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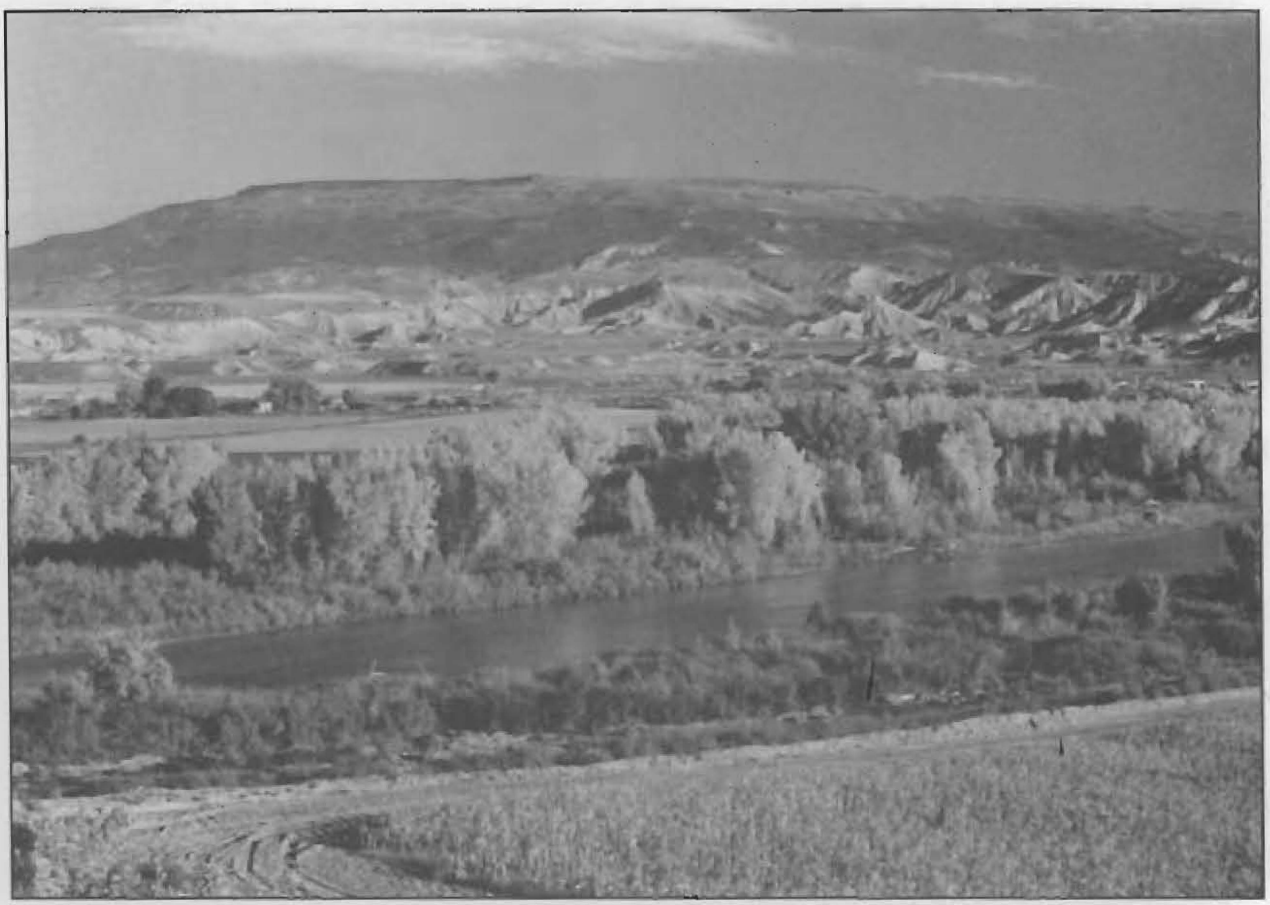
EPHEMERAL ARCHAEOLOGY ON THE MOUNTAIN OF THE SORREL DEER

Steven G. Baker

CULTURAL RESOURCE SERIES NUMBER 32



EPHEMERAL ARCHAEOLOGY ON THE MOUNTAIN OF THE SORREL DEER, DELTA COUNTY, COLORADO

by
Steven G. Baker

Colorado State Office
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U.S. Department of the Interior

Denver, Colorado

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EPHEMERAL ARCHAEOLOGY ON THE MOUNTAIN OF THE SORREL DEER, DELTA COUNTY, COLORADO

by

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Cover Photo: The Grand Mesa looking north across the Gunnison River Bottoms, near Delta, Colorado. The Spanish explorers of the 18th Century referred to Grand Mesa as La Sierra del Venado Alazan or The Mountain of the Sorrel Deer or Elk. Photo courtesy of Ben Walker, Delta, Colorado.

Series Production: Frederic J. Athearn

FOREWORD

Small, nondescript, ephemeral archaeological sites are often ignored, surficially examined, and judged insignificant based upon a paucity of surface evidence. "Ephemeral Archaeology on the Mountain of the Sorrel Deer, Delta County, Colorado", authored by Steven G. Baker, clearly demonstrates how such sites, if appropriately addressed, can be important in providing crucial information to regional prehistory.

In recent years the professional community has come to realize that the so-called proverbial "lithic scatter" can be extremely important and upon closer scrutiny can often provide valuable cultural and chronological information. These sites should not be just written off. The Bureau of Land Management operates under a policy of avoiding all sites when possible, even those sites perceived as insignificant.

This monograph is the culmination of ten years of study and cooperative teamwork between Colorado Westmoreland Inc. and their affiliated Orchard Valley Coal Mine, the Bureau of Land Management, and State Historic Preservation Office. This study culminated in the excavation of two sites. The Ridge Site (5DT771), a presumed game drive and kill locality, is considered a late Archaic or early Formative Stage site and is notable for the lithic assemblage associated with butchering. Excavations at The Roatcap Game Trail site (5DT271) included a Ute component consisting of a hearth and butchering area, a Formative Stage brush structure and hearth, and a possible transitional Archaic/Formative Stage component consisting of a use area with milling stones and hearth.

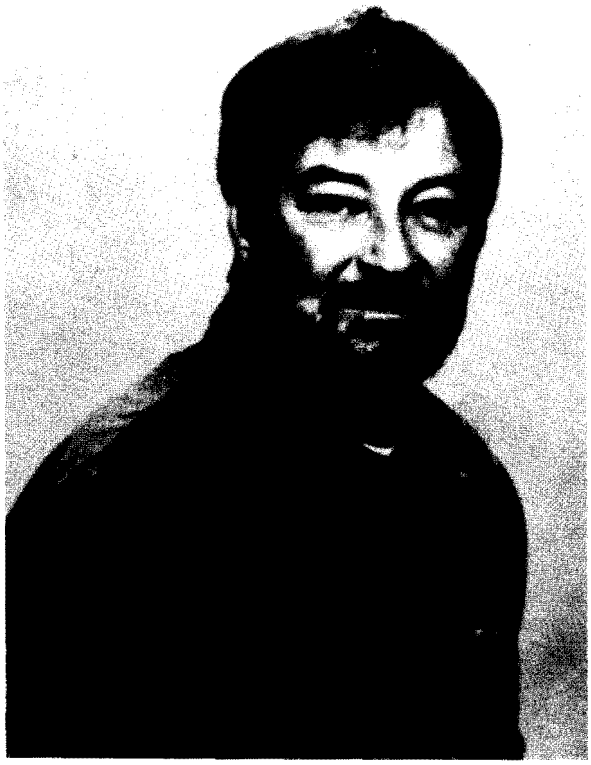
This monograph should prove to be a valuable resource in further studies in the region and Baker is commended for recognizing the value of the seemingly unimportant lithic scatter.

