracted looters and prehistorians alike. Because these early farmers used rockshelters as storage facilities, and because rockshelters have high visibility, few, if any, pristine sites remain.

Known to date back at least to 1894 (Amsden 1949:44), the term Basket Maker referred to the remains of peoples that seemed always to lie beneath those of the well-known cliff-dwellers. The Basket Maker assemblages seemed to lack pottery, but to yield quantities of beautifully made basketry and textiles.

The import of relative stratigraphic position is, of course, a first principle of archaeological research that was only beginning to be appreciated in the decades around the turn of the century. The idea that succeeding cultures should be found stratigraphically above previous cultures in the record led to the permutation of the term Basket Maker in 1927 to Basketmaker II (Kidder 1927). Because the archaeologically recovered remains from Basketmaker sites proved so varied, rich, and complex, the Basketmakers were considered to be a relatively well-developed manifestation of preceramic agricultural society. Since archaeologists expected to encounter evidence of earlier, less-developed societies only beginning to grow crops, the term *Basketmaker I* was held in reserve, and has since been supplanted by the term *Archaic*.

Synonymous with early farming in the northern Southwest, the term Basketmaker II brings to mind, among others, two primary research regions: Grand Gulch and Marsh Pass (Pepper 1902; Kidder and Guernsey 1919). In both regions (Figure 11.1) early prehistorians unearthed complex, varied, and beautifully preserved assemblages of the materials, the tools, and even the physical remains of the Southwest's early farmers. The initial investigations in the Grand Gulch region predate the Marsh Pass work by two or more decades.

Like the Grand Gulch region, the Marsh Pass area (Figure 11.2) has a long history of research on the earliest farming peoples. The large rockshelters and caves in the Marsh Pass region provided the stuff for extensive publication on the material cultures and lifeways of the extensive publication on the

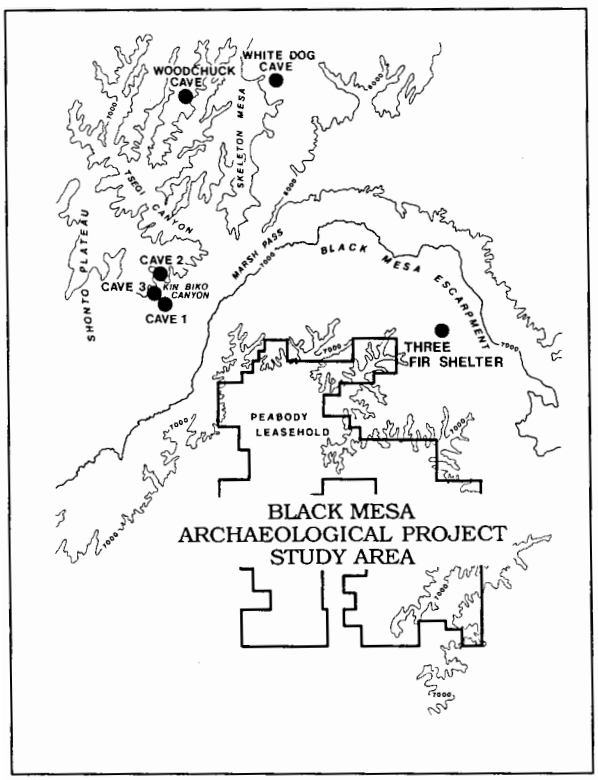


Figure 11.2 Map of the Marsh Pass region of northeastern Arizona showing early agricultrual rockshelter sites and the Black Mesa Archaeological Project (BMAP) study area on northern Black Mesa.

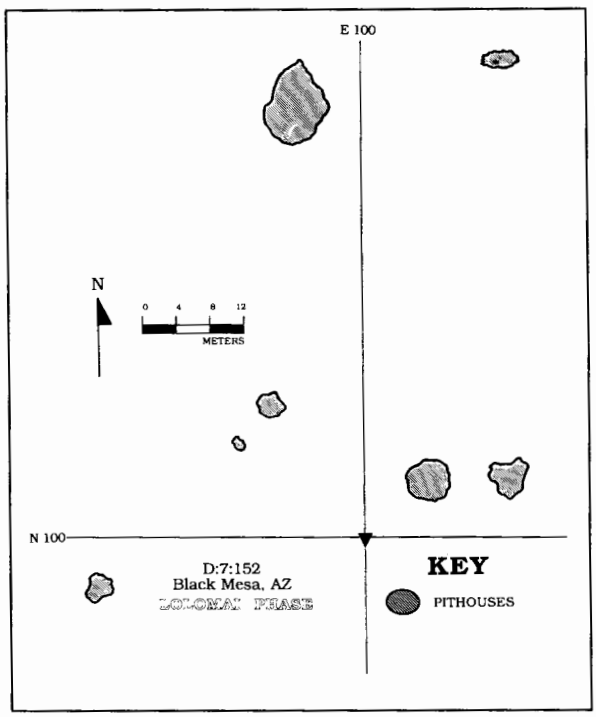


Figure 11.3 Site plan for D:7:152, a pithouse settlement on northern Black Mesa.

material culture and lifeways of the preceramic Basketmakers. A. V. Kidder and Samuel Guernsey of the Peabody Museum of American Archaeology and Ethnology worked there in the early decades of this century (1919; Guernsey and Kidder 1921; Kidder 1924). Their work and publications set important standards and remain unrivaled among a handful of primary works on the Basketmaker II peoples of the northern Southwest.

Curiously, little additional research into the preceramic Basketmaker occupation was undertaken in the following decades (but see Lockett and Hargrave 1953) in the Marsh Pass region. In the Late 1960's, however, the Peabody Coal Company began large-scale energy development on Black Mesa. Black Mesa rises abruptly from Marsh Pass forming an impressive scarp to the South. Black Mesa comprises a vast, topographically and vegetatively diverse upland. Virtually unknown before federally mandated archaeological work began in 1967, the Black Mesa research area was to provide a detailed view of new aspects of early farming culture in the northern Southwest.

At the outset of research on Black Mesa, the Black Mesa region Basketmaker II phenomenon was known exclusively from the cave excavations at nearby Marsh Pass. The Basketmaker II peoples presented a paradox remarked upon by Kidder and Guernsey, themselves. The rockshelters yielded a cornucopia of the most perishable kinds of human artifacts and materials, but nowhere did the early excavators recognize unequivocal evidence of actual habitation in the shelters. The habitation sites and dwellings, they thought, must consist of "...perishable structures built in the open..." (Guernsey and Kidder 1921:110).

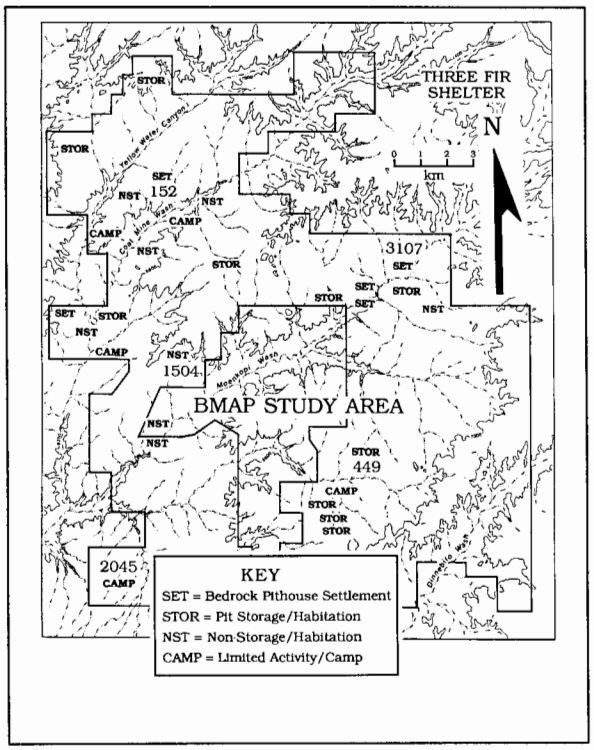


Figure 11.4 Map of the BMAP study area on northern Black Mesa showing locations of the excavated and tested Basketmaker II Lolomai phase sites in the area.

The mystery of the whereabouts of habitation sites contemporaneous with the well-known rockshelters seemed to begin to unravel during the early years of the archaeological research of the Black Mesa Archaeological Project (BMAP). In 1973 and 1974, BMAP excavations revealed a cluster of small pithouses dug into the friable sandstone bedrock that lies near the surface over large expanses of northern Black Mesa. The site, D:7:152 (Figure 11.3), yielded no pottery, but the agricultural economy of the site's former inhabitants was unmistakably revealed by the charred corn cobs, kernels, and corn stalks recovered from the burned, collapsed roof of one of the small dwellings (Ravesloot 1984).

Site D:7:152 on Black Mesa, along with several sites in the Hay Hollow Valley to the south, provided the initial body of chronometric evidence supporting Kidder's and Guernsey's hypothesis of open air habitation developed over 50 years earlier. Initial radiocarbon dates from these sites placed them between about 600 B.C. and A.D. 200 (Martin and Plog 1973; Smiley 1985; Berry 1982; Berry and Berry 1986).

The excavations at D:7:152 marked the beginning of a major BMAP research effort exploring the variability in the abundant Basketmaker II remains within the study area. The Black Mesa Basketmaker II period became the Lolomai phase (Anderson 1978). By the close of BMAP fieldwork work in 1983, more than 100 Lolomai phase sites had been located. Nearly a third of these sites were excavated and many others tested and collected. Figure 11.4 shows the location and types of excavated and tested Lolomai phase sites. By 1983 a suite of about 140 radiocarbon dates on the Lolomai sites seemed to indicate that, indeed, the occupation had begun several centuries B.C. and had lasted until about A.D. 200 (Smiley and Andrews 1983).

The wide range of dates on individual sites (Figure 11.5), however, led me to suspect that most of these radiocarbon dates, all on charcoal from the wood used for building dwellings and for fuel in camp fires, might be strongly biased toward the over-estimation of the actual age of the sites (see Schiffer 1976, 1882; Smiley 1984, 1985). The probability for

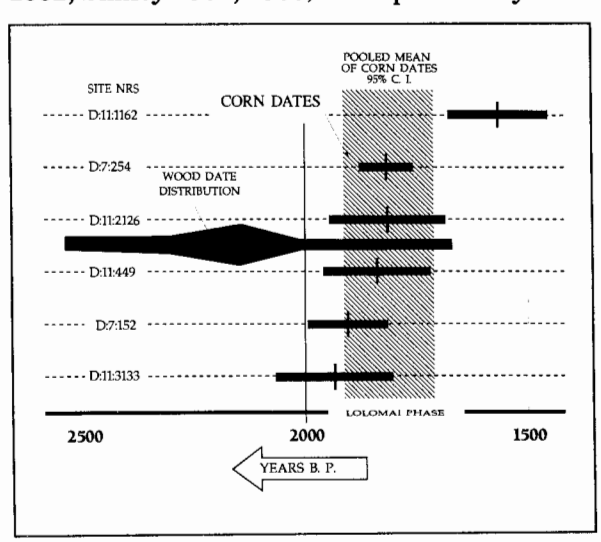


Figure 11.5 Comparison of wood and corn dates from six sites in the BMAP study area on northern Black Mesa

site age overestimation results from the fact that radiocarbon dates on *wood charcoal* only measure the age of the *wood*, not necessarily the age of the *site*.

Wood in the arid Southwest can lie on the surface for centuries before rotting away. Dead wood used in house construction or as firewood could give a radiocarbon date as many as fourteen centuries earlier than the date of the actual dwelling construction or hearth use. An age disparity of this magnitude has actually been documented for Black Mesa (Smiley 1985). Recent research indicates that dating the wood used in construction and for fuel from the Black Mesa region has about an eighty percent probability to overestimate the date of the human activity by 200 to 800 years.

Based on these research estimates, I placed the Lolomai phase between A.D. 50 and A. D. 250. I checked this estimate by dating small amounts of corn recovered from several of the sites (Figure 11.5). Because corn can only grow with the aid of human cultivators, and because it cannot be older than the age of the human activity that produced it, corn can provide far more accurate site dates than wood charcoal. The corn dates fell precisely in the period predicted by the results of the study of the old wood problem (Smiley 1984, 1985).

The Lolomai Phase and Early Agricultural Patterns

It was no surprise to southwesternists in the mid-1980s that the Basketmaker II peoples in the northern Southwest should appear to date to the centuries just after the time of Christ. Tree-ring dates from Talus Village in southwestern Colorado and other sites had already placed the Basketmakers in this interval (Morris and Burgh 1954; Lipe and Matson 1971a, b). What was surprising about Black Mesa region Lolomai phase Basketmakers, in particular, was the variety and number of sites.

I examined some 30 excavated and tested sites (Smiley 1985) placing them into four groups according to the kinds of architectural and storage features observed on the sites. The Black Mesa sites fall approximately evenly into the four groups, suggesting a good deal of variability. A fifth category, rockshelters, contained only one site, but as should already be evident, there are a number of Basketmaker rockshelters in the greater region, and several near, if not in, the local area of the Peabody Coal Company leasehold.

The site types I mentioned are defined mainly in terms of the presence or absence of dwellings and storage pits. The presence of dwellings of various types indicates a certain level of labor investment in the living site. The degree to which people move about the landscape is usually inversely related to the amount of labor they put into their dwellings. The transition to farming in any given world region often coincides with a dramatic reduction in mobility. But anthropologists are far from sure about the precise relationship between farming and the beginnings of settled village life. While some have viewed agriculture as synonymous with sedentary village life, others point to the apparent mobility of early agricultural populations (see Flannery 1986 for discussion). Thus, the spread of agriculture across the Southwest provides an opportunity to study the process of change in the organization, settlement patterns, and technology of human groups engaged in one of the most remarkable of human transitions: from highly mobile hunting and gathering adaptations to sedentary village life.

Like dwelling types, the presence or absence of storage facilities at the Lolomai sites provides information on the function of sites within the settlement system. Sites with storage facilities indicate at least periodic, planned reuse of a location as opposed to one-time use and abandonment. Sites with a large storage capacity suggest frequent site use or even relatively high site population.

The importance of storage in human social and economic terms cannot be overemphasized. The presence of storage facilities alone provides a solid indication of a surplus-based economy, so different from the usual hunter-gatherer pattern. Mobile hunter-gatherer groups that roamed the Southwest for thousands of years before the advent of food production used the environment as the storehouse, moving to resources. Hunter-gatherer populations depend on natural productivity to supply their needs. They determine only how much effort they are willing to expend in harvesting a particular resource. Farming populations have an entirely different strategy in that they determine, within their technological limits, *where, when, and how much* of given types of resources will be available. They decide not only future resource availability in terms of the time of harvest, but also in terms of a supply for the more distant future through storage.

Thus, bound up in the process of transition are several phenomena including storage, the investment of labor in dwellings, the beginnings of settled life, food storage and surpluses, and population increase, all of which present a complex matrix of cause and effect. Which of the possible aspects of the transition are results and which are causes?

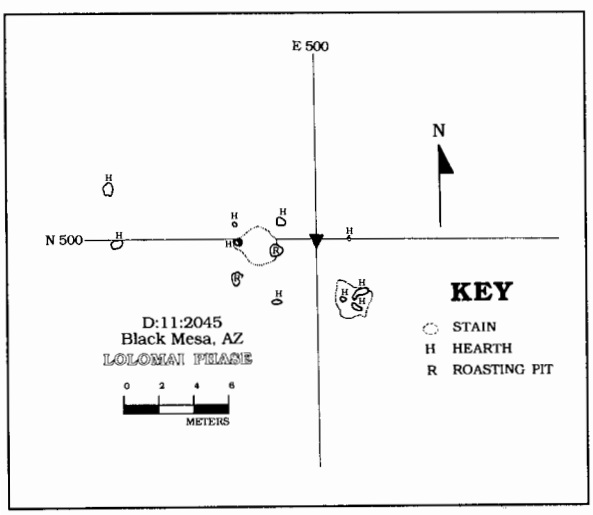


Figure 11.6 Site plan of D:11:2045, an example of the ***Camp*** *category in the Lolomai phase site classification.*

The Black Mesa research on early agriculture has begun to throw some light on the process and to illuminate some of the variability.