Richard E. Fike
Bureau of Land Management
Montrose District

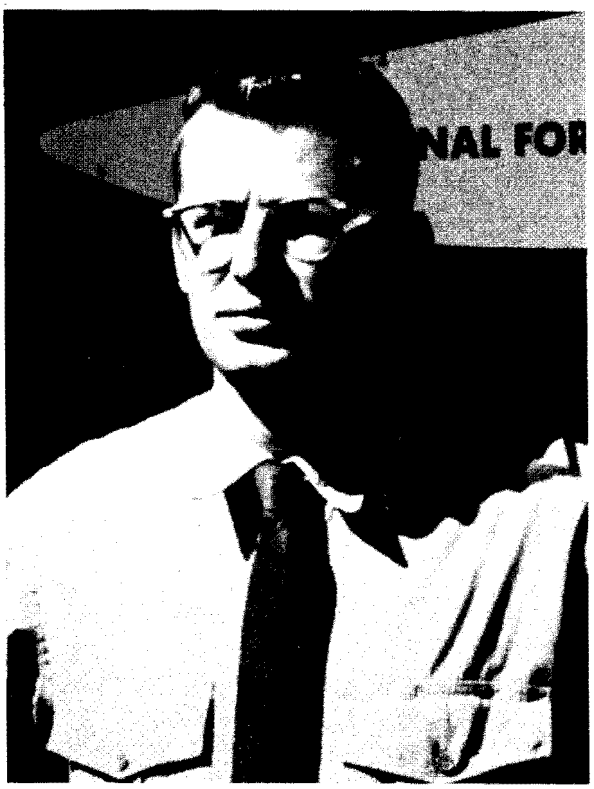
Dedication

This volume is very humbly dedicated to the memories of my friends J. S. (Steve) Sigstad (1939-1989) and Ronald J. (Ron) Schmitt (1937-1981) of the U.S. Forest Service. Steve served as Regional Archaeologist for the Rocky Mountain Region of the USDA Forest Service from 1976 until his death in 1989. Ron was Recreation Staff Officer on the Grand Mesa, Uncompahgre and Gunnison National Forests from 1974 to 1977 and was in charge of managing cultural resources prior to the time when the forests obtained their own professional archaeological staff. My own early archaeological work in Western Colorado brought me into a close working relationship with these two men and my first local commercial efforts were conducted under their sponsorship. Although these gentlemen both crossed over the Great Divide on an early and untimely schedule, they left behind them a legacy of congeniality, professionalism and dedication in promoting the conservation of Western Colorado's archaeological resources, including those of the Grand Mesa. Together, these two men did much to shape the cultural resource management profession in Colorado and with it, the livelihoods of many of today's practicing archaeologists. This was not always a comfortable or popular mission for these gentlemen. We should all be grateful to them.

Steve Baker
Montrose, Colorado
July, 1991



Steve Sigstad
(1939-1989)



Ron Schmitt
(1937-1981)

EPHEMERAL ARCHAEOLOGY ON THE MOUNTAIN OF THE SORREL DEER, DELTA COUNTY, COLORADO

ABSTRACT

By
Steven G. Baker
CENTURIES RESEARCH, INC.

Ten years of intermittent cultural resource studies on behalf of Colorado Westmoreland Inc.'s Orchard Valley Mine are summarized in this volume. The total study area encompasses approximately 15,000 acres of rugged topography above the North Fork of the Gunnison River on the southeast flank of Grand Mesa in West-Central Colorado. This is adjacent to the route traveled by Escalante in 1776 when he reported on Sabuagana Utes as he ascended La Sierra del Venado Alazan (The Mountain of the Roan or Sorrel Deer), now known as Grand Mesa. The study area is focused on a wide zone of oakbrush on the ecotone between the Transitional and Montane zones of the mesa. The prehistoric settlement system on this ecotone appears to have consisted of seasonal individual family households. These clustered along game trails near water, apparently at the margins of this broad band of oakbrush. The ten year study program resulted in the recording of 10 aboriginal sites and 9 isolated finds as well as a quantity of historic Euro-American resources reported on elsewhere. In addition, 1986 witnessed excavation programs at two sites. The first was The Ridge Site (5DT771), an undated game drive and kill point. This component proved notable only in its presence and in the lithic assemblage from the butchering location. This assemblage consisted mostly of small utilized flakes.

Excavations at The Roatcap Game Trail site (5DT271) were substantial and isolated three spatially and stratigraphically discrete aboriginal components. The first, Component 1, was the most productive and consisted of the remains of a historic Ute household. This yielded the probable remains of an oak brush shelter along with a slab- lined hearth surrounded by discrete butchering areas where parts of nine or more elk, deer and bison were processed. The component is believed to represent a limited seasonal occupation by a walking Sabuagana Ute household which was participating, as part of a deme cluster, in procurement activities which included an emphasis on hunting. The faunal assemblage evidences a consistent pattern of meat distribution that is thought to have been kinship-based. The component's living surface lay just beneath the sod and a comprehensive assemblage of utilized flake and other butchering tools from the female activity kit was recovered from this surface along with other tools related to food processing and acquisition. These included Uncompahgre Brownware pottery and a Desert Side-Notched projectile point. Radiocarbon dating and dendrochronology bracketed this occupation within the later 18th and early 19th Centuries. The assemblage is notable because of its preservation, comprehensiveness, purity of functional and apparent ethnic association, and its placement within a suggested chronology of local historic Ute culture change. This late summer/fall occupation is

believed to be a wickiup-focused seasonal residential base from late in the Early Contact Period prior to extensive disruption of the contact/traditional culture system. Such disruptions were ushered in during the Utes' Phase of Conflict and Competition which became most serious in this region in the 19th Century.

Component 2 contained the floor of a Formative Stage brush structure with a central fire hearth. It yielded a limited assemblage of heat-treated stone tools including a small, ovoid, corner-notched arrow point along with small, ovoid preforms presumably intended for production of similar points. A radiocarbon date of A.D. 760 ± 60 places this occupation squarely within the generalized BMIII Period, late within Irwin-Williams' Oshara Tradition, or within the Sagehen Phase of the Dolores chronology. At the local level, the occupation falls within Buckles' postulated Ironstone and Dry Creek Phases of the Uncompahgre Complex. The most likely associations for this component are believed to be with the still controversial "hogan builders" described by the Huschers, the Weimer Ranch site occupants in the San Miguel drainage, and perhaps with the Turner Look site occupants in Utah. It now appears that there may be some continuity in projectile point styles and the use of small, ovoid preforms among these assemblages. Component 2 is believed to be a seasonal residential base and is cautiously assigned a Formative Stage "Fremont-like" affiliation.

Component 3 was an eroded living area focused about two milling stones and a hearth filled with fire-cracked rock. The site elements and artifact assemblage seem to have close parallels with the En Medio and Trujillo Phases of the Oshara Tradition. The component yielded a poor radiocarbon date of A.D. 10 ± 410 which most likely places it at the interface of the Archaic and Formative Stages. The component is notable in its conformity to generalized early Basketmaker components as best synthesized by Irwin-Williams. Obsidian from the component derives from Cochiti on the Rio Grande in Southern New Mexico. Other elements in the lithic assemblage may also be exotic to the local area. A regional floresence in trading networks during the late Archaic is suspected in the lithics from this component but this is not demonstrated. The period of this occupation may have been marked by a warmer climate. The component is interpreted as a seasonal residential base for people who are suspected of having had some manner of association with areas further to the south.

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PREFACE

In 1776, the Dominguez-Escalante Expedition traveled northward from Santa Fe in an attempt to establish a trading route to Monterey on the California Coast. The expedition's route led it to the North Fork of the Gunnison which it followed along the south flank of Grand Mesa to the mouth of Hubbard Creek. There, the expedition turned north on August 31st. This part of the trek brought the Spaniards through a stony juniper grove and into the very deep valley of Hubbard Creek where they found themselves "breaking through dense thickets of dwarf oak". The expedition was then seeking the Sabuagana Band of the Ute Indians. The expedition's passage along the North Fork of the Gunnison took the travelers just below the high bluffs which tower above the North Fork Valley from this flank of Grand Mesa which Escalante knew as La Sierra del Venado Alazan or the Mountain of the Sorrel Deer. Escalante may not have even been able to see these towering bluffs as he traversed the heavy pinon forest of their lower slopes. Two hundred years later these bluffs, which loam high over present day Paonia, became the site of Colorado Westmoreland Inc.'s Orchard Valley Mine. This mine's workings now stand a prominent sentinel duty above the route of the Spanish Friars. Historical and archaeological studies associated with the planning and development of this mine produced one of the first substantial bodies of data regarding the history and prehistory of Grand Mesa. Study of an historic Ute site from about the time of the expedition came tantalizingly close to touching the historical archaeological fabric of the Fathers themselves.

This document comprises the final report on the data generated in relation to the Orchard Valley Mine. The data were accumulated over ten years of intermittent and disparate cultural resource management efforts undertaken by Centuries Research on behalf of Colorado Westmoreland. Until 1986, these efforts only included inventories associated with initial and ongoing mine planning and development. In 1986, however, during the emergency process of developing the new Orchard Valley West Portal so that the mine could re-open, Colorado Westmoreland experienced its first need for archaeological excavations. The 1986 excavation program subsequently helped to clarify my own understanding of portions of the local archaeology. This report presents my interpretations and summarizes all of the inventory and excavation results relative to the American Indian occupation of the project area. The results of historical and historical archaeological studies have been presented in earlier reports that are referenced in Chapter 1.

I have served as Principal Investigator for work at the Orchard Valley Mine since 1976. I directed the field work in that year and in 1984 and 1986. Various other programs were under the directorship of Centuries' staff members Laurie Webster, Steve Horvath, Tony Klesert and Jim Copeland. In earlier years Doug Scott, former Distict Archaeologist with the BLM in Montrose, played a prominent role in the permitting and review process for the work we performed for CWI.

My association with Colorado Westmoreland has personally been very rewarding to me, in that CWI's management philosophy has usually embodied a win/win philosophy toward the archaeology and in negotiations and development of contracts. I am grateful to Ron Stucki and Matt Sakurada of the Mine for their understanding of the issues and needs involved in a program of the type undertaken in 1986 particularly. Kathy Gordon Welt, Environmental Specialist at the mine, has been my contract supervisor for the past several years. During these years the cultural resource program began to mature and our understanding of the local history and prehistory came into focus. I wish to give Kathy special recognition for the understanding she has shown toward the archaeology and her skill in clearly representing CWI's position in all of our dealings.

The success of the 1986 excavation program was particularly dependent on Kathy's efforts in dealing with BLM, CRI, and her own management, as well as the needs of the archaeological resources themselves. The positive results of the archaeology program are herein believed to have been instrumental in the success of the emergency development of the Orchard Valley West Mine. It was opened on schedule largely because the archaeological program was thoughtfully handled by all in the face of the very real potential for delays posed by the Section 106 Process. In this regard, Centuries is proud to have been instrumental in getting this mine reopened. The very active participation of Max Witkind, Acting District Archaeologist for the BLM, was essential in the entire process. Max, together with Roberto Costales of the State BLM Office in Denver, are due much credit in the success of this program.

The 1986 field crew consisted of Centuries personnel as well as CWI coal miners. Doug Potter and Terry Welt are due special recognition for the enthusiasm and leadership they displayed as senior crew members in the excavations of sites 5DT271 and 771 as well as the 1986 inventory. Other Centuries crew members were Raymond and Clayton Ayer and David Hatfield. Gail Carroll of Centuries completed many of the field drawings as well as the illustrations for the report. Kathy Pegram and Suzanne Shanahan of Centuries typed the report. John Menke of CWI provided base maps for the site. I am grateful to these individuals.

Over the years, from New Brunswick, Canada to Paonia, Colorado, I have been privileged to have worked with crews of coal miners on various projects. I have found them to be among the finest pools of archaeological labor available and possibly surpassed only by lobster fishermen! The crews supplied by CWI were no exception, particularly once they were trained to measure production in terms other than tonnage. So, despite a slightly elevated number of "marks of discovery" on our artifacts, I wish to acknowledge the persons who indicated that they would be ready to go on another "dig" most anytime. My only complaint was that by the time I began to get them accustomed to this kind of work, our mission was over. I am, however, pleased to know that they are back mining coal. The crews from CWI's permanent work force included the following:

Kim Tribble	Mary Reilly	Doug Balderson	Mike Gaston
Ken Wilson	George Small	Pablo Rojo	John Cotten
Larry West	Pete Borich	Kathy McAlister	Jack Adams
Mike MacRobbie	J. Bob Davis	Pete Gonzales	
Gwen Goff	Dan Robinson	Alfred Garcia	

Archaeologist Ron Rood of Montrose completed the analysis of the bone from the historic Ute component. Meredith Matthews evaluated the floral remains and Linda Scott the pollen. Bill Robinson of the University of Arizona reported on the dendrochronology and John Montgomery of Eastern New Mexico University evaluated the obsidian. Murry Tamers of Beta Analytic completed the radiocarbon dating and David Hill of Las Cruces, New Mexico conducted petrographic analysis of the ceramics. I am grateful to these individuals for varying levels of comment. Ron Rood's work in particular brought him far enough into the project where his observations were particularly helpful. I wish to thank archaeologists Bill Buckles, Bruce Bradley, John Montgomery, and Alan Schroedl for sharing their thoughts on various regional prehistoric subjects with me. Professor Emeritus Omer Stewart of the University of Colorado has provided me with much material on the Utes from his files and was quite helpful in clarifying the Ute associations of Component 1 as well as encouraging my efforts in "Ute studies" generally. I am particularly grateful for his always willing assistance on questions concerning the Ute People. Archaeologists Gordon Tucker, formerly of Montrose, and Rich Fike, BLM District Archaeologist in Montrose, graciously read the entire manuscript and provided thoughtful and detailed critiques. Frank Eddy of the University of Colorado also commented on selected portions of the manuscript. I am very grateful for these productive efforts. Rick Athearn, of the Colorado State Office of the BLM, has consistently encouraged this publication. I thank him for his tenacity in keeping after me to get the editing done so that he could publish it.

In any archaeologists career, certain sites and environments will be remembered in comparison to much of the routine work load. In this regard, the field program at the Roatcap Game Trail Site was, in particular, one of the most positive excavation experiences I have had in the past 27 years of my archaeological efforts. The project was characterized by an excellent state of preservation, where one could actually feel bones in the sod underfoot; a lovely mountain location; a congenial, hard-working crew of "country types"; excavation challenges poised by the very ephemeral remains and the rubbly site matrix; and a real sense of mission in helping to reopen the mine and get people back to work. All of these points combined with the archaeological knowledge gained conspired to make this a very positive experience and important learning time for me. I am grateful to CWI and thank the company for our ten year association. CWI's cultural resource needs have been satisfied for the foreseeable future and it is unlikely that it will again undertake such work anytime soon. The contributions believed to have been derived from the 1986 work in particular seem to be a fitting way to conclude CWI's cultural resource program. I am proud to have assisted in the development of the Orchard Valley Mine and to have sampled the Native American archaeological record of la Sierra del Venado Alazan.

This volume has been published largely as it was submitted to the BLM in 1987. I have, however, occasionally updated references and rewritten various discussions, particularly those regarding dating of the historic Ute component, and the probable remains of the brush structure found there. This structure was not recognized for what it was until after the original report was prepared.

Steven G. Baker
Centuries Research, Inc.
Montrose, Colorado
July 10, 1991

CHAPTER 1

AN INTRODUCTION TO THE ORCHARD VALLEY MINE CULTURAL RESOURCE STUDY PROGRAM

Overview and Statement of Purpose

Colorado Westmoreland Inc. (CWI) has operated the Orchard Valley Mine since 1976. The mine is an underground coal mine with its primary portal at the central mine complex on the high bluffs just north of Paonia (Figures 1 and 2), Delta County, Colorado. Since the late 1970's the mine has developed by way of a series of leases from the Bureau of Land Management as well as acquisitions of fee coal properties. The surface area involved in the operation is now some 8,000 or more acres. Prior to 1986 the most recent expansion of the mine was in 1984 when CWI was granted access to about 5,000 additional acres in lease C-37210. An underground coal mining and reclamation permit from the Colorado Mined Land Reclamation Division (CMLRD) and the Office of Surface Mining (OSM) allowed CWI to include the new lease within its operating permit area. Centuries Research of Montrose has conducted cultural resource studies for the mine development since 1976.

On June 1, 1986, the Orchard Valley Mine caught fire and the portals had to be sealed. Plans were soon initiated to establish new portals so that coal mining could be resumed. Centuries was retained in June of 1986 to conduct a Class III or one-hundred percent cultural resource inventory of an 880 acre area within which the new portal was expected to eventually be sited. This area (Figure 3) was initially designated as the area of undertaking for compliance with the National Historic Preservation Act of 1966 as amended (36CFR800). As planning for the new portal developed over the summer of 1986, the project was scaled down. The final boundaries of the area of undertaking changed and a maximum area of only 20 acres was selected by CWI. The relationship of the initial and final areas of undertaking are shown in Figure 3. The sites considered in the report were discovered within the 880 acre tract (Baker 1986) and subjected to test excavations in order to evaluate them for eligibility to the National Register of Historic Places (Baker 1986, 1986a, 1986b, 1986c) and data recovery mitigation efforts. Even though data recovery efforts were underway, it was eventually determined that none of the sites would be impacted from the west portal development. New portals were constructed in a smaller, revised area of undertaking during the fall of 1986. The mine reopened as the Orchard Valley West Mine at this location in January of 1987. This document will in part constitute the final report on the cultural resource studies conducted in 1986 in conjunction with this development. The purposes of this report are to summarize the final report of test excavations at The Ridge Site (5DT771) (Baker 1986b), to present the final analysis of the more intensive excavations at The Roatcap Game Trail Site (5DT271) (Baker 1986c), and to synthesize all the information on the local prehistory that was collected by Centuries Research on behalf of the Orchard Valley Mine between 1976 and 1986 (Baker 1984).