Lolomai Site Types

I have divided the Lolomai phase sites into five types based largely on architectural features. While innumerable typological schemes are possible, the simple, straightforward categories used here seem useful in illustrating the variability in the Lolomai phase settlement system.

Camps

The simplest and smallest of the Basketmaker II site-types, the *open camp* (Figure 11.6), consists only of an artifact scatter and a few up to several surface hearths. Without exception, the Lolomai phase camps have produced corn indicating that this food played an important enough part in the yearly diet to be carried along on foraging and hunting travels. Small sites without evidence of dwellings or storage facilities are inferred to have been used only for short-term stays and are designated camps.

Non-storage Habitation Sites

A second site-type, *non-storage habitation sites* (Figure 11.7), have no storage pits but do have at least one dwelling. The

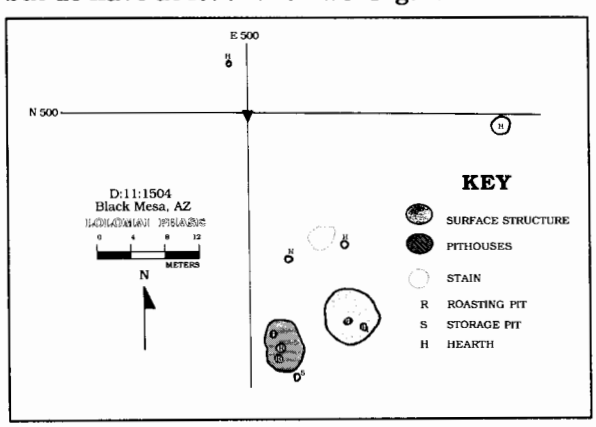


Figure 11.7 Site plan of D:11:1504, an example of the ***Non-storage Habitation*** *category in the Lolomai phase site classification.*

presence of dwellings, even small, brush-covered surface structures, indicates more than a brief stay. Non-storage habitation sites likely result from the seasonal residence of one or two families gathering pinyon nuts or other wild foods.

Earthen Pit-storage Habitation Sites

Similar in size, but not, apparently, in function, the *earthen pit storage site* category (Figure 11.8) consists of one or a few small surface and/or pithouse structures with large, carefully prepared earthen storage pits. Such pits average about five cubic meters in capacity, and each dwelling on these sites apparently had about a cubic meter of total storage. The bell-shaped pits were cut into sandy loam soils in well-drained locations near the dwellings. Many pits had been fired to kill insect pests, harden the walls, and prolong use-life. One pit retained a cap of sandstone slabs and had apparently just been fired and readied for use when it was abandoned.

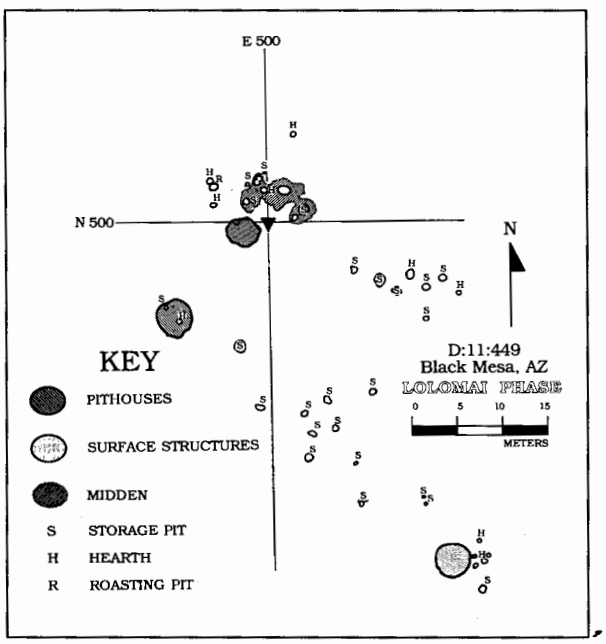


Figure 11.8 Site plan of D:11:449, and example of the ***Earthen Pit-storage Habitation*** *category in the Lolomai phase site classification.*

Bedrock Pithouse Settlements

Most labor-intensive of the Lolomai site-types, the *pithouse settlement* seems to have housed the largest residential groups for the longest periods (Figure 11.9). Groups of small pithouses were excavated into friable bedrock, making them, in some sense, the first masonry structures in the region. Such sites had between six and 12 structures, often arranged in two rows. Some had external and internal storage pits and some sites without pits had one or more very small structures without interior features that may, themselves, have been storage facilities.

Rockshelters

Although there are no known *rockshelters* in the BMAP study area occupied by Lolomai phase peoples, an intensively used site, Three Fir Shelter, lies a few kilometers to the northeast (Figure 11.2; Smiley et al. 1986; Smiley 1990; Smiley and Parry 1990). Like the famous rockshelters excavated by Kidder and Guernsey (1919) in the early part of the

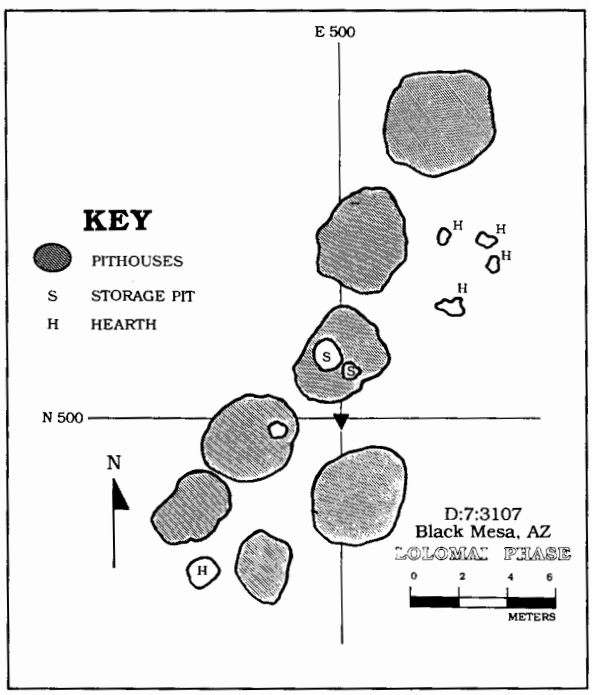


Figure 11.9 Site plan of D:7:3107, an example of the ***Bedrock Pithouse Settlement*** *category in the Lolomai phase site classification.*

century, Three Fir Shelter contains the kinds of well-preserved, perishable remains never recovered from open-air sites. The artifact assemblages from Three Fir Shelter and the Marsh Pass rockshelters are quite similar, as are the kinds of features present.

Unlike the results of the Kidder and Guernsey excavations, Three Fir Shelter work yielded unequivocal evidence of habitation. The presence of massive amounts of habitation refuse, a small structure, and evidence of textile, fiber, lithic, and other industries indicates that groups lived and worked in the shelter, probably seasonally, over a long period of time.

Although the descriptions published by Kidder and Guernsey (1919:27, 31, 75–77, 86; Guernsey and Kidder 1921:30–31; see also Taylor 1964) mention significant amounts of habitation debris (see also Nusbaum 1922), they concluded that the shelters were primarily used as storage and mortuary facilities. The evidence from Three Fir Shelter provides a means for reevaluating the Marsh Pass sites, indicating that most, if not all, shelters were, in fact, used as habitations as well.

Artifacts and Architecture

Some archaeological assemblages seem inherently amenable to pattern identification, fitting consistently into clear configurations. While a number of consistent architectural criteria can be outlined in setting out a basic site typology, the assemblages from Lolomai sites tend not to fit nicely into a particular pattern with particular architectural site types.

The primary and most plentiful artifact category, chipped stone tools and waste materials, is particularly difficult in this regard. First, assemblage size seems not to be correlated to site type, the length of residence, or the size of the residential group. Some bedrock pithouse settlements, typically the largest, most labor-intensive aspect of settlement, produced few lithic artifacts, while some very small camps yielded more than 10,000 pieces from an area about 25 meters square. Other bedrock pithouse settlements yielded many thousands of pieces of chipped stone debris and tools.

The lithic industries, themselves, do not seem to correlate with site types either. Some sites of each type yielded ample debris from the manufacture of bifacial tools, such as knives and projectile points. At the same time, other sites from each category produced little such debris, very small assemblages, and only simple, expedient tools.

The Lolomai phase assemblages do demonstrate general coherence in some ways that clearly distinguish them from earlier Archaic and later Puebloan assemblages. For example, the lithic raw materials used by both Archaic and Puebloan peoples on Black Mesa tended to consist of non-local chert types. In contrast, the overwhelmingly predominant raw material at Lolomai sites consists of local siltstones that occur interbedded with the shales and sandstones in the Wepo and Toreva formations that outcrop frequently across Black Mesa. The best quality outcrops currently known occur in the central portion of the study area and below the northern scarp a few kilometers north of the study area. The siltstone variants, primarily white, occur in abundance on the Lolomai sites, usually as byproducts of the biface manufacturing process. The tabular white-baked siltstone variety apparently favored by Lolomai populations includes vitreous, waxy, and grainy varieties. The gray and red variants are usually suitable only for large, expedient tools. The presence of white- or gray-baked siltstone debitage provides an unambiguous diagnostic for the identification of Lolomai phase sites on Black Mesa (Klesert and Layhe 1980; Anderson 1977; Smiley et al. 1983).

Other Lolomai materials or architectural features that tend to be frequent on sites, if not ubiquitous, include small, unfinished or drilled siltstone beads, side-notched dart points (Christenson 1987), small round or

ovoid pitstructures and surface structures, and finally, large, hard-fired, bell-shaped storage pits.

Site Location Patterns

Although site location and locational criteria have been hot topics in American archaeology, the Lolomai phase sites in the study area seem to lack locational patterning (Figure 11.4). There seem, with a few minor exceptions, to be no particular elevations, topographic circumstances, vegetation communities, or site slope aspects that correlate with any particular site type. Normally, the lack of patterns would cause us to question the validity of the original analytical categories, and I have given that possibility considerable thought. I think, however, the comparatively even distribution of study area resources helps explain why the criteria just listed fail to resolve the site distribution into patterns.

The topography of northern Black Mesa grades from deeply dissected canyons on the northeast to gently rolling hills separated by wide valleys with incised arroyo channels. The pinyon-juniper pygmy conifer forest covers all but the southernmost extent of the study area. Sites in any location within the area are no more than a few hours' walk from sources of chipped stone raw material, virtually any vegetative resource, or any of the several kinds of cropland situations. Water sources are adequate in spite of the general scarcity of surface water. Springs and seeps in arroyo channels can be found throughout the area.

Site patterns do become apparent, however, when soil types and other subsurface conditions are considered. Habitation sites—those with structures—nearly all lie on well-drained, deep, sandy, loam soils. Such soils facilitate the excavation of both pithouses and storage pits. The pithouse settlements—those habitation sites with several deep pithouses—lie, in all but one case, on shallow sandy loam soil underlain by friable Wepo sandstone into which the structure pits have been cut.

Since the soil and substrate situations just described can be found nearly everywhere in the study area, the patterns they indicate are not much more meaningful than describing arid-lands adapted human groups as "water-tethered." The homogeneity of the study area resource distribution makes site location almost a moot point.

The First Chronometry of the First Farmers in the Northern Southwest

In the early 1950's, the first radiocarbon dates on prehistoric southwestern agricultural peoples were attempted on materials from Bat Cave in south-central New Mexico (Figure 11.1; Wills 1988; Libby 1955). The dates ranged as old as about 6,000 years. In stark contrast, sites to the North seemed much younger as evidenced by the tree-ring dates from Talus Village and a few other localities (Morris and Burgh 1954). In many ways, the two apparent geographic and temporal extremes remained in separate research domains for almost four more decades.

In the late 1970s and early 1980s a new cycle of field investigations began. These efforts provided dates suggesting that the initial conclusion that agriculture arrived in the Southwest as early as 6,000 years ago may have stemmed from problems in both the dating process (the solid carbon method; Dick 1965; Wills 1988; Berry 1982) and the inaccurate interpretation of the stratigraphic and contextual relationships of some of the most important dates (see Wills 1985). Reanalysis seemed to indicate that not only was agriculture not so early as the initial radiocarbon dates suggested, but that agriculture might have begun as much as 4,000 years later (see Berry 1982; Berry and Berry 1986; Ford 1985; Smiley 1984, 1985).

New and Independent Evidence for the Antiquity of Southwestern Agriculture

The newest evidence does, in fact, indicate considerable antiquity for early southwestern agriculture. The conclusion that agriculture was, indeed, considerably older than 2,000 years had nothing to do with the original evidence from Bat Cave. We have arrived at this conclusion through the development of an entirely independent data base and with entirely new data. There is now good reason to think that the advent of agriculture occurred before 3,000 years ago and possibly as early as 4,000.

The new and independent data come from the radiocarbon dating of cultigens and associated annual plant materials that accurately reflect the age of the human activity. Recent early dates from a variety of sites across the Southwest indicate pre-3000 B.P. agriculture in all but the northernmost regions. Even in these regions, the small size of the sample may account for the lack of early dates.

The earliest cultigen date thus far, that is not suspect on contextual, material, or chemical grounds, comes from Three Fir Shelter on northern Black Mesa. A sample comprised of two corn cobs dated to 3,610 ± 170 radiocarbon years B.P. (Smiley and Parry 1990) and corresponds to about 3,900 calendar years B.P. according to the calibration schema developed by Klein et al. (1982).

Interestingly, the next earliest date, at about 3,500 B.P. (cal), derives from Tornillo Shelter (Upham et al. 1987) in extreme southern New Mexico. Another recently received very early date worth noting comes from Bat Cave (Wills 1988). The Bat Cave corn date calibrates to about 4,200 B.P., the raw date falling at 3,740 ± 70 B.P. (Wills 1988). Wills suggests the material may have been contaminated prior to assay, but as the dates just discussed and other dates indicate, there is reason to reevaluate even this apparently extreme example.

The new radiocarbon evidence has important implications for the antiquity of farming in the Grand Gulch region. The current earliest cultigen date from north of the Utah border (excepting the problematic early date from Cowboy Cave; Jennings 1980; Smiley 1985) is approximately 200 B.C. on corn cobs and charcoal from the Elsinore Burial in central Utah (Wilde and Newman 1989) followed by an date at 90 B.C. (calibrated according to Klein et al. 1982) from the lower levels of Turkey Pen Cave (Matson 1988). Geib (1990) reports even earlier corn ca. 400 B.C. from the Alvey site in the Glen Canyon. In a recent review of early agricultural dates in the northern Southwest, Janetski makes a solid case for increasing antiquity of farming north of the Arizona/Utah border (see Janetski, this volume).

If, however, the advent of agriculture occurred as far north as Black Mesa as early as the fourth millennium, or between the fourth and third millennia, B.P. there is also a strong possibility that sites in the Grand Gulch area may yield similar very early dates. As recently as eight years ago there were few indications that agricultural subsistence predated A.D. 1 in the Marsh Pass region (Ford 1975; Simmons 1984; Berry 1982; Smiley 1985). Only by directly dating Marsh Pass region Basketmaker II sites such as Three Fir Shelter, White Dog Cave, Cave 1, and Cave 2 has the antiquity of agriculture been established. The use of these sites clearly predates the Lolomai phase open sites on nearby Black Mesa. The use of the Marsh Pass caves can be documented through the extensive Three Fir Shelter radiocarbon suite to at least 3,000 B.P. and possibly much earlier. Following Colton (1939) and Lipe (1966), I think it is appropriate to refer to the pre-Lolomai phase Basketmaker II early agricultural period as the White Dog phase.