Figure 1

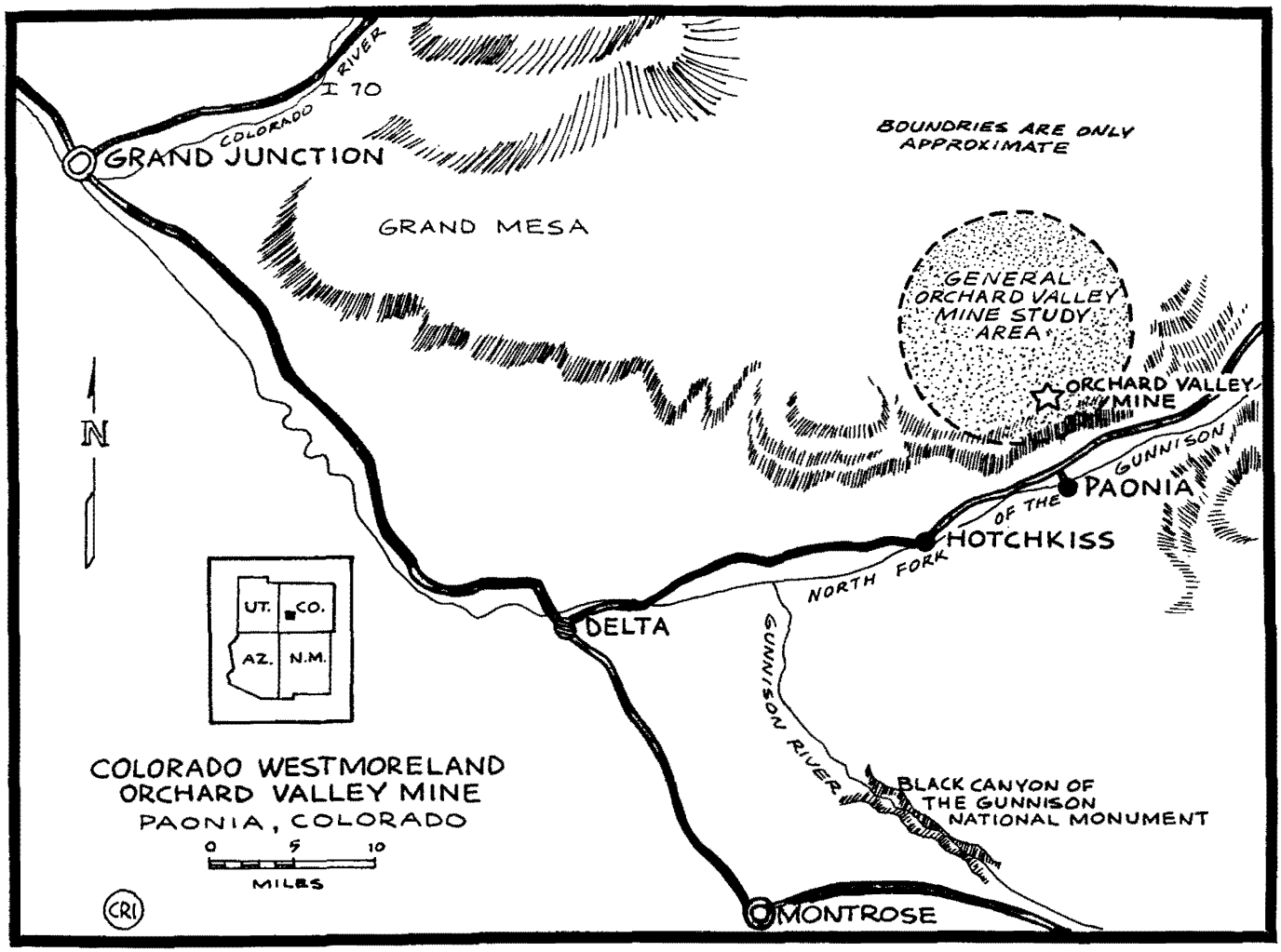


Figure 1: General location plan for Colorado Westmoreland Inc.'s Orchard Valley Mine study area, Delta County, Colorado.

Environmental Setting of the Orchard Valley Mine Study Area

The Orchard Valley Mine study area is situated on the southeast flank of Grand Mesa and overlooks the Valley of the North Fork of the Gunnison River in West-Central Colorado (Figures 1, 2, 3, 4 and 5). The legal description of the maximum study area would include all or part of Sections 4, 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, and 21, T13S, R91W and Sections 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 34, 35 and 36 of T13S, R92W. Portions of Sections 31 and 32 of T12S, R91W also constitute part of the study area as do parts of Sections 34, 35 and 36 of T12S, R91W. These sections are all within the 6th Principal Meridian. The area involved at various levels is estimated at about 15,000 acres within the maximum area of reconnaissance. Within this larger area about 8,000 acres have been subjected to more intensive levels of inventory. Overall, the study area borders on Terror Creek on the east and the upper reaches of Long Draw on the west. The West Fork of Terror Creek delimits the north boundary and the north edge of the North Fork Valley bottom generally marks the maximum south limit. The maximum boundaries of the study area are reproduced in Figure 3 of the 1984 baseline report (Baker 1984). Because of its cumbersome nature, this map is not reproduced herein. By designation of the involved sections it is not meant to imply that all of this country was inventoried at any specific level, only that it somehow figured into the maximum study area. This was often simply at the intuitive reconnaissance level.

Grand Mesa, or, as the Spaniards called it, The Mountain of the Sorrel Deer, is a prominent lava-capped plateau between the Colorado and Gunnison Rivers attaining altitudes as high as 11,000 feet and standing as much as 5,000 feet above surrounding lowlands. It is located on the extreme east edge of the Great Basin in the Colorado Plateau Province near its contact with the Southern Rocky Mountain Province (Thornbury 1967:414-415, 334). The area is also situated on the extreme east margin of the Great Basin Floristic Province (D'Azevedo 1986:6-7). The North Fork of the Gunnison River is situated at an elevation of about 5,600 feet in a valley which measures roughly one-half mile wide near the study area. The maximum study area itself includes topography on the sides of the valley ranging in elevation from 6,200 to 9,150 feet. The focus of the most intensive inventory efforts was on a zone about 5 miles wide which ranged in elevation from 6,600 to 7,800 feet at water course level.

The Grand Mesa is an east-west oriented highland which extends for 50 miles between the confluence of the Colorado and Gunnison Rivers near Grand Junction (Figure 1) east to the Elk Mountains (BLM N.D.:76). Its basalt cap rests on a thick sequence of Tertiary shale and sandstone of the Green River and Wasatch Formations. These are underlain by Cretaceous Mesa Verde Group rocks which constitute an obvious cliff line on the mesa's sideslopes. The coal mines of the region, such as the Orchard Valley Mine, primarily focus on coal deposits in the Cretaceous Mesa Verde Group which is exposed on the surface in this cliff line around the south and west margins on Grand Mesa. The Grand Mesa's lower slopes are composed of yellow and gray Mancos shale of Cretaceous age (Chronic 1980:284 - also see BLM N.D.:79).

Grand Mesa is reputed to be the largest flat-topped mountain in the world and is a dominant land form in the region. Its lava-capped summit contains at least 400 glacial rock basin lakes and it shows evidence of at least three glacial advances. Two of these are marked by end moraines on top of the mesa and the third by a moraine in Kannah Creek Valley. One of the glaciations is believed to be pre-Wisconsin and the other two Wisconsin. These were ice caps which had local extensions down the mesa flanks (Thornbury 1967:414) and, as will be discussed, have left substantial deposits of glacial till on the mesa sideslopes within the CWI project area.

Paleo-environmental data are not seemingly available for the project vicinity, but indications are that the local floral community on the valley floor was composed of lush native grasses interspersed with box elder and oakbrush that was locally referred to as "Valley Oak" at the time of White settlement in the 1880's. One may reasonably suspect that cottonwood and willows were also present in the local area as well. The climate was presumably typical of the mountain valleys in the Gunnison Country where winters are harsh and the summer growing season short in comparison to valleys at lower elevations. The faunal community would have been typical of the Rocky Mountains with deer, elk, bear, beaver, wolf, and other mammals being conspicuous. The valley floor is today intensively cultivated for hay and orchards in a pattern of small, "yeoman-like" holdings. Overall, Grand Mesa and its environs support a relatively high indigenous biomass which would have been of major regional importance to its native inhabitants.

The foothill slopes of the mountains rise steeply and reach an elevation of about 8,000 feet within about two and one-half miles of the Valley floor (Figures 4, 5, 6 and 7). Pinon and juniper with a mixture of oakbrush and other flora typical of the Transitional Life Zone are evident on the slopes. Again, fauna typical of the Rocky Mountain Region would have been present at the time of initial White settlement. A broad band of oakbrush penetrates for several miles into the foothills and serves to separate the pinon and juniper of the transitional zone from the aspen and fir of the Montane.

Northward beyond the steep slopes of the Valley, one enters more deeply into the mountains (Figure 7) where elevations are maintained at about 8,200 feet for about four miles. Within about ten miles north of the bluffs overlooking the Valley, the mountains rise to an elevation of nearly 10,000 feet. This region is characterized by the Montane or Canadian Life Zone and once exhibited conspicuous stands of aspen, with lush grasses in the small parks, and spruce and fir obvious at various points. Today the area is notable for its heavy growth of large scrub oak which some local informants have suggested replaced the grassy slopes of the small tributary valleys of the North Fork during the past century (Morrell 1977). The 1986 archaeological program, however, indicated little evidence of much change in the vegetation in roughly 2,000 years. Escalante's descriptions of the area in 1776 also suggest a heavy oakbrush community (Chavez and Warner 1976) has long been present.

FIGURE 2

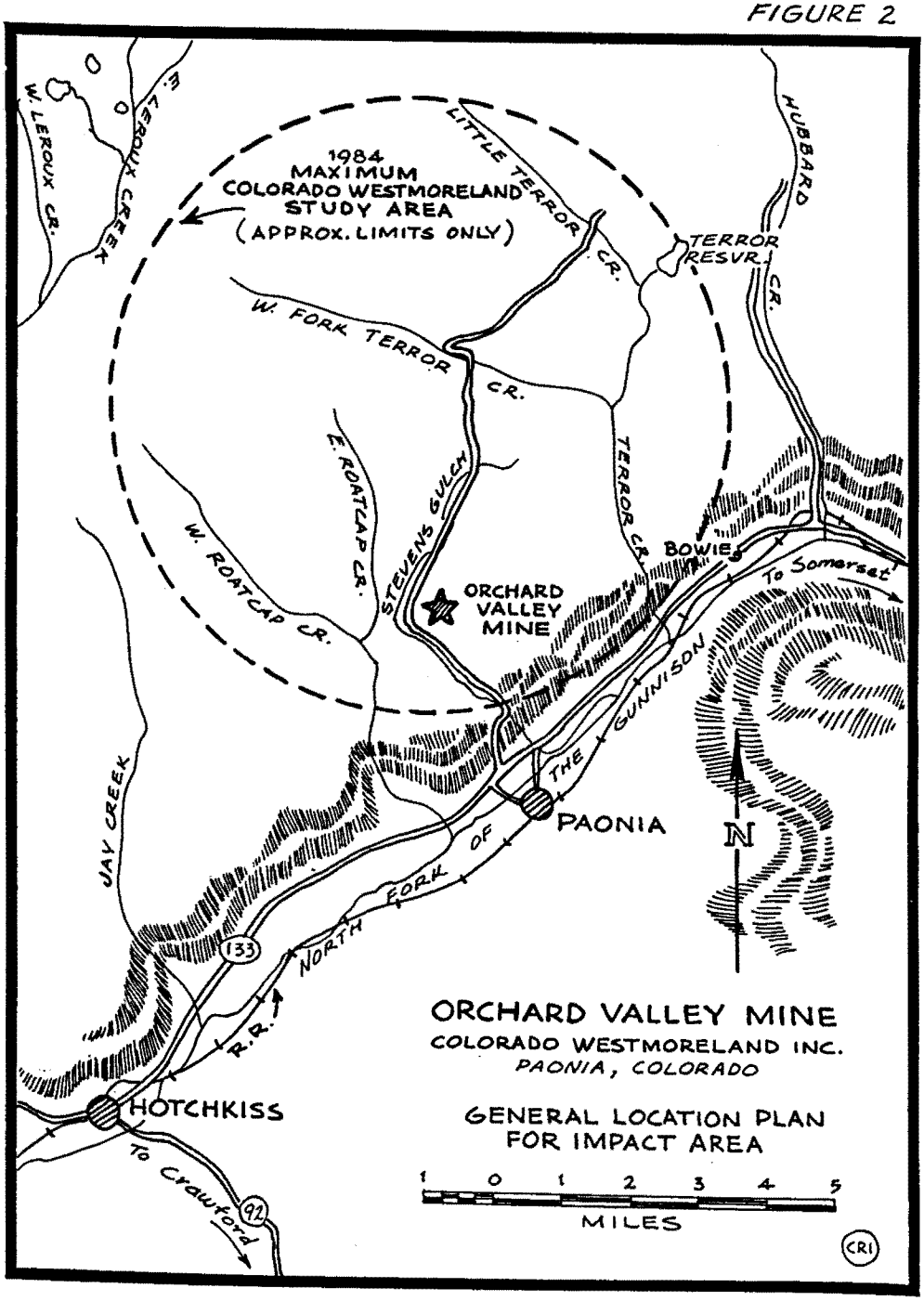


Figure 2: Map of Paonia vicinity in the North Fork Valley of the Gunnison.

The study area (Figure 2) includes the dividing ridge and the valleys of Stevens Gulch, East and West Roatcap Creeks, part of the Terror Creek Valley and other ephemeral water courses. Stevens Gulch and the Roatcap Creeks are small and normally ephemeral streams flowing southward out of the mountains and into the North Fork. They receive their water from smaller ephemeral streams and a few springs. East Roatcap also receives some of the diverted flow from Overland Reservoir and may today run up to 5CFS which would have probably been the maximum normal flow in the past. Terror Creek receives overflow water from Terror Reservoir. Some of these streams run nearly year-round but historically have gone dry during the winter. The valleys of the creeks are extremely narrow. Overall, the study area is best described as steep and quite rugged with very minimal amounts of flat ground. It is heavily vegetated and ground visibility is limited except in areas of erosion or where pinon, juniper and sagebrush dominate (Figures 5-7). Numerous springs exist throughout the study area and serve as water sources of highly variable reliability. All of these considerations influenced the inventory strategies employed over the years and no pretense has ever been offered that any attempt was made to inventory all of this rugged ground by typical pedestrian methods. A series of permanent game trails wind through the oakbrush and follow the drainages and ridge lines in a very consistent and predictable pattern. These trails appear to have had a very significant impact on the aboriginal settlement system.

While locals speak of the "North Fork Country", historically speaking, the North Fork Valley is located on the western margin of the "Gunnison Country." This has been described by historian Duane Vandenbusche who, while uncritically discounting or oversimplifying certain historical aspects of the area, conveys a good overview.

> Technically speaking, the Gunnison Country includes all of that land drained by the Gunnison River and its tributaries. Yet, because Gunnison was the hub of related regions outside of that description, the Gunnison Country included much more territory. To the east, the top of Monarch Pass at 11,312 feet forms one of the limits; to the south, the early center of the San Juan Country, Lake City, holds forth. The western border is Cimarron, early cattle center and important Denver and Rio Grande railroad station. The northern perimeter halts at the rugged and unique town of Marble, located high in the Elk Mountains, over fifty miles from Gunnison.
>
> The Gunnison Country has always been a land of extremes. Snow has fallen in amounts exceeding 350 inches, causing mythical [sic] two-story outhouses and twenty foot high clotheslines to be built in towns like Crested Butte. Fifty-six below zero has been recorded at the Taylor Reservoir to the northeast. The region has always been isolated, yet well known. Here also the calm, seemingly harmless waters of the late summer and fall can become raging torrents in the spring when the runoff from the mountains descends into the valley waters. The land is so violent, fur trappers virtually ignored it [sic]; so rugged that railroads skirted parts of it and failed in others, so tough that the Ute Indians moved out and spent their winters elsewhere [sic]. (Vandenbusche 1980:1)