Early Agriculture, Transition Process, and the Northern Southwest

The advent of agriculture in the Grand Gulch/Marsh Pass region exhibits a great deal more connectivity with events and processes elsewhere in the Southwest than we previously thought. The use of rockshelters and caves as habitations, storage facilities and funerary sites began all across the vast region before 3,000 B.P. In the northern areas, however, we still lack hard evidence of early farming groups using open-air locations for any of these functions until after the time of Christ. The remains of open-air storage, burial, and habitation sites are now well documented on Black Mesa, but such sites apparently date to the period A.D. 50–250 (Smiley 1985; Smiley and Parry 1990).

In contrast, the occupation of open-air sites in the southern Southwest began much earlier, by at least 3,000 B.P. (Huckell and Huckell 1990, 1988). Thus, while the current radiocarbon data indicate that agriculture had spread across the Southwest by at least 3,000 B.P., the populations in the northern areas apparently remained small enough for another millennium to continue using suitable rockshelters and retaining sufficient mobility to need to invest labor primarily in storage, rather than habitation structures.

The scenario indicated by the radiocarbon data stands in strong counterpoint to the more usual picture of growth, population increase, and technological advance for newly agricultural populations. One might particularly expect to see population increase with a rapid spread of the materials, technology, and in some cases the peoples of agriculture across a vast region.

Thus, the evidence seems to indicate a rapid transition to agriculture if the radiocarbon data are correct. Further, the indications are unequivocal that relatively intensive agriculture was practiced right from the outset judging by the large storage facilities associated with all but the smallest sites.

These new patterns have major implications for the general process of human agricultural transition that are beyond the scope of this paper. But the immediate question remains: what sorts of change can we now detect over the long period of fairly mobile, intensively agricultural, and apparently rockshelter-tethered White Dog phase? The fact is that until the recent assays from Three Fir Shelter on Black Mesa, the length of the White Dog phase remained a matter of speculation. Now we seem to see a picture of stable systems using the region's rockshelters for at least a millennium prior to the construction of open sites. Unfortunately, our current data shed little light on cultural process of the Basketmaker II peoples during the one-to-two millennium White Dog phase. The subsequent phase, that we may term the Lolomai phase in the Black Mesa region, at least, appears far shorter and, perhaps, more accessible.

Now that the Basketmaker II period (in the Black Mesa/Marsh pass region, at least) can be seen to encompass at least two distinct phases, each with its own site configurations and settlement patterns, we are in a position to pose many more cogent questions. Regarding assemblage difference, the largely perishable rockshelter assemblages and the almost universally non-perishable open-air site assemblages differ to a potentially large degree as a function of differential preservation. Few, if any, rockshelters yielded the amounts of debitage, for example, that many open sites have provided. Some aspects of lithic assemblages seem to differ markedly as in the case of the kinds of raw materials used for projectile points and other kinds of bifaces. Conversely, open sites no longer contain the evidence of domestic manufacturing or food preparation except for small amounts of fortuitously charred materials.

These questions aside, however, there remains the general problem of observing cultural process within the comparatively long White Dog phase. Over the period of one, possibly two, millennia, agricultural

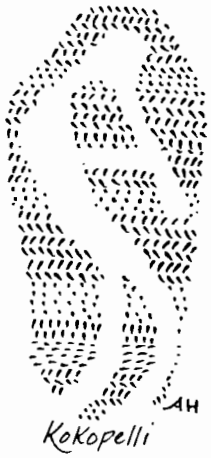
subsistence systems can be expected to have experienced considerable stress and change. The capacity for the production of surpluses through farming raises the potential for population increase with the concomitant resource stress/environmental vulnerability that most archaeologists find a compelling agent (among various others) of change in economic, technological, social organization, and ideological subsystems.

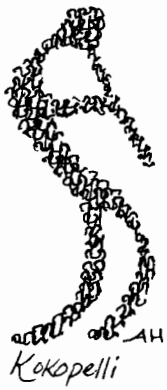
No sufficiently resolved data currently exist to evaluate such general questions within the White Dog phase. The current and incomplete data indicate apparently slow growth or even system stability for a couple of millennia. The eventual population increase occurred and is reflected in the intensity of open-air site occupations lasting several centuries (ca. A.D. 1–500). The long term trend in population increase is exemplified in the Black Mesa region as the Lolomai phase groups gave way to the aggregation of populations during the Basketmaker III period at large sites like Juniper Cove near Black Mesa to the north.

Still puzzling, however, is the fact that the earliest radiocarbon dates for agricultural groups in northeastern Arizona and northern New Mexico fall a millennium, possibly two, earlier that the *current* earliest dates from southeastern Utah. If the advent of food production is, in fact, so much later in the southeastern Utah region than in areas less than 100 km south, we have a truly interesting phenomenon. To begin to explain how agricultural subsistence became so rapidly ubiquitous, but only as far north as the Utah border at least three millennia ago, will require careful comparison of both environmental factors and archaeological assemblages between regions.

In closing I reemphasize my view that the Grand Gulch early farming peoples may well date as early as the Marsh Pass populations. Sampling remains a likely cause of the apparent age difference of agricultural beginnings in these two regions. As I have indicated elsewhere (Smiley 1990), the very small sample of dates, not to mention dated sites, from the Greater Grand Gulch region dictates caution in drawing conclusions about the true age of agriculture north of Arizona. It is worth reiterating that until a few years ago, the Black Mesa/Marsh Pass region, too, was thought to have received the materials and methods of food production comparatively late (ca 200 B.C., Berry 1982; ca. A.D. 50, Smiley 1985).

As the history of research and the new information on the early farmers of the northern Southwest clearly indicate, the chronometric complexity of the early agricultural period constitutes only a tough outer shell shielding more interesting and difficult problem aspects. Having better defined the temporal boundaries, we can begin to seek data that provide the kinds of resolution necessary to approach process and event in the development of early agricultural societies in the northern Southwest.





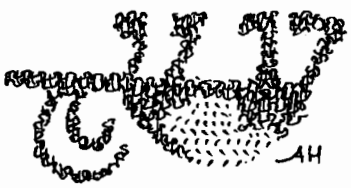


Figure 12.0 Grand Gulch petroglyphs (Drawings by Ann Hayes)

A Note on Tipi Ruin

Victoria M. Atkins, Fred M. Blackburn & Dale A. Davidson

While Fred Blackburn was a ranger in the Grand Gulch Primitive Area in the 1970s, he participated in a one-day salvage excavation at a site called Tipi Ruin (42SA4316). Led by staff of the Bureau of Land Management (BLM) and Edge of Cedars Museum, the project unfortunately was never completed. Notes and photographs are on file at the BLM office in Monticello, Utah. Collected artifacts were later accessioned by Blackburn (working as a volunteer) into the Edge of the Cedars Museum. Several individuals attempted to write up the results of the salvage work, but much information is lacking. During the 1990 Basketmaker Symposium, Victoria Atkins gave an oral presentation on the salvage work, additionally describing Blackburn's recollections of an undisturbed headless human burial. As of the date of this publication, no artifact analysis or human remains examination has been attempted. To access the file on this site, contact the BLM San Juan Resource Area archaeologist in Monticello, Utah.

Running Through Time

Figure 13.0 "Rookie Panel" (Drawing by Ann Hayes)

Cultural Resources and BLM: A Perspective from the Utah State Director

James Parker

We are pleased to be included at this significant and exciting symposium.

As you probably know, BLM has the responsibility for managing large acreages of land throughout the western United States. Here in Utah, we manage 22 million acres, or 42 percent of the State. We have a keen interest in the issues that are being discussed today because of our management of the majority of the land in the Grand Gulch area.

To begin, I would like to salute all those who have been involved in the Wetherill–Grand Gulch Research Project and in this symposium. Especially those who actually participated in the research. I think for Blanding to pull off this size of an event is a great indication of the spirit that exists here, and we certainly commend that.

I think the contributions of this research project and of the symposium are immeasurable. Today will be important not only to professional archaeologists but also to those who are amateurs or who have a special interest archaeology. We in BLM applaud the average citizen's role in today's event.

My remarks are going to be somewhat different in focus from those you have heard earlier today. I would like to tell you a few things about BLM's role and responsibilities.

At BLM, we recognize the very special trust and stewardship which we have been given for public lands, specifically as managers of the many cultural resources on these lands. Let me say up front that BLM has not always done the kind of job that it should in cultural resources management. Nor have we been as sensitive as we might have been to the significance of the values involved.

I think not only BLM, but also many of our public land users, have lacked that sensitivity. As an agency, we only received a clear mandate to manage cultural resources in 1976, so we are relatively new at this important challenge. But times have changed, and I want you to know that BLM has also changed.

On the back entrance to the National Archives in Washington D.C., above the door is carved a slogan that I think many of you have heard. It says, "What is past is prologue." I want you to know that, in terms of management of cultural resources on the public lands, BLM is out to prove that statement wrong.

What is past in terms of management of these cultural resources is not the future and will not be the prologue. We recognize the mandate which is ours; we recognize that we must do better, that we must provide more protection, that we must provide for the future of these most important resources. That mandate (especially with limited funding and limited manpower and the large number of acres over which we have management responsibility) presents interesting and unique challenges and also some great opportunities.

But, regardless of the challenges, we will fulfill that stewardship. And it is for this reason that the Bureau has recently initiated the special-emphasis program entitled "Adventures in the Past." The goal of this program is to reinforce the BLM's commitment to make cultural resources a full, equal partner in the multiple-use-management equation.

- We are going to do this in two major ways. The first is to increase public appreciation and awareness of the cultural resource values associated with the public lands. Certainly, this symposium leads in that direction, and we applaud this effort.

- The second part of this program is to enlist the public's active involvement and assistance in protecting these fragile links with the past. The example set and the work accomplished by those who have participated in the Wetherill–Grand Gulch Research Project and this symposium are in keeping with this new trust in BLM.

The way this project has developed, as I see it, is fulfillment of two of the objectives of this new trust:

- First, by highlighting some of the most important archaeological resources managed by BLM anywhere in the nation.

- Secondly, by making an important contribution to the management of these sites by providing BLM and the public with invaluable information; researched, documented, and applied by project participants. Bringing this information to the attention of the public through this symposium and making it available locally on a permanent basis are truly exciting contributions.

Perhaps equally or even more significant, in terms of contributing to the overall protection of cultural resources, is the example or model which has been created and which others can now follow, applying the concept of reverse archaeology and the management of cultural resources from point of curation back to point of origin. It is an example others will want to follow and an interest that will stir in many of us a desire to learn more about those artifacts that have been curated and separated from their points of origin.

The contribution of the Wetherill–Grand Gulch Research Project and this symposium is significant and far reaching. We at BLM salute this flagship effort and look forward to many such partnerships in the future.

Let me take a moment to share some thoughts about the future of cultural resource management in southeastern Utah. As we contemplate the significance of these unique and valuable cultural resources over which BLM has stewardship of in the Grand Gulch area, we can easily recognize it as impossible for any agency to accomplish what is needed alone.

It is for this reason that a partnership effort, exemplified by the research project, is so very important, not only to the BLM, but to all of us.

In this case, BLM did not solicit the Wetherill–Grand Gulch Research Project. Most of us in BLM were not even aware that this effort was under way until it was basically completed. It represents a very bright "point of light," generated in the private sector by caring individuals.

It also represents the essence of the stewardship concept expounded so often by Secretary Lujan. The project is the kind of effort generated by people who care. The future of cultural resources on public lands is in the hands of people who care. They are the future.

Let me share some of the things that BLM is doing to complement the efforts of private sector individuals.

BLM, in Utah, has been a key player in establishing an interagency task force on cultural resources. This task force is built on partnership and shared concerns among the

various Federal and State agencies and others who have responsibility for cultural resources. The task force includes the State of Utah, U.S. Forest Service, National Park Service, and BLM.

A major objective of the task force is public education and appreciation of the significance and fragile nature of sites in Utah, prehistoric and historic. The educational efforts of this group started out as a response to vandalism. The project has grown into a curriculum for public schools and for teacher recertification.

We are off to a very good start in the area of education and we recognize the importance of the program to the public. This effort appears to be growing into more than just a Utah initiative. It has expanded into a four-State program involving the Four Corners States with potential to spread nationwide.

As part of BLM's "Recreation 2000" initiative, we have introduced a program called "Adventures in the Past." It is designed to offer the public an opportunity to experience the unique cultural heritage of this and other areas under BLM administration. An initial event of Adventures in the Past is the Four Corners Tribute, a focus on Anasazi culture. Grand Gulch is a shining example of the Adventures in the Past program and what it is intended to be.

I am sure all of you who have visited Grand Gulch recognize the thrill of walking through a remote red rock canyon, following a few clues, and without the help of a guide or ranger or well-marked interpretive trail, discovering for yourself an ancient ruin or Basketmaker rock art panel. To do this without the restraint of overdeveloped trails, guided tours or unending crowds is one of the unique features of Grand Gulch and other BLM lands. BLM's Adventures in the Past offers this type of recreation and a wide range of other experiences.

Adventures in the Past is also designed to focus BLM on the significance and importance of its stewardship responsibilities for cultural resources. Perhaps this is the most important part of the program. It is a visible way to insure that BLM includes cultural resources in our multiple-use management of public lands.

The program is designed to promote a conservation ethic among the public and thus reduce vandalism of cultural resources. Another focus of the program is development of stronger partnerships with national organizations, state and local government, public land users, educational institutions, professional societies, local historical groups, tourism associations, and private individuals with special interests in cultural resources.

As you may have noted by my earlier remarks, in Utah, we are in the process of implementing these programs. The Wetherill–Grand Gulch Research Project and this symposium mesh beautifully with this effort.

The four BLM States that meet in the Four Corners area are sponsoring the Four Corners Tribute and a governors' conference with a focus on cultural resources. We are excited about this additional opportunity to highlight the Anasazi Basketmaker heritage. The tribute will run from June 19 to 21 at BLM's Anasazi Heritage Center in Dolores, Colorado. We invite you to participate in that event.

BLM's future efforts will also include a continuation of our very successful cultural resource publication series. These monographs allow us to share information with a large audience of both professional and nonprofessional interested parties.

Utah Archaeology Week, in which BLM participates, is a growing force within the State to highlight cultural resources. This past spring, during Utah Archaeology Week, BLM sponsored Julia Johnson's presentations about the Wetherill–Grand Gulch Research Project for five days and six lectures at various locations throughout the State. She did a super job.

As we turn to what is needed in the future, we must continue the successful programs of the past, but with greater emphasis. We at BLM must also increase our staff of professional archaeologists. We are trying very hard to get funding to do this. Our proposed action plan for the Grand Gulch–Cedar Mesa area calls for increasing our staff significantly in times of scaled back Federal budgets, a major challenge. We have some excellent staff now in the State, and they do a great job, but they are too few to do the job that really needs to be done.

We also need to put more emphasis on interpretation and stabilization. The new visitor contact stations and related facilities proposed for the Grand Gulch area will go a long way toward improving our ability to accomplish these goals. We also want to support renewed local interest in the Trail of the Ancients concept.