FIGURE 3

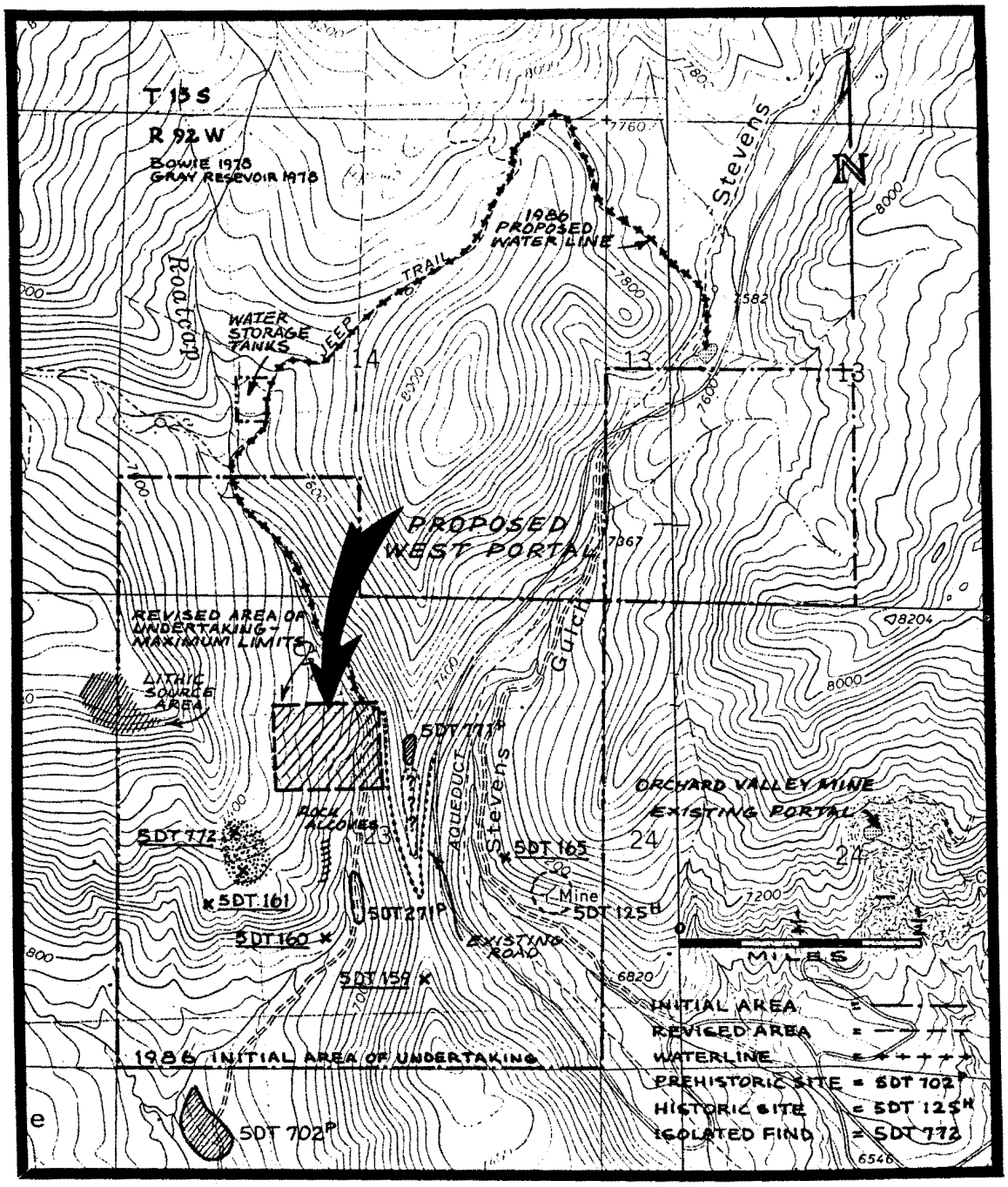


Figure 3: Map of cultural resources within the initial and revised areas of undertaking for portal development at Colorado Westmoreland Inc.'s Orchard Valley West Mine, Delta County, Colorado.

A Review of the Prehistoric Cultural Context of the North Fork Valley

On the prehistoric level, Western Colorado is part of the Great Basin culture area. This culture area is based upon a "synthesis of prehistoric and historic cultural and linguistic features characteristic of the human populations native to the region" (D'Azevedo 1986:7-12). West central Colorado is within the region of the Great Basin culture area normally ascribed to the Taviwach or Uncompahgre Band of the Ute peoples who, like the Southern Paiute to the west and south, spoke Ute, a Numic language. There is, however, evidence to suggest that the region was originally divided among two or possibly three Ute bands including the Taviwach, the Sabuagana and/or the Elk Mountain Utes (Peterson 1977). There are some problems in the finer points of these assignments which will be discussed in Chapter 4. In discussing the local prehistory and contact period aboriginal archaeology of sites 5DT271 and 771, considerable attention will be accorded to the Ute people (Aikens and Madsen 1986; Callaway, Janetski and Stewart 1986).

The study area is outside of both the classic prehistoric Anasazi and perhaps the San Rafael Fremont culture areas. It is, however, located within the geographical area thus far assigned to the Uncompahgre Complex, which, as a regional variant of the Desert Culture Tradition, has been postulated from data drawn from sites on the Uncompahgre Plateau west of the study area (Buckles 1971). Until this writing, few appreciable indications for Anasazi or Fremont manifestations have been noted in the Gunnison Country. The territory of the historic "Eastern" Ute People (Stewart 1973) covered nearly all of Colorado westward to the Green River in Utah and clearly encompassed the Gunnison Country (Callaway, Janetski, Stewart 1986). According to the most recent investigations, the Utes are credited with a long occupation in West-Central Colorado (Reed 1984) and Buckles (1971) has directly postulated that ancestral Utes are responsible for leaving the archaeological culture record represented in the Uncompahgre Complex. If one accepts Buckles' conclusions based on his work on the Uncompahgre Plateau; West-Central Colorado may be perceived as having witnessed a relatively steady occupation from an unknown point in remote prehistory. This occupation may have been by peoples who participated in the generalized "Archaic" or Desert culture tradition of the Great Basin culture area as it was locally manifested in the historic period. This view is, however, not fully compatible with suggestions of possible population displacements and problems of similarities in archaeological cultures among peoples of potentially differing linguistic backgrounds and cultural heritages. As of this writing, however, the question of a long Ute ancestry in West-Central Colorado is moot, since archaeological data do not exist which will support a counterargument to Buckles' view of a long Ute presence in the area. Much of this issue is linguistic and ethnographic and will not be resolved in the near future, if ever.

The chronology which Buckles (Table 1) presented for the Uncompahgre Complex is, thus far, the only specific cultural chronology which has any roots in local archaeological excavations. Buckles has postulated a complicated series of nine Phases in the evolution of the Uncompahgre Complex as it emerged following the Paleo-Indian tradition which, regionally speaking, is quite poorly understood. According to

Buckles, these Phases commence with the Shavano Phase about 7,000 B.C. and end with the Escalante Phase which, in a very general way, represents the historic Ute Culture (Buckles 1971: Table 1). It has recently been suggested that the term Uncompahgre Complex be abandoned and replaced with the term "Uncompahgre Techno-Complex" (Horn, Reed and McDonald 1987; Reed 1984; Gooding and Sheilds 1985).

A Paleo-Indian occupation has not yet been clearly demonstrated or temporally bracketed in this area, but some people bearing this tradition seem to have been present in the area about 8,000 or 9,000 B.C. as indicated by occasionally isolated finds of Folsom points in scattered locales of Western Colorado (Toll 1977:Table 1 and Jennings 1968:16; Baker 1980; Reed 1984). It is possible that a pre-projectile cultural stage, such as projected by Krieger (1964), could yet be demonstrated in Western Colorado. Jennings (1968) discussed this, but there is as yet no evidence of such a stage in the region. If such evidence were found to be present, it could push the cultural chronology of the area back many thousand years beyond that of the Paleo-Indian.

Some archaeologists working in Western Colorado loosely speak of the Archaic Stage which followed the Paleo-Indian and preceded the Formative Stage and Ute tradition. In using the term "Archaic", these individuals are generally speaking of the basic Desert Culture or Desert Archaic (Jennings 1957, 1978). This was a pre- or incipient pottery tradition which is generally accepted to be locally reflected in the Uncompahgre Techno-Complex. As pointed out by Buckles (1971), as a generalized tradition this may have persisted in the area for nearly 9,000 years. In this period Buckles has postulated that the tradition remained generally stable. It is thought to have undergone minor adjustments in the cultural assemblage as a response to local environmental adaptations and contact with peoples of the Fremont and Anasazi persuasions in the general period ca. 700 to 1300 (Buckles 1971). Testing of this fundamental proposition is a major aspect of regional inquiry at this time. As outlined, most of the available regional archaeological data is drawn from the Uncompahgre Plateau and other areas west and south of Grand Mesa and the mountains of the Gunnison Country. There is no other local chronology directly applicable to the project area.

Cultural Resource Studies Prior to 1986

Cultural resource studies were first initiated for the Orchard Valley Mine in 1977 (Baker 1978). At that time, there was very little information available relative to the prehistory of West-Central Colorado. This was particularly the case in relation to mountainous areas of the Gunnison Country. Buckles' (1971) thesis was available and constituted the only available synthesis of the regional prehistory. This prehistory could only in a very generalized sense be viewed in terms of a much wider literature of the northern Plains, Southwest and Great Basin. The state of our knowledge of prehistoric occupations in the high country was summarized in relation to the research design for the large Mount Emmons project in Gunnison County in 1980 (Baker 1980, 1981). This view showed that our knowledge of regional occupations had not advanced much beyond the works of Schroeder (1953) and Lister

(1962). The general view expressed in these articles was that harsh winters almost certainly precluded any form of aboriginal occupation other than transient and seasonal ones such as for hunting, raw material procurement, and transportation through the mountains (Baker 1980:9).

In 1971 Buckles had interpreted his own excavation data from West-Central Colorado and reviewed the previous archaeological work in the area. He was left with the view that much very basic archaeological work was needed in order to begin to test the tentative cultural chronology he advanced and to begin moving toward higher levels of inquiry. Even with the extensive regional inventory efforts which accompanied the contract archaeological market of the late 1970's and early 1980's, our knowledge of regional prehistory was not really advanced much because there was little synthesis of the broadened data base. It had become obvious that the mountains of the Gunnison Country contained a very substantial resource base that could no longer be simplistically viewed as a marginal area tangential to the Great Basin/ Colorado Plateau, Plains, or Southwest. That was one of the best things to come out of the past decade of work. The archaeological profession really became aware of just how much archaeology existed in the Colorado mountains. As shown by the Mount Emmons program, for example, there was a lot of archaeology to study, certainly far more than implied in the earlier works of Lister (1962) and Schroeder (1953).

In the North Fork Valley, however, as late as 1978 there had still essentially been no archaeology accomplished and Buckles' (1971) work on the Uncompahgre Plateau was the extent of our knowledge. In 1978, this writer undertook a review of the archaeological data base in a 500,000 acre study area from the south flank of Grand Mesa between Delta and Paonia (Baker I978a). This included the study area for the Orchard Valley Mine. Despite a number of survey efforts in the region, only 16 cultural resources had been recorded within the half-million acre study area! Of these, 13 had been recorded in the original Orchard Valley Mine inventory and only two of these contained any aboriginal components (Baker 1977). The conclusions reached regarding the archaeology of the south flank of the Grand Mesa was that there really was no "archaeology" of the area. In concluding his 1978 report, this writer commented on the archaeological potentials of Grand Mesa. In assessing the work on behalf of Colorado Westmoreland since that date, it is appropriate to repeat the observations offered then:

> 1) Due to its range of topography and natural environments, Grand Mesa probably offered numerous combinations of resources to aboriginal peoples that were relatively unique in Western Colorado. As part of Colorado's high altitude archaeological context, these are not well understood but it is suspected that the Mesa and its immediate environs probably offered one of the richest and most diverse biomasses in Western Colorado. There would, at first inspection, appear to have been very good hunting combined with a variety of floral resources in addition to a very rich lacustrian environment. It is suspected that Grand Mesa will yield abundant and varied aboriginal sites.

2) Much of the Mesa and its environs are heavily vegetated. Site survey will be difficult and very time consuming in the Grand Mesa Project area.

3) Due to its altitude, most of the aboriginal sites located in the project area will probably relate to seasonal exploitation activities by people responsible for the Uncompahgre Complex considered by Buckles (1971), and Wormington and Lister (1956). Literally translated, this means that most of the sites will appear as "lithic scatters".

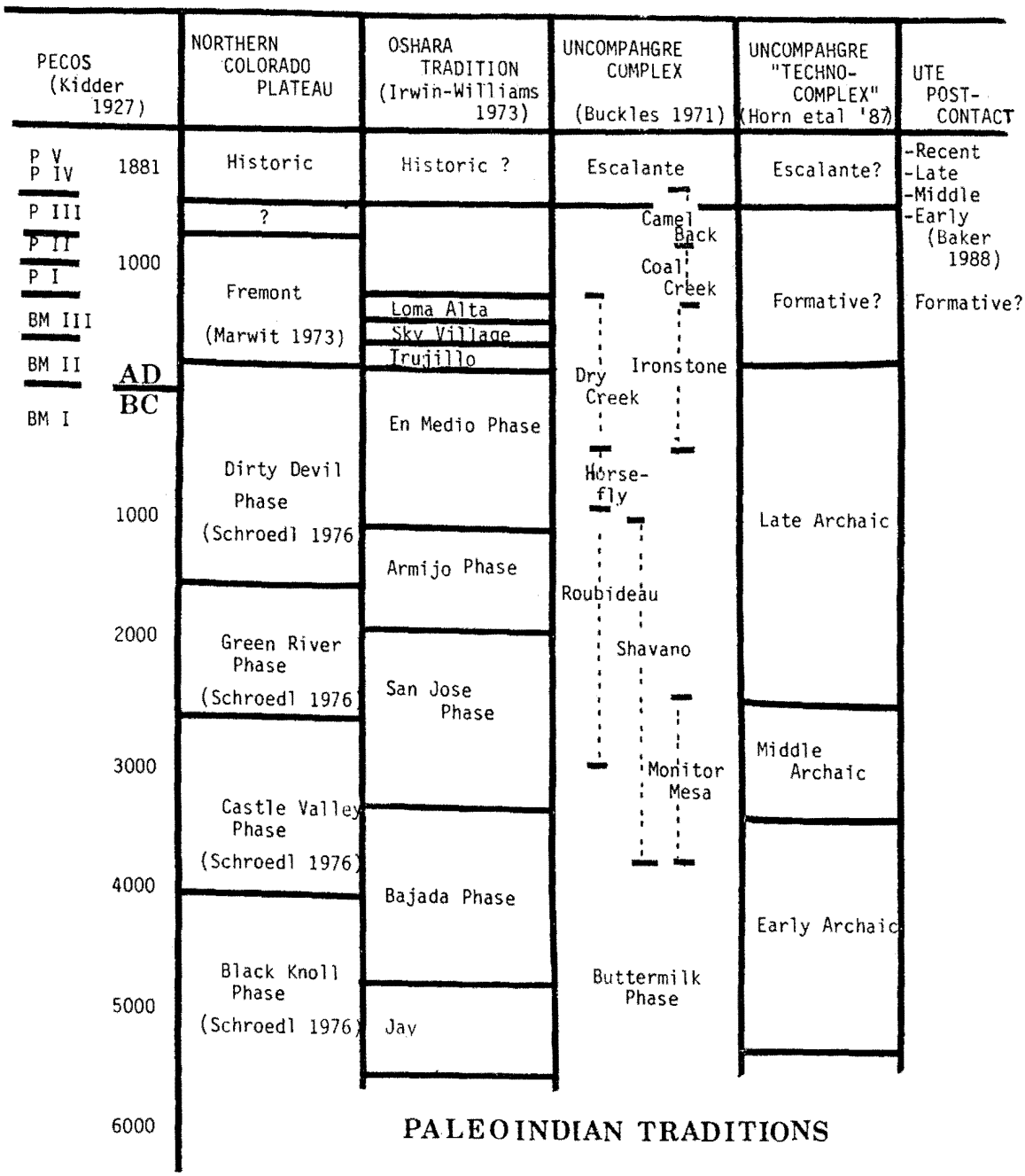
4) There are strong local traditions of historic Ute winter camps existing along the south base of Grand Mesa. This writer has talked with collectors (Dagnan 1977), who have visited these sites and believes that the reported historic Ute sites do exist in the project vicinity. Archaeological survey in the project area should include provisions for a solid program of interviews with local collectors.

5) It is not anticipated that historical Euro-American archaeological sites will be profuse in the project area. There will be numerous homesteads, cow camps, and related forms of high altitude occupational residue. Some of these will probably be good resources but they will probably not be as numerous as the aboriginal resources.

6) Aboriginal resources on the project area will probably not be as abundant or as complex culturally speaking as the more "classic" Southwestern Anasazi and associated sites in the Dolores and Animas La Plata Project areas (Nickens 1977 & 1978). Although these sites may initially appear to be less rich or exotic archaeologically, these "plain Jane" sites of the Uncompahgre Complex will probably be quite important in understanding the prehistory of Colorado. (Baker 1978a:26-27)

Since the foregoing comments were made in 1978, there has been at least one other significant inventory on the flanks of Grand Mesa. This was the BLM's sample oriented inventory of the West-Central Colorado Coal Leases (Hibbets et. al. 1979). This was a sixteen percent stratified random sample of some 175,000 acres in the Grand Valley and the Paonia area. It resulted in the actual survey of 28,466 acres and the recording of ninety sites and 155 isolated finds in twelve separate survey transects. In addition to defining a series of site types, this study did postulate a general settlement pattern for a transect on the northwestern slope of Grand Mesa where 79 percent of all sites and 67 percent of all isolated finds were recorded. This work to date remains the most thoughtful evaluation of prehistoric settlement systems on the flanks of Grand Mesa and is the only comparative work within which one can view the work completed for CWI. There have been a number of surveys of Forest Service owned lands on Grand Mesa itself but these have not seemingly added much new information to the study of regional settlement systems (Hammer 1986) or to better understanding the implications of the ephemeral archaeological remains of the region. Quite recently, important new excavation data relative to the area was reported by Jones (1986, 1986a), Horn, Reed and McDonald (1987), Nickens and Associates (1986), Cassells (1983) and Dial (1989). The availability of these sources has helped the work for CWI immeasurably.

TABLE 1: CULTURAL CHRONOLOGIES BELIEVED RELATIVE TO THE STUDY OF THE NATIVE AMERICAN OCCUPATIONS IN THE GUNNISON AND UNCOMPAHGRE RIVER DRAINAGES OF WEST-CENTRAL COLORADO.



It was within this context that all of the work for CWI since 1977 was viewed. It was not until 1984 that the program even began to find a meaningful number of prehistoric sites. In that year, the project added five sites and five isolated finds to the seven aboriginal resources already known in the project area. At that point it was finally possible to begin to discuss issues such as settlement patterns and site locations at an elementary level. The 1986 work added one additional site and one isolated find to the data base. When combined with the excavation data from 5DT271 and 771 the data base became large enough for some synthesis of the local archaeology to be attempted in keeping with the basic needs outlined by Reed (1984) which are critical in beginning to write the regional prehistoric outline.