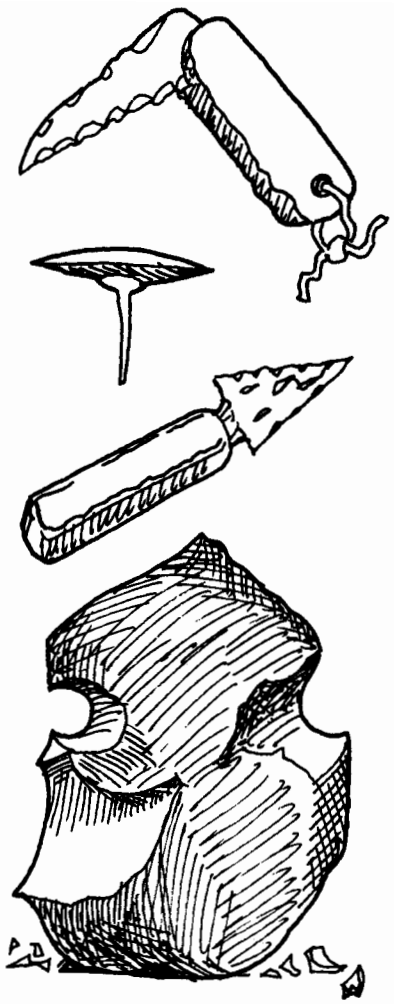
We see ourselves as more active partners with groups and institutions outside of the Federal Government. For example:

- We have supported efforts to upgrade the curation capabilities of Edge of the Cedars Museum. It is important to have artifacts curated locally. This has a major impact on how those artifacts are perceived and treated by local citizens.
- We look forward to working more closely with the Blanding campus of the College of Eastern Utah, and especially with the Native American Program.
- We are expanding our law-enforcement efforts related to cultural resources. This expansion is not only to enforce federal law, but also to help promote education and to increase public safety.

As we finalize our management plan for Grand Gulch and Cedar Mesa, I hope that you will see BLM's commitment to cultural resource management. Cultural resources are truly a full partner in the multiple-use mix.

The future of cultural resources in southeastern Utah looks bright provided we all work together in partnerships. I want to pledge to you, as BLM State Director, our support in doing this.

Much can be accomplished even without large increases in funding. Partnerships and participation by public citizens are the keys, as are sensitivity and awareness of the importance of these resources. The Wetherill–Grand Gulch project is a model for us to learn from and to emulate.



TOOLS LEFT

Figure 14.0 "Tools Left." A "modern" tool assemblage (Drawing by Ann Hayes)

Managing Cedar Mesa: A Challenge from the Past for the Future

Dale A. Davidson

Introduction

The Bureau of Land Management (BLM) seeks to implement its stewardship of the world class values of Grand Gulch and Cedar Mesa. How this can be done best has been debated since the Bureau was founded in 1946. Meanwhile, discovery of the recreational potential of the cultural and natural features of Grand Gulch and Cedar Mesa has taken place. That discovery has raised important questions about preservation of scientific values and environmental quality in the face of increasing user demands. This paper is intended to set the stage for answering those questions by:

- providing background information from the BLMs history;
- discussing the history of BLM management of Grand Gulch and Cedar Mesa;
- discussing trends in the recreational use of Grand Gulch and Cedar Mesa;
- analyzing management history and recreation use;
- discussing some management options for Grand Gulch and Cedar Mesa.

Background

First, I will provide some general background about the Bureau's history of managing for cultural resources and recreational use. For years the agency took the position that lands with a high value for recreation would better be managed by other agencies (Moon and Stewart 1988:87), even though there was authority to manage the public lands for their recreation potential. By the mid-1960s this attitude was changing, as Director Boyd Rasmussen (Director from 1966 to 1971) observed that the Public Lands were "Now being used more for recreation than any other purpose" (Muhn and Stuart 1988:87).

Activity by BLM in the management of cultural resources developed much as the activity in managing recreation had. The agency had authority from the Antiquities Act of 1906 to manage for these resources, but chose to transfer them to other agencies whenever possible (Muhn and Stuart 1988:87). From 1966 on, BLM and all other federal agencies had to reexamine their responsibilities because of the passage of the National Historic Preservation Act. The real affect of that legislation was not felt in BLM until 1974, when archaeologists were first hired (Muhn and Stuart 1988:132).

For the BLM, 1976 is the most significant year in its history because of the passage of the Federal Land Policy Management Act (43 USC 1701). Prior to the Act, referred to as FLPMA, BLM operated under a variety of diverse and often competing authorities. With the passage of this "Organic Act" the Agency finally had a formal, legal foundation. Of particular importance to recreation and

cultural resources is Section 102(a)(8) of FLPMA which contains the following, very clear language:

The public lands will be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources, and archaeological values; ...and will provide for outdoor recreation.

In other words, cultural resources and recreation use had become full partners in **multiple use**.

History of BLM Management

The national trends I have just outlined can be seen in the federal management of Grand Gulch and Cedar Mesa for the past 70 years. That management history can be subdivided as follows:

- Prior to 1960
- During the 1960s
- During the 1970s
- During the 1980s

Prior to 1960

During this period, BLM managed the area much as had its predecessor, the US Grazing Service. Projects to enhance livestock use were constructed during the 1930s. In 1936, the Civilian Conservation Corps developed a spring in the vicinity of Lookout Point and drilled a water well above Slickhorn Canyon for the Grazing Service (Hicks 1937). It is likely the major hiking trails into Grand Gulch took much of their present form during the 1930s. The trails were probably developed from routes pioneered by Native Americans, the Hole-in-the-Rock party or early day stockmen.

Very little attention was paid to recreational opportunities or cultural resources, even though these resources were becoming more widely known. The activity of the Wetherills, and the other explorers discussed in this volume, began that process. Documentation of early recreation use has yet to be found, but it is known that guided tours for visitors were taking place in Grand Gulch. These were led by Kent Frost, best known for his guiding in Canyonlands National Park, as well as Lyman Bayles, and other local people knowledgeable of the rugged canyons that drain into the San Juan River (Pete Steele, personal communication 1991).

The 1960's

While grazing continued to dominate the area, tolerance for other uses was developing. Also, some attempt at planning for the recreation potential was made and some management of cultural resources was done.

A memo on behalf of the State Director by Grant Rogers, after he visited the area in June of 1966, illustrates the changes taking place. In part, Rogers reported: "Preliminary steps to be taken on the Grand Bench area should be as follows: Archaeological clearance before starting development. Area has tremendous recreation potential. Need to correlate grazing use with recreation use of this area." The author also says:

It is noted that sanitary facilities have been installed at Green Water. That is good as this is an ideal rest stop or picnic area on the road to Halls Crossing. The horse corral now there should be moved to another location as well as the house trailer now being used by the cowboys. (Rogers 1966)

Some of the larger archaeological sites in the Grand Gulch received stabilization attention by 1962 (Pete Steele, personal communciation 1991). These efforts were continued by Utah State University in 1966, under BLM contract. The University conducted stabilization activities at 15 prehistoric sites in the Gulch and provided some recreation planning in their report of the project (Hunt and Keller nd).

The end of the 1960s saw the beginning of sustained scientific archaeology on Cedar Mesa, first under the direction of Dr. William Lipe and then Dr. R.G. Matson. The field phase of this work has continued into the 1990s while analysis and writing has resulted in a number of important professional manuscripts.

The 1970s

This is the period of greatest BLM management activity. At the same time recreation activity was beginning a rapid increase. Also, interest in the archaeology of the area from a wider segment of the population, including vandals, was growing. In 1970, a revised grazing agreement was signed that removed cattle from Grand Gulch (BLM 1970). In 1972 the Gulch was withdrawn from mineral entry and designated a primitive area, and in 1974 the Kane Gulch Ranger Station was established.

The Grand Gulch Ranger Program was established in February of 1974 (Blackburn 1979) with responsibility for Grand Gulch and Cedar Mesa and with a budget of $94,000 (Day 1979). By 1975 the program included six rangers, who were supported by an adequate budget. For the next two years the program was stable as it suffered through the usual growing pains, but in 1978 the program began to decline. In that year, three positions were directed to other BLM priorities, as part of a decline that continued through the end of the 1970s. That decline took place despite a major episode of vandalism at Turkey Pen Ruin in the late summer of 1979 (Lipe 1979).

There were several significant archaeological efforts in the area during this time. It was a period of major activity for the Cedar Mesa Project, directed by Dr. Matson. The project collected survey and testing data, some detailed information on construction sequences of buildings in the Grand Gulch, and tree ring data from sites in several canyons. In 1976, Dr. Lipe directed survey of areas proposed for addition to the Grand Gulch Primitive Area.

Clean-up of vandalized archaeological sites was also a significant activity from this time. The work, done under contract to the Museum of Northern Arizona, was directed at nine large sites in the Grand Gulch that had been badly vandalized. Very important products from that work are nine detailed maps that are still the best information available to BLM on those sites (Keller et al. 1974).

The BLM's first archaeological staff for Southeastern Utah including Grand Gulch and Cedar Mesa was hired in 1976. This was partly in response to increased pressure on archaeological sites in the area, but was more a reaction to demand for more cultural resource management because of energy and other kinds of development.

The 1980s

The decline of the Grand Gulch program took firm hold in the 1980's. BLM's political direction changed in 1980, as fewer and fewer assets in personnel and budget were available. At the same time, recreational use continued to increase, and there were some achievements in the management of cultural resources.

By 1983 only three positions were dedicated to the full time management of the area. If additional personnel were needed, the Youth Conservation Corps was called upon, until 1984 when seasonal employees were hired and Student Conservation Association volunteers were first used. Budget was also being reduced, and facilities, including the Kane Gulch Ranger Station, could only be maintained by borrowing old, difficult to maintain equipment.

In 1985, two Grand Gulch program personnel were trained and authorized as law enforcement officers. This delegation of authority provided an increased capability to protect valuable resources, but the officers

spent more and more of their time away from the Gulch on law enforcement assignments. Finally, in 1986, the last permanent position was eliminated, and staffing at the Kane Gulch Ranger Station became a seasonal activity.

Ruins stabilization and related activity was an important part of management of cultural resources in Grand Gulch during the 1980s. The report by Powers (Powers and Swift 1984) of clean-up activity after the vandalism at Turkey Pen Ruin is an important contribution. So was the assessment of stabilization needs in Grand Gulch completed by Nickens and Associates in 1985 (Metzger et al. 1986).

Trends in Recreation Use

I have briefly mentioned that use of Grand Gulch and Cedar Mesa increased dramatically while BLM management efforts were declining. The earliest "hard" visitation data I have been able to locate are from a document prepared in 1967. That data is:

Visitor registers located at Kane and Collins Spring indicate that 115 people entered the Gulch in a two year period. (BLM 1967)

In 1972 the following was recorded for the Grand Gulch area as part of the South San Juan Management Framework Plan:

Visitor use is now estimated at 1,000 persons per year figuring an average of 30% or 300 registering at Kane Gulch and Collins Canyon. Average stay per person in the Gulch is five days. More accurate visitor data is greatly needed. (BLM 1972:7a)

Fortunately, the quality of data on visitation improved greatly with the establishment of the Grand Gulch program and hiring a full time staff. During the mid 1970s recorded visitor numbers increased by almost 40 percent from 753 in 1974 to 1,016 in 1977. The length of time people were staying in Grand Gulch was also increasing rapidly, from 2.7 days in 1974 to 6.4 days in 1977. As a result, the number of days the Gulch was being impacted by visitors increased 300 percent in just four years.

At the end of the 1970s a member of the Grand Gulch staff reported the following percentages of increased use in the Grand Gulch Primitive Area:

The total number of people visiting the Primitive Area through April of 1979 is 29% over visitation through April 1978 and 33% over 1977. Total number of visitor days through April 1979 is 8% over visitor days through April 1978 and 41% over 1977. Note that even with the particularly long and cold winter of 1979, visitation figures for 1978 are surpassed, and the number of people visiting Grand Gulch in April 1979 is 56% above that of April 1978 (Haase 1979).

The report concluded that the increasing number of visitors being reported for each three month period (493 in 1977 to 739 in 1979) was an impact so significant that immediate steps had to be taken. Proposed steps included limits on the number of people in the Gulch at a time and the permanent presence of rangers in the Gulch during peek use (Haase 1979).

In the past decade the rate of visitation has increased so quickly that during April of 1990 there were more registered visitors in Grand Gulch than in any entire year prior to

Table 14.1
Grand Gulch Primitive Area Visitation
1977; 1985–1991

Year	Users	User Days
1977	1,016	6,477
1985	2,702	11,155
1986	3,094	10,737
1987	2,992	11,611
1988	3,728	13,469
1989	2,873	10,387
1990	not available	not available
1991	4,586	15,809

Table 14.2

Visitation 1985-1991 - Other Cedar Mesa Canyons

Year	Fish/Owl Canyons Users	Fish/Owl Canyons User Days	Slickhorn Canyon Users	Slickhorn Canyon User Days	Road Canyon Users	Road Canyon User Days	Arch Canyon Users	Arch Canyon User Days
1985	771	3,298	218	976	94	815	487	1,193
1986	958	3,310	348	1,293	79	275	655	1,234
1987	946	3,411	166	453	45	215	541	1,105
1988	1,064	4,189	332	1,324	237	974	737	1,297
1989	860	2,836	219	869	315	1,004	1,055	2,295
1990*								
1991	1,517	6,171	441	1,660	283	1,198	930	2,216

*1990 information is not available.

1985. Table 1 illustrates how visitation has increased since 1985 in The Grand Gulch and Table 2 illustrates the increases in other canyons on Cedar Mesa.

During 1989, the staff at Kane Gulch was instructed to gather additional information on Cedar Mesa users. They found that visitors who hiked the area came from 40 states and 13 foreign countries. Of the states, Utah and Colorado were most frequently represented, and most foreign visitors came from Europe. The average hiking party size was three people and the average length of their stay was four days.

Information BLM has on hand is that there are several groups of direct or indirect users of Grand Gulch and Cedar Mesa. They are:

- **Group 1**–Local people from Southeastern Utah, made up of: Native Americans who use the area for gathering firewood and plants; stockmen, who primarily use the mesa tops to graze their cattle; commercial outfitters who provide recreation services; merchants who provide services to visitors; and local recreationists engaged in all kinds of activities.
- **Group 2**–Recreationists from around the Intermountain West, including: Wasatch Front visitors who consider the area their personal back yard; Colorado Front Range visitors who consider the area a warm, uncrowded wilderness that is not too distant; Southwestern Colorado visitors who consider themselves local users; and merchants who provide services to these recreationists.
- **Group 3**–Visitors from beyond the areas just described–users who come because they are attracted by media outlets, and they are especially interested in the archaeology of the area.

Analysis of History

This history provides a number of points of departure for efforts to improve management of Grand Gulch and Cedar Mesa. First, and perhaps most important, while there is recreation and cultural resource management to be done, these are very closely related. So, no BLM actions will be successful unless both kinds of management are adequately addressed.

The review also leads to the conclusion that management of Cedar Mesa and Grand Gulch have been made almost impossible by lack of budget, lack of staff and lack of direction. The management gains made in the early 1970s have been overridden in recent

years, so BLM has fallen well behind where it could have been. One result of this shortfall is that there is no clear picture of the problems that confront Grand Gulch and Cedar Mesa. For instance, it is usually assumed that less than a third of visitors to the area register. So, immediately there are two problems to confront. First, there is an enormous amount of use that is not being recorded or dealt with in even the most elementary ways. Second, this use is generating tremendous impacts that are unmeasured, and ignored.

Finally, it is important to concentrate on achieving long term solutions to the problems of Grand Gulch and Cedar Mesa while focusing on individual problem areas. To achieve this, BLM and the users of the area must take every opportunity to work together on solutions for the area. The solutions can be reached by developing appropriate management options and then devising the necessary management tools.

Management Options

Selecting proper management options and applying proper management tools for Cedar Mesa and in Grand Gulch has to be tailored to the needs of the resource and public demands. This process should also be guided by a desire for management actions to be proactive rather than reactive.

A management option that has already been adopted for Grand Gulch is collecting fees for its use at collection points located at the major Grand Gulch access trails. This option has the short-run advantage of supplying much needed funds for management in the area. In the long run, fees might be collected in advance of trips as part of a reservation system that will also be used to control the number of people using Grand Gulch.

The collection of fees for use of the Grand Gulch is a process still being developed. When it has been refined to a smooth and efficient activity, it will be time to consider fees and registration systems for the other parts of Cedar Mesa. In that process options for unregistered use without payment of a fee should be considered so that a range of experiences are available to users of Cedar Mesa and Southeastern Utah.

Another management option that is already partially in place is expanding user education about making minimum impact to the natural and cultural environment of Grand Gulch and Cedar Mesa. Users have to take on more and more of the responsibility for their actions, but can only do that correctly with education. This is one management option BLM has to expand.

Another option that the management history of Grand Gulch and Cedar Mesa shows is critically important is staffing. The number of personnel needed, what kind of skills they should have, where they might live and where they will work are all important questions. Through ongoing evaluating of needs BLM can work toward a permanent staff that can handle the complex workload of Cedar Mesa.

Limiting, or even eliminating, some special kinds of use in parts of Cedar Mesa is another management option to be considered. More specifically, all kinds of stock use in Grand Gulch may have to be reexamined. So will the grazing of livestock in the canyons on the east side of Cedar Mesa.

While options for limiting use are considered, options that allow the physically challenged more use of Cedar Mesa, have to be considered. There is a range of options available, from wheelchair accessible trails to guides for the blind. Each possibility must be carefully examined to insure maximum access is being provided.

The possibilities for cooperative projects as options to enhance management of Grand Gulch and Cedar Mesa are numerous. Highly organized rock art documentation or recording of historic signatures or sites have been, or can be carried out. Less formal documentation projects that do not require extensive technical background are also possible. One vehicle for forwarding these kind of activities is a public advocacy group that would have as it's focus

Grand Gulch and Cedar Mesa. Such a group could recruit volunteers for jobs ranging from acting as canyon guides to providing monitoring and interpretation at specific archaeological sites or working at the Kane Gulch Contact Station.

CONCLUSION

Fifty years of managing the internationally significant resources of Grand Gulch and Cedar Mesa have taught many lessons. The most important is that the efforts to date have not been adequate and a very important place is in great peril. The next lesson is that a quick fix to the problems is not in the best interest of the resources many people are working to save. Instead, well developed and thoroughly reviewed plans must be developed and then implemented.

Fifty years of experience also reveal that Grand Gulch and Cedar Mesa will continue to be visited by more and more people. To adequately deal with that, BLM must enhance its management capability and visitors must take on more and more responsibility for their impacts. If both of these things happen, preservation is a possibility. If they do not, very little of Grand Gulch or Cedar Mesa, as we know it, will be available to enjoy or study in the future.

Figure 15.0 Masonry wall and doorway at Two Story Ruin in Grand Gulch (Photograph by Bruce Hucko)

Historic Preservation, Site Protection and the Archaeological Process: A National Perspective

Ray A. Williamson[1] & *Carol L. Carnett*

The accomplishments of the Wetherill–Grand Gulch Project provide an opportunity to put Richard Wetherill's work into perspective in the history of American archaeology. They also allow us to focus on the three primary issues in the preservation of prehistoric and historic cultural resources, each of which is inextricably linked to the other:

- Scientific Research—learning as much as possible about the construction and use of archaeological sites, historic structures, and landscapes and their associated artifacts in the expectation of extending our knowledge of the past, thereby improving our knowledge of humanity;
- Preservation, maintenance, and protection —saving our nation's significant cultural resources for future generations; and
- Education—sharing research findings with the broader community, demonstrating the various means of preservation as well as their significance to our lives, and educating the public about legal restrictions and responsibilities concerning cultural resources.

Why is the study of prehistory and history so important? Several years ago, one of us (RW) received a ride into Cortez, Colorado, from a local businessman after Williamson's car had broken down outside of town. The businessman asked what had brought him into the area. When he learned that Williamson was studying the astronomical practices of the Anasazi (Williamson 1987), the businessman launched into a diatribe against archaeologists. "Why do they spend so much time studying a people we aren't even related to?" he demanded. "Don't they have better things to do? Why don't they work on the history of our own ancestors?" The work of the Wetherill–Grand Gulch Project and the papers in this volume provide several excellent answers to these questions, which can be summed up rather simply: the study of both prehistoric and historic cultures, whether or not they are directly related to us, imparts an additional meaning and depth to our lives. Richard Wetherill understood these simple truths and worked much of his life to learn more about the Basketmaker and Pueblo peoples who preceded those of European stock in the Southwest. The Wetherill–Grand Gulch Project has contributed to our understanding of the lives of both the first Americans of Grand Gulch and the historic individuals who first unearthed them centuries later.

In general, preserving America's prehistoric and historic sites enhances the quality of our lives, as well as those of future generations, by increasing our appreciation and understanding of American cultural and political history. As a past director of the National Park Service has noted, "The preservation of the tangible evidence of this [our] past insures the preservation of the knowledge base. [It is] a base that can help us understand the fundamental relationships of men to each other and of men living in communities to their environment as a whole"

(Mott:1986). Cultural protection and preservation also often results in economic benefits such as jobs and increased tourism.

Southeast Utah contains unique cultural and natural resources, resources that are non-renewable. We cannot replace them. Yet despite the importance of documenting and protecting our cultural record, this nation's cultural resources—its archaeological sites and artifacts, historic structures, and landscapes — are disappearing at an alarming rate. They are literally under seige. In parts of the Southwest, an estimated 90 percent of known prehistoric sites have been vandalized, some of them severely (U.S. Congress 1987, 1988; Bassett 1986:22; Wildesen 1982:51–96). In the Southwest, many of these sites are on public land; our federal agencies have a mandate to hold this land in trust for all the citizens of the United States, not merely those living in the Southwest. Hence, it is all the more important to find innovative ways to preserve what we have—for ourselves, and for our descendants. Most of the sites dug by Richard Wetherill and other individuals a century ago are located on public lands. They were dug prior to 1906, when the first of the historic preservation laws that relate to public lands was enacted by Congress (The Antiquities Act of 1906, Public Law 59-209; U.S.C. 431-433). Much has changed in 100 years, both in scientific research and in the legal perspective toward cultural resources. This paper addresses the three issues of preservation research, conservation and protection, and education within the context of the Wetherill–Grand Gulch Project and southeastern Utah archaeology.

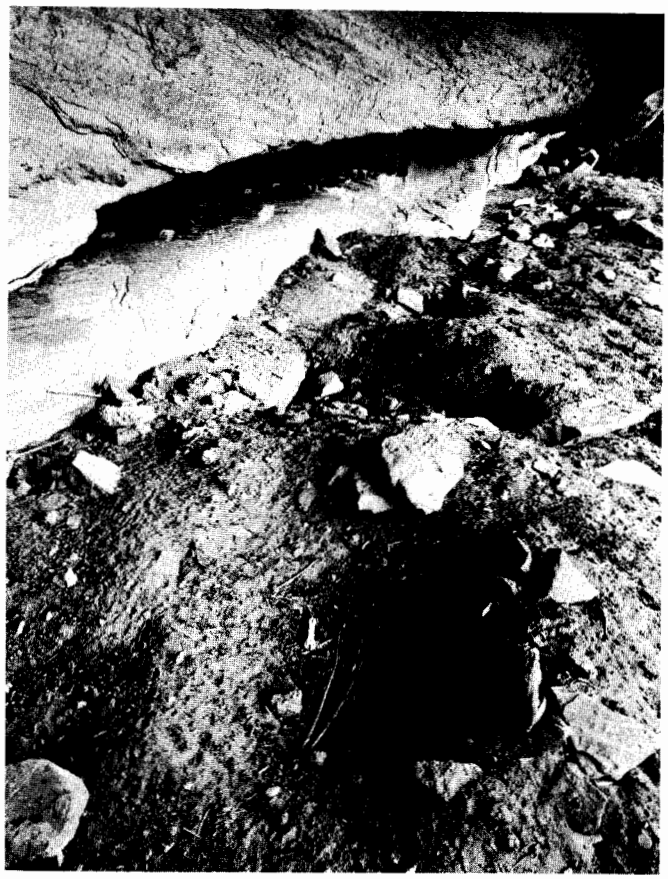


Figure 15.1 Cave 12–19 site in Grand Gulch with holes dug by contemporary "pot hunters". Richard Wetherill visited this site at least twice–once in 1893–94 with the Hyde Exploring Expedition, calling it Cave 12, and again in 1897 with the Whitmore Exploring Expedition (see Blackburn and Atkins this volume). (Photograph by Bruce Hucko)

Scientific Research

A few years ago, the Office of Technology Assessment published *Technologies for Prehistoric and Historic Preservation* (U.S. Congress: 1986)[1], a report that attempted to answer the question: How can the use of technologies, especially advanced ones derived from the disciplines of engineering and science, assist the preservation process and make the interpretation, preservation, and appreciation of our material heritage better and more cost effective? Most of the OTA report deals with the benefits and drawbacks of using advanced technologies for research, preservation, management, and protection. Yet the study also found that some of the most cost-effective ways to accomplish these objectives had nothing to do with advanced technology—at least not directly. Although advanced

technologies can improve the researcher's ability to gather and interpret certain kinds of data, it first may be important to exhaust the power of less sophisticated techniques. Despite the effectiveness of new technologies, sheer, old fashioned, dogged persistance in searching historic archives, museum collections, and other sources, combined with a knowledge of documentary techniques, is of crucial importance. For archaeological research, there is a corollary: find out all you can about a site before you reach for your shovel.

For the purposes of discussion, we have found it useful to separate the scientific research process into three major categories:

- discovery (survey, identification)
- documentation (mapping, physical investigations, recording); and
- analysis (evaluation and interpretation)

By pursuing what one might call "preservation research,"[2] the Wetherill–Grand Gulch Project has, at one time or another, assisted in all of these categories by discovering both new and previously lost sources of information about the several Grand Gulch expeditions and the artifacts they removed. Historic documentary materials are diverse and may include drawings, letters, maps, museum catalogues, photographs, printed records, oral histories, and articles. The Project has documented many Grand Gulch sites as they exist today, and has begun the analysis and interpretion of the available historical data.

In pursuing what many have called "reverse archaeology"—that is, determining the original location of many of the artifacts taken from southeastern Utah—the Project has laid the foundation for further scientific research on the museum collections (Lipe this volume). The next phase of research could make use of a variety of preservation technologies (U.S. Congress 1986:17–18). For example, advanced chemical and atomic techniques could be used to analyze the bones and tissue of human remains to study Basketmaker nutrition. Accelerator radio carbon dating of corn taken from Basketmaker deposits could enhance our knowledge of Basketmaker corn agriculture north of the San Juan (Smiley this volume). Now that many of the alcoves in which the Wetherills and others dug have been identified (Blackburn and Atkins this volume), the associated rock art might be analyzed and compared with Basketmaker and Pueblo remains taken from them (Cole this volume). Woven items could be subjected to modern examination and compared to later Pueblo techniques.

By establishing the locations of caves dug by the Wetherills and others, the Project has taken an important first step in making archaeological sites in Grand Gulch and nearby areas more accessible to the research community. Additional archaeological explorations of the alcoves in which the various expeditions dug could add immeasurably to our knowledge of the Basketmakers. Although 100 years of digging and outright vandalism has significantly degraded the archaeological record of Grand Gulch, the material preservation of the alcoves is still excellent. Scientific excavation, virtually absent from Grand Gulch, could, for selected sites, provide important insights into the lives of the Basketmaker peoples. Even though many sites are severely disturbed, they are likely to contain undisturbed pockets that still have significant scientific potential. The work of Geib and Davidson (1992) provides an instructive example of this possibility. The two tested a severely looted archaeological site in Southeast Utah and were able to show that sufficient cultural material remained undisturbed for them to trace strategraphic levels from Basketmaker III back to archaic times.

Before embarking on specific projects, archaeologists should survey the entire Grand Gulch and assess its archaeological sites for their possible scientific returns. Very few archaeological sites in Grand Gulch have been studied, or even recorded or surveyed. The Bureau of Land Management, which

manages Grand Gulch for the American people, should, in our view, conduct a detailed survey of the cultural resources of Grand Gulch in preparation for such research, as well as to improve the management and preservation of these resources.

Grand Gulch has considerable potential for supporting a wide variety of important projects. What is needed is time and money, and the interest of researchers from the professional community. Will the professional community take the opportunity? We hope so.

Preservation, Management, and Protection

The preservation side of this project is particularly interesting. One of the most important facets of interpreting the historic record is knowing the provenience of the artifacts we study—the site, the room within the site, the stratigraphic position within the room, and its position with respect to other objects in that same room. This allows researchers to analyze the geographical, environmental, and cultural context of artifacts. Without such information, most of the scientific value of an artifact is gone. This was the major problem that the Wetherill Project sought to solve—the recovery of as much provenience information as possible for the artifacts taken from Grand Gulch 100 years ago. The Project has metaphorically returned these artifacts and human remains to Southeast Utah, helping to pave the way for preserving what is left. It has also provided much of the necessary information for developing a management plan. This additional information about Grand Gulch and the increased attention to the area that the Project has provided calls for a intensive management response from the BLM, which, as noted, manages the Gulch and its many archaeological and natural resources (Davidson this volume).

Archaeologists are sometimes careful to distinguish between preservation and protection (Thorne 1981:4). As a practical matter, however, the two are closely intertwined and require an integrated approach. As successful as the Project has been in recovering significant provenience information which will assist in the further preservation of Basketmaker artifacts, we may yet see the further destruction and ultimate disappearance of these sites as a result of looting and vandalism. As noted above, sites in Grand Gulch and elsewhere in the Southwest are under stress from those who would destroy the nation's patrimony for their own gain. Fortunately, federal and state governments are slowly, though belatedly, attempting to deal with continuing losses by prosecuting acts of vandalism. With the *Archaeological Resources Protection Act of 1979* (ARPA) and its 1988 amendments, which were designed to assist the federal government in prosecuting vandalism cases on public lands, the law is beginning to provide some remedies.

The Turkey Pen Ruin case (*U.S. v. Casey Shumway*, CR-80-5-W, D.C., Utah, 1980) provides an instructive case study of an early attempt to use ARPA to bring criminals to justice. It also reminds us how vulnerable these sites still are. Turkey Pen Ruin, which is sheltered by a large alcove on the northwest side of Grand Gulch, contains Basketmaker II burials and Pueblo III structures. McLoyd and Graham worked there in 1891 and later, removing both Basketmaker and Pueblo artifacts. The Hyde Exploring Expedition also dug there briefly; it is probably Cave 20 from the 1893–94 expedition (Blackburn and Atkins this volume).

More recently, the site had been looted on several occasions in the late 1970s, prior to being placed under surveillance by the BLM in the winter of 1979. The looters knew that the site was being watched, but continued their activities and managed to avoid apprehension until BLM rangers, by negotiating ice- and snow-covered rimrock, literally dropped in on the site while two men were digging there. Although one man escaped, the other was detained and agreed to

cooperate with the investigation. His bootprints matched one of two sets of tracks leading directly into and out of Turkey Pen.

Facing a felony ARPA indictment, as well as a charge of destruction of government property, this defendant plea-bargained the felony charge down to a misdemeanor by providing testimony at a trial that implicated his accomplice. The accomplice received a felony conviction under the Destruction of Government Property Statute (18 U.S.C. 1361; penalty provisions at 18 U.S.C. 1362) but was found not guilty of violating ARPA. The evidence clearly established that the defendant had been digging in a midden, but since the term "midden" was not specifically defined in the statute as an archaeological resource, the court reached a not guilty verdict on the ARPA violation, reasoning that the term "midden" was not included in the current statutory definition of archaeological resources. The Turkey Pen Ruin case has served as a model for subsequent prosecutions, which have usually included indictments under more general criminal statutes, such as destruction of government property or theft of government property, in addition to ARPA misdemeanor or felony counts (Carnett 1991).

Although ARPA itself proved to be ineffective in the Turkey Pen case, it showed how other federal statutes (Carnett 1991:3–5) can also be used successfully to convict looters of archeological sites on public lands. During the early 1980s, ARPA felony indictments were hampered by a continued lack of final regulations from the Department of Interior. The regulations were needed to clarify and strengthen the statutory provisions defining what constituted an ARPA violation. In 1984, after long delay, the Department of Interior finally issued regulations; under the statute, four agencies—the Departments of Interior, Defense, Agriculture, and the Tennessee Valley Authorit—bear the responsibility for implementing ARPA on federal and Indian lands.[3]

The tools of discovery, documentation and analysis, whether involving advanced technologies or time-proven basic procedures, are also critical to the proper assessment of site damage in preparation for litigation (Christensen et al. 1988; Jones 1989). When vandalism or more subtle disturbance of a known site is discovered, it is often impossible to document whether artifacts have been removed. When it is known that removal has occurred, the exact nature of the items taken may not be known. Analysis and interpretation of remaining data may be limited to assessing the actual physical disturbance of the site.

With the emerging discipline of forensic archaeology, more sophisticated technologies are being used to make such assessments. Archaeologists and law enforcement specialists, working together, are more likely to salvage important information and provide a body of evidence that will allow a judge or jury to arrive at a dollar amount when establishing fines and penalties for repair, restoration, or restitution.

Public Education

Public education and interpretation play vital roles in preservation by enhancing the public's appreciation of our cultural heritage and involving the public in the preservation process" (U.S. Congress 1986:10). Support for this conclusion continues to grow, as evidenced by the findings of the Society for American Archaeology Anti-Looting Working Conference, held in Taos, New Mexico, in 1989. The final report from the conference (Society for American Archaeology 1990) gives a high priority to improvements in education and training and recommends targeting certain groups: attorneys, law enforcement personnel, the media, and the general student population from grade school through college. Further, the findings emphasized that training for government employees must focus on "archaeological values and ethics, in addition to proper methods, legal requirements, and enforcement procedures." (Society for

American Archaeology 1990:9). Public education leads to greater public support for preservation and helps protect sites from deliberate destruction.

Public education also serves to:

1) *Reduce the incidence of casual collecting.* Fascinated by artifacts of earlier eras and other cultures, amateur collectors have made artifact collecting part of their recreational activity. Often they are unaware of the damage their collecting inflicts on the available resource. Public educational programs that describe the archaeological research process and convey an understanding of the significance of prehistoric and historic cultural resources could play an important part in reducing damage from such activities (Landers 1991:42; Williamson and Blackburn 1986).

2) *Alert local residents to the value cultural resources have for their area.* Educational programs can assist them in learning how to preserve and protect local resources for their enjoyment and economic benefit. For example, the University of Colorado Center in Cortez, Colorado, offers summer bi-weekly educational programs, many of which deal with archaeological themes. Although the programs draw many tourists, they attract local residents as well.

3) *Educate with respect to preservation laws.* Successful preservation and protection efforts require the dissemination of information on several fronts. Even archaeologists, federal agency managers and law enforcement professionals often lack sufficient understanding of preservation law, policy, and procedures. Although the 1988 ARPA amendments require federal agencies to develop public awareness programs, those programs must be developed and implemented by individuals who understand the "who, what, where, how, and why" of cultural resources protection at both the federal and state level. In addition, such programs should emphasize that the public can actually share in many activities, such as site stewardship or assisting in information gathering.

The primary purpose of any public or professional education program should be to foster awareness and appreciation of historic and prehistoric cultural resources, while not neglecting to point out that there are legal consequences for those whose activities damage or destroy those resources. At a bare minimum, people should know that both civil and criminal penalties follow from damage, destruction, or theft of archaeological resources; penalties can include fines, forfeiture of personal property, additional monetary damages, community service hours, and imprisonment. Also, even if ARPA or other preservation statutes do not apply, other more general laws often do.

Because the work of the Wetherill–Grand Gulch Project will continue to bring the cultural resources of Grand Gulch before the public, an additional responsibility falls upon the Project participants to assist in communicating the importance of protecting the sites they have studied. The Project serves as an excellent example of communication and cooperation among interested citizens, professionals, and government agency personnel. It is precisely the sort of interaction that is necessary to facilitate improved preservation and protection.

As noted earlier, museum collections can be used to further research on Grand Gulch. Curators should be delighted to see that happen, as such activities enhance the value and importance of current collections, which they have worked so hard to preserve. Indeed, we have the museums to thank for preserving Grand Gulch artifacts over the last 100 years. Yet, in addition to preserving material for research or for the appreciation of the public, museums have another important role—that of public education. Although museums have generally done an excellent job of educating the public about the artifacts in their care, they unfortunately have a poor record in

educating the public regarding the issues of site protection. "Museum curators tend to regard the museum as a facility for conserving prehistoric and historic artifacts and educating the public concerning their function and meaning. Most curators have not taken an active role in educating the public about the need to preserve cultural materials not in museums... Protection issues need to be included in [museum] interpretations" (U.S. Congress 1986:127). This message needs to be delivered to the museums because they deal so much with the public.

We appreciate the fact that some members of the professional community continue to be skeptical as to how much good education can do, especially when the economic rewards for looting certain sites remain significant. However, individuals who are trafficking in artifacts will continue to gain their information elsewhere. Those who are able to share in the public education effort, yet refuse to do so, will continue to be part of the problem.

Richard Wetherill's Archaeological Activities

The Wetherill–Grand Gulch Project has illustrated and emphasized the contributions the Wetherills made to early archaeology. The work of the Wetherills in the many ruins of Grand Gulch has typically been described by members of the modern community of professional archaeologists as "looting and wanton destruction" (Fike 1981:50). Today's characterization is made, in part, by applying standards that did not exist at the time of the Wetherill expeditions, and is, therefore, both inaccurate and unfair.[4] It should be emphasized that the digging activities of Richard Wetherill and his family or other associates in Grand Gulch took place prior to any legal bar to those activities. No laws were in place at either the state or federal level to prohibit the digging of a site or removal of artifacts for sale to private collectors and museums. In fact, many digging activities were explicitly or implicitly supported by museums who funded expeditions or purchased collections. Warren K. Moorehead, writing as early as 1892, complained about the role of wealthy collectors, many of whom immediately donated their collections to museums, in hastening the destruction of southwestern archaeological sites (Moorehead 1892:23).

As other articles in this volume show, Wetherill often took great pains to document his activities, to catalogue the items found and removed from each site, and to record site-specific topographical information. Richard Wetherill's trail of paper, photographs, and other evidence made the reverse archaeology of the Wetherill–Grand Gulch Project possible. Such attention to detail—in Wetherill's time or today—is not the methodology of the commercial looter. Particularly for the current market, looters and middlemen attempt to destroy all evidence that would identify the true source of the pilfered artifacts. Indeed, as a prerequisite to any successful "legal" sale, it must be shown that artifacts were taken from private lands with the consent of the owner.

The Project has researched hundreds of documents to rediscover just the kinds of information that continue to be so easily and permanently lost through both intentional and accidental site damage. Although it is well settled that much archaeological information was also lost because of flaws in the early expeditions' methods, the sheer volume of the existing record illustrates the important role Wetherill and others played in the development of American archaeology, a role that many professional archaeologists incorrectly downplay or ignore altogether.

National Attention to Cultural Resource Protection and Preservation

Is Washington listening to the needs of preservation, especially in southeast Utah? In particular, what is the U.S. Congress doing about these needs? Cultural resource

preservation is just one of many areas that require congressional attention and assistance. More than twenty federal laws with their many amendments, supplemented by additional Executive Orders and regulations, deal with the preservation of cultural resources (U.S. Congress 1986:6). The legal framework is well in place. Yet lack of financial resources and lack of follow-through by some federal agencies, often impede full execution of the laws.

In recent years, Congress has assisted cultural resource preservation by passing the Abandoned Shipwreck Act of 1987 (Public Law 100-298; 43 U.S.C. 2101–2106) and the 1988 amendments to the Archaeological Resources Protection Act (16 U.S.C. 470aa–mm).

In its function of overseeing the Executive Branch of our government, Congress holds hearings and commissions studies by the congressional support agencies (Congressional Research Service, General Accounting Office, Congressional Budget Office, and Office of Technology Assessment). The oversight process is seldom well understood outside Congress, yet it can sometimes lead to significant changes in federal management practices or agency funding. Hearings, in particular, may alert Congressional committees to major problems or concerns about which they need to be aware. For example, the Subcommittee on General Oversight and Investigations of the House Committee on Interior and Insular Affairs held hearings in 1987 and 1988 on looting and vandalism of archaeological sites in the Southwest (U.S. Congress 1987, 1988). These hearings underscored the need to strengthen ARPA. Congress also commissioned the General Accounting Office (1987) to prepare a report on preserving and protecting archaeological resources, which dealt in part with artifacts from the Southwest. It also requested an Office of Technology Assessment report (1986), which examined the use of technologies to improve preservation and protection of cultural resources.

Because Congress, in effect, reflects the interests of the American public at large, it is up to that public to educate Congress about the importance of preserving cultural resources in Grand Gulch and elsewhere. Congressional offices and committees receive hundreds of visitors a month, pressing a wide variety of agendas. Thus, those who are concerned with preserving the nation's cultural resources should make their interests known to their elected representatives.

Grand Gulch, and other public lands in southeast Utah are important national resources. In order to preserve the cultural resources on these lands, they should be surveyed. As a beginning to better cultural preservation, Congress could assist the preservation process by mandating and funding a detailed archaeological survey of the Grand Gulch Primitive Area.

Conclusions

Individuals with strong interests in archaeology and history can play a significant role in studying and preserving cultural resources. The papers in this volume and the research that preceded them provide excellent examples of this point:

> The agencies could make better use of such programs to support Federal programs by helping such groups pursue their interests. Often, rather than supporting those with avocational interests in preservation activities, agency personnel perceive them as increasing their workloads vis-a-vis supervision and granting permits. Yet, these and other interest groups can be extremely effective in helping to focus local public opinion toward protection of prehistoric and historic sites (U.S. Congress 1986:143).

In our view, the state and federal governments can and should do much more to support such activities. In particular, federal agencies can :

1) Pursue public education and awareness programs such as the "Save the Past for the Future" (1990 Department of the Interior Program), or the "Site Steward" program of the state of Arizona, which encourages volunteers to accept responsibility for monitoring the conditions of certain archaeological sites (Arizona State Historic Preservation Office 1991a; 1991b);

2) Reach out to avocational archaeologists and support their efforts. The U.S. Department of Agriculture Forest Service's "Passport in Time" program encourages individuals with archaeological interests to assist in excavating sites on Forest Service land, after they have received training in basic field methods;

3) Help educate not only the general public, but also law enforcement professionals and attorneys, about the laws, how to enforce them, and how to prosecute violations;

4) Survey the archaeological resources of Grand Gulch and develop a management plan to protect them more effectively;

5) Resist attracting more visitors to Grand Gulch and other stressed areas, especially until the resources are available to provide adequate law enforcement for them.

Archaeologists can assist by:

1) Surveying the many alcoves and other archaeological sites in Grand Gulch. Although many sites have been badly damaged over the years, they still hold considerable archaeological information about the Basketmakers; and

2) Studying and interpreting the materials now stored in museums. Now that the general provenience of many artifacts is known, there is much to be gained from such study. Hurst and Turner (this volume) provide an excellent example of scientific research that can be pursued using museum collections.

Avocational archaeologists and historians can assist by:

1) Taking part as volunteers in a detailed survey of Grand Gulch and other sites on public lands;

2) Becoming more familiar with preservation laws and disseminating information about them in their own communities; and

3) Following the model provided by the Wetherill–Grand Gulch Project.

Finally, the work of the Wetherill–Grand Gulch Project demonstrates several points: First, the Project has national importance. Not only have the team members travelled throughout a good part of the nation—the Southwest, Midwest, and East—to gather their data and to interact with others, the Project has demonstrated how a dedicated group of individuals from diverse backgrounds can make a major contribution to the nation's prehistoric and historic record. Second, the Project's results are exciting. Although the Project received relatively little funding, it has produced results of lasting significance. Storage of the Project's many photographs, documents, and other materials in the Edge of the Cedars Museum, Blanding, Utah, will make them available to researchers. Third, we need more projects like it.

The process of reverse archaeology has been a complex task. It must sometimes have been frustrating as well. By giving the artifacts context through focusing people's attention on the available collections and their associated records, the Project contributes to better preservation and protection of these collections, and assists future research.

In recent years, the United States has spent a lot of effort worrying about its competitiveness in the world economy. Another area we might examine more closely is our competitiveness in preserving significant aspects of our past. Most of the other industrialized nations are well ahead of us in that regard. In our view, a nation that is ready to give up the

material evidence of its rich past in favor solely of the here and now, is a nation on the decline.

The residents of southeast Utah could make a further important contribution to the preservation and protection of Grand Gulch's cultural resources by taking a direct interest in seeing that the objects that were taken from this area are properly curated and conserved in the museums in which they now reside. They, and others who live elsewhere, but have strong interests in the prehistoric and historic cultural resources of southeast Utah, can play a critical role by letting elected officials at the federal, state and local levels know that they care. They should also get to know the relevant staff in the regional federal offices and apprise them of their concerns. The Bureau of Land Management and other agencies cannot and should not do it alone. But the agencies need to know the interest is there. The bottom line is—get involved!

NOTES

1. Parts of this paper are derived from the OTA report, Technologies for Prehistoric and Historic Preservation, for which Ray Williamson was project director. However, the opinions expressed in this article are the authors' own, and do not necessarily represent the opinions of the Office of Technology Assessment, the Technology Assessment Board, or members of the U.S. Congress.

2. Here we are distinguishing between what we have called "scientific research," which is directly concerned with interpreting historic and prehistoric material culture, and "preservation research," which may prepare the foundation for scientific research, as well as lead to better preservation of cultural resources.

3. Regulations are found at 43 C.F.R. Part 7 - Department of the Interior; 36 C.F.R. Part 296 - Department of Agriculture; 18 C.F.R. Part 1312 - Tennessee Valley Authority; and 32 C.F.R. Part 229 - Department of Defense.

4. As applied to Turkey Pen Ruin, it is also totally inaccurate, as the Hyde Exploring Expedition (HEE) dug very little in Turkey Pen Ruin. By the time the HEE reached there, the site had been extensively dug by McLoyd and Graham.

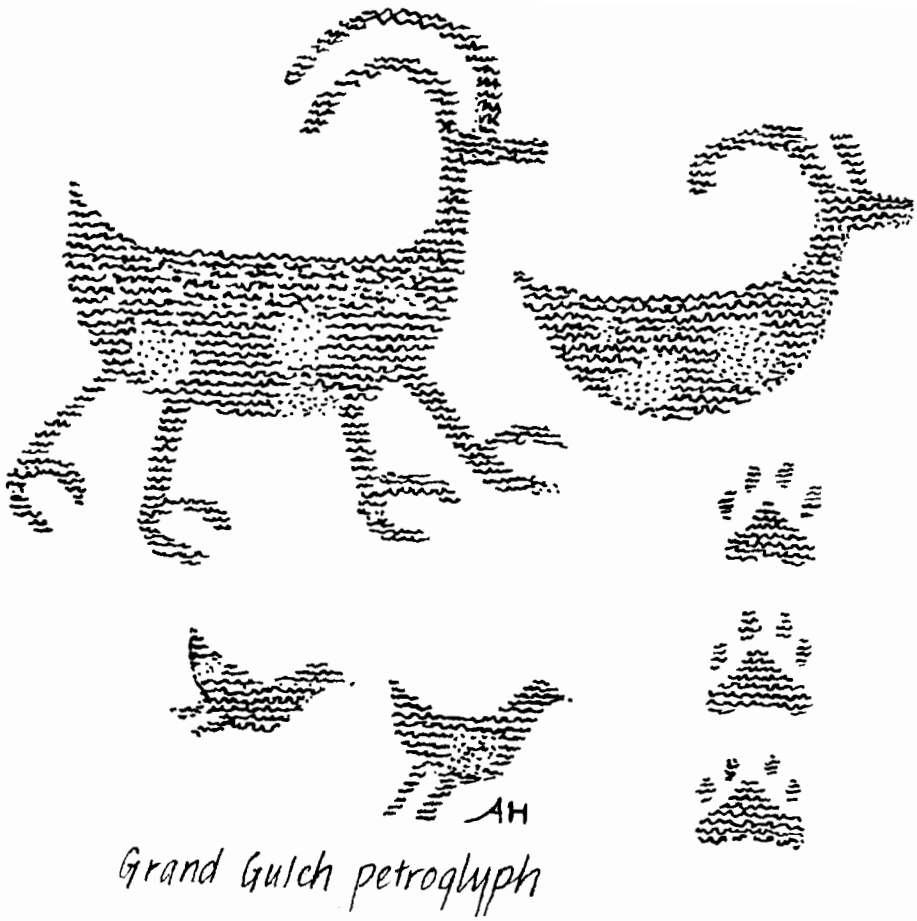


Figure 16.0 Mountain sheep, birds and paw prints petroglyph in Grand Gulch (Drawing by Ann Hayes)

APPENDIX A

Research Agreement with College of Eastern Utah

RESEARCH AGREEMENT

This contract is entered into between Julia M. Johnson, hereinafter referred to as the Donor, and the College of Eastern Utah, White Mesa Institute, an institution of higher education in the state of Utah, located at Blanding, Utah 84511.

Whereas the Donor desires research services in accordance with the scope of work outlined within this agreement, and

Whereas the performance of such research is consistent, compatible and beneficial to the academic role and mission of the College as an institution of higher education and, in consideration of the mutual premises and covenants contained herein, the parties hereto agree as follows:

I. Scope of the Work

Fred Blackburn, the principal investigator, agrees to perform for the Donor the research activities described in Attachment A hereto, under the direction and supervision of Dr. Lewis K. Shumway and Mr. Cleal Bradford.

II. Contract Period

This contract shall become effective in February, 1987, pending acceptance by the American Museum of Natural History. It shall be completed within one year, unless subsequent time extension, supplement, addition, continuation or renewal is mutually agreed upon in writing between the parties.

III. Compensation and Creation of Fund

The Donor agrees to pay the college for services performed under this agreement in the amount of $6,500.00 in accordance with the budget itemized in Attachment B.

The money will be put in an interest bearing account in which interest earned will be deposited into the fund account. If possible, the account will bear the name The Wetherill Fund.

IV. Tax Deduction Status

The Donor shall receive acknowledgement of this contract by December 31, 1986. Such acknowledgement shall indicate tax status of the College.

V. Reporting Requirements

An expense record will be kept detailing expenses. The funds are to be administered by the Rules and Regulations of the College of Eastern Utah. On a quarterly basis the donor shall receive, (1) from the finance office, a copy of the expenses incurred by the project, and (2) a report by Fred Blackburn showing progress of the research as outline in the Scope of the Work (Attachment A). At the completion of the contract period, the donor shall receive a final report.

VI. The Wetherill Fund

At the completion of the project, excess money in the Wetherill Fund will remain in the account for use in compiling and writing the

final report of the project. It will also be used in efforts to procure, maintain, and sustain some or all of the Wetherill collection for exhibit on a loan basis in either the Mesa Verde or The Edge of the Cedars Museum, or both.

VII. Further Generation of Funds or Donations

Funds generated from publications, photographs, photographic exhibits, as well as unforeseen profits and further donations shall become a part of the Wetherill Fund.

VIII. Equipment

All necessary photographic equipment purchased for use by Robert Powell to meet the needs of this project will become his property.

IX. Free Access by Public Domain

The photographic transparencies and information resulting from this project will be made available to the public domain through the College of Eastern Utah. The College will be responsible for properly housing the documents and photographs.

X. Credits

Other people or organizations using the transparencies, information from this research, or exhibiting all or part of the collection will give credit to the principal investigator, Fred Blackburn, the photographer, Robert Powell, and the donor of funds supporting the project, Julia M. Johnson. Credit will also be given those donors who, as yet, have not committed themselves.

This donation is being made in hopes that it will be the beginning of a major project. The goal of this project is to produce a publication documenting the most significant of the Wetherill artifacts. This publication, along with photographs of the artifacts will be an educational enrichment to the general public, specifically those who visit southeastern Utah. A long range goal would be to return, on a loan basis, some or all of the Wetherill collection of artifacts, now housed and stored in the American Museum of Natural History, to the state of Utah from whence they came. It is hoped that others will be encouraged to join in this effort. Further donations will be added to the Wetherill Fund for use as specified above.

In the event that the American Museum of Natural History rejects this project the money, $6,500.00, will be returned to the donor immediately.

This constitutes the entire agreement between the parties. The parties hereto have caused this contract to be executed as of the date set forth herein by their duly authorized representatives.

College of Eastern Utah, White Mesa Institute

Donor, Julia M. Johnson

ATTACHMENT A

Scope of the Work

1. To contact individuals, museums and organizations to discover any written documentation of artifacts or trips involving Grand Gulch, and create a library of written materials and photographs to be stored by the White Mesa Institute.
2. Write a research text that focuses on burial assemblages from Grand Gulch and specifically discusses work at the Green Mask site in Grand Gulch.
3. To produce high quality photographs of (a) The Grand Gulch Anasazi artifacts from burial assemblages stored at the American Museum of Natural History and the Museum of the American Indian–Heye Foundation in New York City, and (b) the sites from which these artifacts were taken about 90 years ago, concentrating initially on the Green Mask site.
4. Produce an educational exhibit in cooperation with the Utah Endowment for the Humanities, concentrating on the Green Mask site, but expanding by using artifact assemblages and old photographs. This program will also have an educational pamphlet as well.

APPENDIX B

Advisor's Contractual Agreement

CONTRACTUAL AGREEMENT

Wetherill Project, Working Board of Directors

Purpose

The purpose of this Working Board is to serve as an information gathering group. We will be working together to create a data library for future research programs in Grand Gulch. Hopefully, we will find the links to the missing notes and collections now available to us. Portions of what you discover will be used in the initial project report.

In forming a Working Board, we are recognizing the need to utilize the talent and excitement of all of you who have expressed a willingness to volunteer your time and expertise. We also recognize the need for coordination to maintain the consistency and high quality a project of this kind demands. Without this, the project will lack credibility.

Upon signing this agreement, you are agreeing to the following conditions:

1. Fred Blackburn will be the central coordinator.
2. All information gathered will be kept **confidential** among the advisory group. (We already have been approached by individuals with suspect motives for burial information, sensitive book information, etc. [Ann Phillips, be especially careful with the accessions book.])
3. Before arriving on the doorstep of a museum, of an organization, or before an individual, I, Julia M. Johnson, will, as a representative of the Wetherill research Project:
   a. First call to establish recognition, a date and time for an appointment;
   b. Follow up with a letter on White Mesa Institute letterhead. (This should be typed in a business-like fashion. Nothing hand written.) Enclose a copy of the research proposal **only** if they require it;
   c. Keep a record of my expenses and time that I have donated. This will be for use as an in-kind contribution possibly to be matched by future grants.
4. Upon arriving at my assigned source of information, I will attempt to collect any and all information or photographs available and pertaining to:
   a. Grand Gulch Expeditions;
   b. Richard Wetherill and his brothers;
   c. McLoyd and Graham.

   Note: Make arrangements to duplicate photographs. Collect more information than needed. Let's be thorough.
5. I will be sensitive to the fact that people are going out of their way for us. I will establish a good personal contact in order for us to continue working with them by

correspondence. I will encourage them to notify us of new findings pertaining to our project.

6. If I want to be reimbursed, I will forward, on a quarterly basis, an invoice to Fred Blackburn for xeroxing or duplicating of materials.
7. I will follow all leads or put them back into the pool of work needed to be done.

We will be tracking our accomplishments and giving you more challenges.

I agree to abide by these terms:

(Signature of Advisor)

(Date)

(List of Responsibilities)

APPENDIX C

Goals, Objectives and Methods of the Grand Gulch Project
January 31, 1988

Attachment

A. Goal

1. Establish and curate a record of historical and educational information to accompany a photographic exhibit relating to archaeological burial associations which took place in late 1800–1900 in the Grand Gulch area of Southeastern Utah. These records to be available to the public domain housed in the Edge of Cedars Museum and College of Eastern Utah, in Blanding, Utah.
2. Create a traveling educational exhibit fashioned after the permanent one at the Edge of Cedars Museum in Blanding, Utah.
3. Develop a symposium using data gathered as a base. This to be held at Edge of Cedars State Park in Blanding. Utah. Dates to coincide with the 100th anniversary of recorded explorations in Grand Gulch and the possible naming of Basketmakers at that time. (1990)

B. Objectives

1. Locate literature, photos, maps, museum records, sales transactions, descendants of early explorers and archaeologists, unpublished field notes or diaries, plus any other information pertinent to Grand Gulch and Southeastern Utah.
2. Re-establish artifact provenience at their original locations within Grand Gulch.
3. Locate artifacts in their present "repository" or by or through association within the available records in order to correlate artifacts to physical locations where they were found within Grand Gulch.
4. Photograph selected artifacts at their current "repository", their origination point, and their canyon setting.

C. Methodology

1. Visit museums, archives and individuals to accumulate copies of literature, reports, maps, photographs, oral interviews or other information pertaining to expeditions, explorations or excavations completed in Grand Gulch/Southeastern Utah.
2. Photograph and curate selected artifacts as well as copy historical photographs from present collections.
3. Photograph related physical sites, excavations or discoveries in Southeastern Utah with emphasis on Grand Gulch.
4. Complete several week-long expeditions to check past data from field work and record signatures, rock art, or other data pertinent to the project for revisions and additions to the project.

APPENDIX D

Project Definition Questionnaire

1. What are your personal reasons for being involved in the project?
2. What do you perceive as our objective?
3. How long do you perceive that it will take to reach that objective?
4. Are you prepared to participate in the project for that length of time?
5. If so, what part do you wish to play in the project? Be specific.
6. Why do we want a grant? Is there a need for what we are doing? We need to solve a problem, fill a need, or address an issue. What is it?
7. Is an exhibit a reasonable objective? Where might it be located? Why?
8. What do you perceive an exhibit to include?
9. Who will benefit from having a central repository of information about Grand Gulch?
10. Who will benefit from an exhibit, either permanent or traveling?
11. What disciplines are involved in what we are doing? (i.e., archaeology, anthropology, ethnology, history, education, preservation) Be specific and give evidence as to how the project would contribute to which disciplines.
12. Who are we? This is credibility needed for a proposal, not only credibility of our board members, but of the institutions we are going to work through. (White Mesa Institute–include board members; College of Eastern Utah–include board members; University of Utah–include board members; Wetherill–Grand Gulch board members.)
13. How will this project promote cooperative efforts among institutions and organizations?
14. Will the project improve knowledge, performance and professional skills of those who work with historical records? How?
15. Are we salvaging or saving from imminent destruction records of undoubted historic value? How?
16. Is this a survey and accessioning project? If so, in what way?
17. Is this a reproduction project? How?
18. Are we creating a record not before available for general scholarly as well as public use? How? Where should it be located?
19. Is what we are doing at all related to archival techniques? How?
20. Will we specifically be able to engage the public in a greater appreciation and understanding of the humanities? How?
21. Are the documents and artifacts we have located directly related to the study of American history? How?
22. Your comments:

APPENDIX E

Wetherill–Grand Gulch Advisory Committee

ADVISORY COMMITTEE MEMBERS

Sponsoring Institution
College of Eastern Utah
San Juan Campus
Blanding, Utah

L. Kay Shumway, Ph.D., Associate Dean

Cleal Bradford, Director
Four Corners Study Center and San Juan Foundation

Edge of the Cedars State Museum
Blanding, Utah

Stephen J. Olsen, Park Manager

Winston Hurst, Curator, Archaeologist

Bureau of Land Management
Monticello, Utah

Edward Scherick, Area Manager

Dale Davidson, Archaeologist

College of Eastern Utah Prehistoric Museum
Price, Utah

Don Burge, Director

Pamela Miller, Museum Archaeologist

State of Utah

David Madsen, State Archaeologist

University of Utah
Salt Lake City, Utah

Don Hague, Director
Utah Museum of Natural History

Bureau of Land Management
Anasazi Heritage Center
Dolores, Colorado

Victoria Atkins, Archaeologist

APPENDIX F

Text of the Bureau of Land Management's National Award for Exemplary Voluntary Service Contribution, Presented April 26, 1990

Dear Ms. Johnson:

We are pleased to present to your Wetherill–Grand Gulch Project participants the Bureau of Land Management's (BLM) national award for exemplary voluntary service contributions to conservation and management of cultural resources of the Nation's public lands. This award acknowledges, with our great appreciation, the accomplishments that you and other Wetherill–Grand Gulch Project participants have provided over the last several years to interpretation and protection of archaeology on the public lands of southeastern Utah.

The Wetherill–Grand Gulch project was started by yourself and a group of avocational archaeologist who noticed historic signatures while hiking Grand Gulch. You became historians and archaeological detectives, unraveling trails to information on the public lands hundreds of years old. Your efforts focused on the archaeological resources of the BLM Grand Gulch Primitive Area, which is recognized worldwide for its importance to the science and history of archaeology. The artifacts you rediscovered are indispensable to understanding the archaeology of the Grand Gulch; these artifacts were lost to students of southwestern archaeology almost from the time they were first excavated. You and other Wetherill–Grand Gulch participants have succeeded in relocating these treasures and more, including photographs, journals, catalogs and other important clues that link artifacts to specific sites in the Grand Gulch in a process dubbed "Reverse Archaeology." Your group accomplished all of this under your own direction and with your own financing. Project personnel have traveled as far as New York City and explored family archives that are now being reviewed by researchers for the first time. So far, these efforts resulted in a collection of over 3,000 pages, 200 historic photographs, well over 100 documented signatures and a photo catalog of over 1,000 artifacts from the Grand Gulch.

In the three and one-half years since the Project began, you and your co-workers have contributed $70,000 and 8,000 hours to reverse archaeology on the archaeological sites of southeastern Utah.

I wish my schedule allowed me to celebrate your project's finale at the symposium titled "Basketmaker: Past Present and Future" to be held at the Edge of the Cedars Museum in Blanding Utah. During this weekend, you and other project participants will turn over all the material they have collected to the Edge of the Cedars Museum for permanent storage and study.

On behalf of all of us in the BLM, thank you for taking pride in America and for making a difference in advancing our mission and ensuring that the Nation's public lands and its resources remain a treasured heritage for all our citizens. Many thanks.

Cy Jamison, Director

APPENDIX G

On Methods of Archaeological Research in America

Professor F. W. Putnam
(Abstract of a lecture delivered before the University Archaeological Society, December 16, 1885.)

Mr. Putnam first called attention to the importance of understanding the archaeology of America in arriving at a knowledge of the early conditions of man and the beginnings of art, as it is here that man can be traced from a period before the glacial epoch through all his early stages, and from savagery through barbarism to the beginning of civilization.

During this long period in America man moved onward and developed comprehensive social organizations, and made great advances in all primitive arts. Here is material in abundance from which to study the development of his arts up to a certain point. On making such a study much is found which leads to an understanding of the natural development of the arts among other races, and while many phases are found to be common to humanity, resemblances and identities are observed which have a deep ethnological significance and can be classed no longer as mere coincidences. Such a study also leads to conclusions which indicate that the ancient Americans were not the homogeneous people generally supposed.

After allusions to the importance of thorough work in the field and the necessity of following perfect scientific methods in a study of the antiquities of the country, in order that all facts can be properly correlated, he stated that here, as elsewhere, archaeology as a science is of late origin; therefore, only work accomplished in recent years, except in a few instances, should be considered in drawing deductions. He said that the day had passed when a simple collector of relics of the past could be called an archaeologist. To the general collector of "relics" in this country everything was Indian. To such a one a piece of pottery was an Indian vessel and nothing more. From collections made in that spirit nothing can be learned. The time has come when we must know the exact conditions under which every object placed in our museums of archaeology was obtained and its association with other things, in order to draw conclusions of any scientific value.

He then described the methods which should be followed in explorations, in order that everything found, from a chip of stone to an elaborate piece of carving; from a mass of clay to a perfect vase or a terracotta figure; from a splinter of bone to an implement made of that material; from a shell to a carving on a piece of shell; from nuggets of copper and other native metals to beautifully-worked ornaments; together with implements and ornaments of various materials, broken or whole, remains of charred fibres, matting and cloth; and seeds, nuts, corn-cobs and bones of animals, and one and all shall show their associations and tell their story as a whole.

With these should be preserved all human remains, from fragment of bones to perfect skeletons. Skulls are unquestionably the most important, but other parts of the skeleton should be studied as well. All these objects should be studied comparatively; their associations should never be overlooked, and

individually and collectively, they should be compared with similar groups of objects from near and remote places. Deductions of importance can be drawn only from material obtained by such methods.

He then gave an account of the explorations of mounds, burial places, and village sites in the Ohio valley which had been conducted, with the assistance of Dr. C. L. Metz, under his person direction for the Peabody Museum of American Archaeology and Ethnology at Cambridge, illustrating his remarks by diagrams and photographs. Trenching and slicing, he said, could be used to express in general terms the method followed in field work. For instance, in exploring a mound a trench is first dug at the base of the mound. A slight vertical wall is made thereby showing the contact of the edge of the mound with the earth upon which it rests. Sometimes this trench has to be dug to the depth of several feet in order to find the bottom of the mound, as in cases where the mound is erected in an excavated area. This wall is the first section of the exploration, and its outline should be drawn or photographed and its measurements noted. For the latter purpose it is best to stretch two strings over the mound, one north and south and the other east and west, and to take all measurements from those. After this first section is made, the work is carried on by slicing; or cutting down about a foot at a time, always keeping a vertical wall in front, the whole width of the mound. Each slice thus made is a section, and whenever the slightest change in the structure is noticed or any object found, that section should be drawn or photographed, and measured as at first, and the exact position noted of any object, ash bed, or change in the character of the structure of the mound. This method is continued until the whole mound has been dug away, and a thorough knowledge of its structure and contents obtained. Such work of course necessitates great labor and is expensive in proportion, but only such a method will give full results; all other methods are partial and consequently of little or no value. In fact unless such work is to be thoroughly done it should not be attempted.

In exploring village sites a trench should be dug through the accumulated leaf mould in order to find the outlines of habitations, and obtain the position of fire places, refuse-piles, and other signs of occupation. The discoveries thus made should be followed by the removal of surface soil and trenching about the spots. In no case should an excavation be made from the surface of a mound, site of habitation, burnt space, or refuse-pile. From the moment this is done all is in confusion, and much is destroyed by being broken with pick or spade. By trenching and slicing this is avoided, and the sequence of materials, as well as the outlines of habitation, fire-place or refuse-pile can be determined and correctly drawn to scale. In exploring a cemetery a similar method should be followed. A trench should be dug along the edge of the cemetery. Then the area should be marked off on blocks of fifty feet square in order to facilitate making a plan drawn to scale. A "block" should then be dug over to the necessary depth, beginning at the trench and throwing the earth behind, always keeping a vertical section in front, the full width of the block. As each skeleton is reached it is seen in the section. Its position and surroundings should be noted. Every object buried with it will be seen in place, as the earth is removed with a trowel and small hand broom from over and among the bones and objects. In this way the speaker had caused to be excavated burial places, acres in extent, in the Ohio valley, from which most important results had been obtained.

Mr. Putnam concluded his address with an appeal to all archaeologists to follow the same principles which are followed in other departments of science and not be satisfied with partial results, but by conscientious and thorough work to aid in the important undertaking of discovering the origin and connections of the ancient Americans, and their distribution and routes of migration over the continent.

Appendix H Collections Made in Southeastern Utah and Southwestern Colorado, 1888 – 1898

Participants, Expedition or Catalog Name	Date of Expedition	Location of Expedition	Verification of Expedition	Gift, Purchase or Funding	Exhibited at World's Columbian Exposition, 1893	Collection Name & Present Location*
1. "Ancient Aztec Relics" Al Wetherill, C. McLoyd, J.H. Graham, L. Patrick	1888–1889	Mesa Verde region	Letters; Catalog; Signatures	Purchased by Colorado Historical Society	No	"First Wetherill Collection" Colorado Historical Society
2. "A Unique Collection of Cliff Dweller Relics" Charles McLoyd, C.C. Graham	1890–1891	Grand Gulch	Journal; C.H. Green Catalog; Signatures	Purchase by Rev. C.H. Green, 1891	Near Anthropological Building	Purchased from C.H. Green in 1894 by Field Museum, Accession # 121; Price $2,000; "Green Collection"
3. Charles McLoyd, C.H. Green, D.W. Ayres	1891	Grand Gulch	Signatures; Photographs; Catalog	Funded by Rev. C.H. Green	Near Anthropological Building	"Green Collection" combined with 2. McLoyd and Graham Collection, Field Museum, Accession #121 Some items sold to T.R. Roddy 1902; others wasted.
4. Charles McLoyd and J.H. (Howard) Graham	1892	Grand Gulch, White, Red & Lake Canyons, Colorado River	Signatures; Catalog	Purchased by Koontz of Aztec during 1894 Sold to Fred & B.T.B. Hyde	No	"Kunz Collection," American Museum of Natural History, Gift of Fred and B.T.B. Hyde, 1895 Portion sold to George Heye, 1916 by B.T.B. Hyde; "Thea Heye Collection"; Museum of the American Indian

* For museum locations, see end of table.

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Collections Made in Southeastern Utah and Southwestern Colorado, 1888 – 1898 continued

Participants, Expedition or Catalog Name	Date of Expedition	Location of Expedition	Verification of Expedition	Gift, Purchase or Funding	Exhibited at World's Columbian Exposition, 1893	Collection Name & Present Location*
5. Charles McLoyd and J.H. Graham	1892	Lake, Red, Lost, Deep & Colorado Canyons	Signatures; Catalog	Purchased by C.D. Hazzard late in 1892	Battle Mountain Anthropological Building	Loan to University Museum, University of Pennsylvania by C.D. Hazzard, 1895 "Hazzard-Hearst Collection", 1896, purchase by Phoebe Hearst for University Museum Hearst retained 250 items and later gave them to Lowie Museum of Anthropology, Accessoion #11
6. Wetherill Exploring Party C.C. Mason, Richard, Alfred, John & Clayton Wetherill	1889	Mesa Verde area, Mancos, Johnson, Acowitz, & Navajo Canyons	Catalog; Letters; Signatures	On consignment to H.J. Smith for Minnesota Exposition, 1891; Purchased by H.J. Smith or C.D. Hazzard, late 1892	Battle Mountain & Anthropological Building	"Hazzard-Hearst Collection" loaned to University Museum, 1895 Purchased for University Museum by Phoebe Hearst, 1896 Part of collection retained for Lowie Museum, Accession #11 Called "Second Wetherill Collection" by Colorado Historical Society
7. Gustav Nordenskiold & Wetherill Family	1891	Mesa Verde area	Notes; Records; Photographs	Financed by Nordenskiold Family	Anthrolopogical Building: plans, photographs & models only	"Nordenskiold Collection" in the Kansallismuseo Called "Third Wetherill Collection" by Colorado Historical Society
8. A.F. Willmarth, D.W. Ayres & Richard Wetherill	1892	Mesa Verde area	Catalog; Photographs; Letters	Commissioned by State of Colorado	Anthropological Building	Called "Fourth Wetherill Collection" by Colorado Historical Society

* For museum locations, see end of table.

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Collections Made in Southeastern Utah and Southwestern Colorado, 1888 – 1898 continued

Participants, Expedition or Catalog Name	Date of Expedition	Location of Expedition	Verification of Expedition	Gift, Purchase or Funding	Exhibited at World's Columbian Exposition, 1893	Collection Name & Present Location*
9. Excavated, given to or purchased by Platt Lyman	before 1893	South-eastern Utah	Museum Catalog; Article	Loaned to Dan Maguire for World's Columbian Exposition	Utah Building	"Platt Lyman Collection" sold to Deseret Museum, 1894, L.D.S. Museum of Church History and Art
10. Warren K. Moorehead Illustrated American Exploring Expedition	1892	Upper Colorado & San Juan Rivers & smaller tributaries	Article; Letters; Photographs; Signatures	Funded by Smithsonian, Peabody Museum, & American Museum of Natural History	Anthropological Building (?)	"Moorehead Collection" gift to Field Museum, Accession #498
11. Peabody Museum Expedition, Conrad M. Viets, Director	1889	Near Cortez, Yellow Jacket Springs	Letters; Field Record;	Expedition, Peabody Museum, Harvard	No	"Viets Collection" 89-10 Peabody Museum
12. Peabody Museum Expedition, Conrad M Viets, Director	1890	Seven miles east of Cortez	Letters; Field Notes;	Expedition, Peabody Museum, Harvard	No	"Viets Collection" 90-30 Peabody Museum
13. Peabody Museum Expedition, Conrad M Viets, Director	1891		Letters; Field Notes;	Expedition, Peabody Museum, Harvard	No	"Viets Collection" 91-24 Peabody Museum

* For museum locations, see end of table.

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Collections Made in Southeastern Utah and Southwestern Colorado, 1888 – 1898 continued

Participants, Expedition or Catalog Name	Date of Expedition	Location of Expedition	Verification of Expedition	Gift, Purchase or Funding	Exhibited at World's Columbian Exposition, 1893	Collection Name & Present Location*
14. Conrad M. Viets	1892	Near Cortez		Personal Collection sold to C.D. Hazzard	Battle Mountain & Anthropological Building	Incorporated into "Hazzard-Hearst Collection" University Museum, University of Pennsylvania Portion of collection at Lowie Museum, Accession #11
15. Hyde Exploring Expedition, Richard Wetherill	1893–1894	Cottonwood Canyon, Grand Gulch, Allen, Butler, Red, White & Step Canyons	Field Records; Photographs; Letters; Signatures	Expedition, funded by Fred & B.T.B. Hyde for $2,500	No	"First Wetherill Collection" Gift of Fred and B.T.B. Hyde, American Museum of Natural, History, Accession #1895-34 Portion sold to George Heye, 1916 "Thea Heye Collection:" Museum of the American Indian
16. Whitmore-Bowles Expedition, Richard Wetherill	1896–1897	Hammond, Cottonwood, Battle & Butler Canyons & Grand Gulch	Field Records; Photographs; Letters; Signatures	Expedition, funded by Whitmore & Bowles, sold to B.T.B. Hyde for $3,000	No	"Second Wetherill Collection" Gift of B.T.B. Hyde to American Museum of Natural History, Accession #1897-45 Portion sold to George Heye, 1916 "Thea Heye Collection:" Museum of the American Indian
17. Charles B. Lang	1893–1894	Caves of southeast Utah & vicinity	Article; Letter		No	"Lang Collection" sold to Deseret Museum before August 1894 L.D.S. Museum of Church History and Art
18. Charles B. Lang	1894–1895	Hammond, Cottonwood, Battle & Butler Canyons & Grand Gulch	Field Notes; Letter	Acquired by M. Ryerson & loaned to the Walker Museum Chicago Gift to Field Museum	No	"Ryerson-Lang Collection" Field Museum, Accession #1463

* For museum locations, see end of table.

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Collections Made in Southeastern Utah and Southwestern Colorado, 1888 – 1898 continued

Participants, Expedition or Catalog Name	Date of Expedition	Location of Expedition	Verification of Expedition	Gift, Purchase or Funding	Exhibited at World's Columbian Exposition, 1893	Collection Name & Present Location*
19. Charles B. Lang	1897–1898	Canyon de, Chelle, Cottonwood & Montezuma Canyons & Comb Wash	Letter; Field Notes	In possession of Mr. Stengel of Salt Lake City, Utah (about 1900)	No	Unknown
20. Charles B. Lang	1898–1899		Letter	In Possession of Mr. Bixby of of Salt Lake City, Utah (about 1900)	No	Unknown
21. T.M. Prudden	1894–1902	San Juan Watershed,	Field Notes; Letters; Articles; Photographs	Collection assembled from gifts, purchases and excavations	No	"T.M. Prudden Collection" Peabody Museum of Natural History

*Museum Locations:

Name	Institutional Association	Location
American Museum of Natural History		New York City, New York
Field Museum		Chicago, Illinois
Kansallismueo		Helsinki, Finland
L.D.S. Museum of Church History and Art		Salt Lake City, Utah
Lowie Museum of Anthropology	University of California, Berkeley	Berkeley, California
Museum of the American Indian		New York City, New York
Peabody Museum	Harvard University	Cambrige, Massachusetts
Peabody Museum of Natural History	Yale University	New Haven, Connecticut
University Museum	University of Pennsylvania	Philadelphia, Pennsylvania

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ndb *2d Wetherill Collection 1897* (Nels C. Nelson's handwritten title). Untitled, handwritten (probably by Marietta Palmer Wetherill) catalogue of collections from the Whitmore–Bowles Expedition of 1897. American Museum of Natural History Archives No. 1897–45, New York City. Copy on file at the Wetherill–Grand Gulch Archives, Edge of the Cedars State Park, Blanding, Utah.

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Anonymous

ndcd The Expedition of 1896–1897. Unsigned handwritten account with accompanying maps, probably written by Richard Wetherill.

nde *Catalogue and Description of a Very Large Collection of Prehistoric Relics, Obtained in Cliff Houses and Caves in Southeastern Utah*. (Catalog of the Kunz Collection, probably written by Charles McLoyd.) Archives of the American Museum of Natural History, New York. Copy on file at the Wetherill–Grand Gulch Project Archives, Edge of the Cedars State Park, Blanding, Utah.

nddf Untitled ledger book and visitor registry for the Alamo Ranch. Understood to have been kept by Benjamin Kite Wetherill. In the possession of Tom and Wren Wetherill, Aztec, New Mexico.

ndeg Transcription of the 1896–1897, unsigned handwritten account of Richard Wetherill, probably compiled by Nels C. Nelson of the American Museum of Natural History.

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