Prior to 1984 and in addition to the first survey effort for CWI in 1977 (Baker 1978), a total of seven other projects have been completed in the Orchard Valley Mine project area. These are reported by Hibbets and colleagues (1979); Klesert (1980, 1981); Copeland (1982, 1982a, 1982b, 1982c), and Webster (1982). All but the report by Hibbets and his colleagues were produced by Centuries Research. Although scattered archaeological projects have been completed around the Grand Mesa/North Fork region, few resources have been recorded, particularly in or near the Orchard Valley project area and few reports have been distributed. This was confirmed by the site file search conducted by the office of the State Archaeologist on May 22, 1984. A search of the central site files revealed only 31 resources (apparently including isolated finds) in the two Range and Township blocks containing the Orchard Valley Project. Additionally, of 33 sections in these blocks and included in or generally bounding the study area, only 25 resources are recorded and most of these (13) (Table 2) were recorded in the original baseline study conducted by this writer for Colorado Westmoreland (Baker 1978). An additional 9 or more, including isolated finds, were recorded by Hibbets et. al. (1979). The important point to note is that most of what is known about the archaeology of both the generalized and the specific project area has been learned from efforts on behalf of Colorado Westmoreland supplemented by input from the West-Central Colorado Coal Lease Study (Hibbets et. al. 1979) and comments from the Bureau of Land Management's own summary and predictive comments (Reed and Scott 1980).

Prior to 1984, a maximum of 6,451 acres in the general vicinity of the Orchard Valley Mine area had been inventoried at various levels of intensity. Within this area, only 18, mostly historic Anglo cultural resources had been located for a combined historic and prehistoric site density of 1 resource per 358 acres (Table 2). In archaeological terms this is low density. The result of limited sample transects in the area showed a site density of .23 prehistoric sites per square mile (Hibbets et. al. 1979) which is indicative of site density throughout much of the area.

In 1984, CWI began long range planning for alternate transportation corridors and applied for a permit to expand coal mining beneath approximately 5,000 acres of land controlled by the Bureau of Land Management and private individuals. CRI was retained to conduct baseline cultural resource studies for the transportation corridors and this expansion of the mine. A multiple inventory strategy was used by

Table 2

ORCHARD VALLEY MINE

Cultural Resources Recorded in
General Vicinity of Proposed Mine Operations
Prior to 1984 Baseline Study Program

Site No.	Project Recorded	Historic	Prehistoric/ Aboriginal	National Register Elig.
5 DT 88	Baker (1977)	yes	--	?
89	Baker (1977)	yes	--	yes
90	Baker (1977)	yes and	yes	yes
91	Baker (1977)	yes	--	no
92	Baker (1977)	yes	--	yes
93	Baker (1977)	yes	--	?
94	Baker (1977)	yes	--	?
95	Baker (1977)	yes	--	?
96	Baker (1977)	yes	--	?
97	Baker (1977)	yes	--	no
123	Baker (1977)	yes	--	no
124	Baker (1977)	yes	--	?
125	Baker (1977) Hibbets et al (1979)	yes	--	no
5 DT 271	Hibbets et al (1979)	--	yes	yes
5 DT 549	Klesert (1981)	--	yes	no
5 DT 632	Copeland (1982b)	yes	--	no
633	Copeland (1982b)	--	yes	no
5 DT 654	Baker (1984a)	yes	--	yes
655	Baker (1984a)	yes	--	yes
656	Baker (1984a)	yes	--	no
657	Baker (1984a)	yes	--	yes
658	Baker (1984a)	yes	--	yes
TOTALS 22		19	4	8+

? Denotes more study was required to determine eligibility at time of original inventory

Table 3

ORCHARD VALLEY MINE
1984 BASELINE STUDY

Newly Recorded Cultural Resources
in Total Area of 1984 Reconnaissance

Site No.	Historic	Prehistoric/Aboriginal	National Register Elig.
5 DT 659	--	yes	yes
689	--	yes IF	no
690	--	yes IF	no
691	--	yes IF	no
692	--	yes IF	no
693	--	yes	yes
694	--	yes	yes
* 695	--	yes IF	no
* 696	yes	--	yes
697	yes	--	no
698	yes	--	no
699	yes	--	no
* 700	--	yes	yes
701	yes	--	yes
702	--	yes	yes
703	yes	--	yes
704	yes	--	no
705	yes	--	yes
706	yes	--	no
707	yes	--	no
TOTALS 20	10	10	9

* Indicates an atypical situation. See text and/or site form

IF = Isolated Find Only

CRI. This began with a Class I compendium of existing knowledge (Baker 1984a). This was followed by a Class II statistically based random sample of previously unsurveyed areas within the permit area. A Class III or 100 percent survey of selected portions of the permit area, namely spring areas, rock shelters and bottom lands, and transportation corridors was also completed. A simple discretionary or intuitive reconnaissance was carried out both within and around the 1984 permit area in an effort to find out where resources could be found, as opposed to where they could not. As a result of the multiple inventory strategy, twenty (20) new resources were discovered (Table 3). These ranged from early 20th Century homesteads to prehistoric Indian sites (Baker 1984 and 1984c). When combined with the sites recorded in the previous inventories of the study area, this inventory brought the total number of known resources to forty-four (44) within and near the 1984 revised permit area (Baker 1984). This number included nine aboriginal sites or components and nine aboriginal isolated finds. The remaining resources were all historic Euro-American in derivation.

Evaluations of these sites were made in terms of purely archaeological and/or historical needs as well as management needs derived from a variety of potential impacts such as surface subsidence based on the amounts of overburden above coal seams. Sites which were generally believed to be in need of additional evaluation or mitigation strategies are listed in Table 4. It is important to note that nearly all of these were historic homesteads/cowcamps and that few prehistoric resources were known from the study area. Overall, the potential coal mine and transportation corridors and expansion proposed in 1984 appeared to pose few substantial threats to any existing or potential National Register eligible resources. Upon completion of the 1984 inventory, CWI anticipated preparation and implementation of final evaluation and/or mitigation plans for any potential National Register eligible resources which final review by the Office of Surface Mining (OSM) indicated would face impact from the expanded coal mining operation.

The review of OSM in consultation with the SHPO and Mined Land Reclamation Bureau (MLRB) indicated that only one of the sites listed in Table 4 might be eligible for the National Register and could conceivably be impacted by the proposed mine expansion. That site was a rock alcove (5DT700) on Terror Creek which is only suspected of being a prehistoric site location since no indications of human occupation were noted. In 1986, Centuries prepared a contingency subsidence mitigation plan for the potential site (Baker 1986e). As of this writing, this plan has not been initiated because mining is not near enough to threaten it. Site 5DT700 only remains as a highly probable site of archaeological and/or paleo-environmental importance.

The 1984 and previous inventories of the Orchard Valley project area had not contributed much new or diagnostic data to our understanding of the region's prehistory. The inventories did substantially increase the available data base. This was done by the straight-forward manner of finding the types of sites which offer the potential of contributing primary archaeological data about cultural context and date ranges. On the local North Fork area level this first

step can only be completed by finding resources which can yield data on occupational chronologies, subsistence, diachronic change, paleo-environment and burials (Reed 1984). In this regard, prehistoric sites with hearths, stratified deposits or similar features are important. The Orchard Valley project apparently located some of the first such sites in the North Fork Country.

By 1984, there was one area where some immediate contribution to the local prehistory was made. That was to the study of settlement patterns. Enough resources were located to say that prehistoric sites in the North Fork Country could sometimes be found at the edge of the oakbrush zones on terraces and benches at the mouths of streams where they issue from the high bluffs onto the high terraces of the North Fork Valley itself. These locations appear to correspond to the natural ecotone between the juniper, cedar and sage zones and the more upland areas now covered with scrub oak. At the least, however, prehistoric/aboriginal sites were finally being recorded in the North Fork Country. In addition to their location on the ecotone near the mouth of tributary canyons of the North Fork, these sites also, in keeping with more general patterns were found to occur on flat ground with southerly exposures (Grady 1978, 1980).

On the subject of historic Euro-American sites, there were no surprises in the 1984 study. The 1977 inventory delimited the basic historic occupation patterns for the area and these remain unchanged. The reader is referred to that report (Baker 1978) or the 1984 baseline report (Baker 1984) for detailed consideration of the historical components of the area. The data base has been added to by the 1984 effort, however, and several good additional homestead resources are now known. These enhance our knowledge of the general settlement patterns, particularly for high marginal lands about the North Fork.

Overall, by 1984 the Orchard Valley Project had provided a limited but solid corpus of baseline data on the cultural resources of the North Fork Country. It was believed that future projects in the region would benefit from that effort. By the end of 1984, it appeared that CWI had, with the exception of evaluations at 5DT700, met its obligations for cultural resource studies and that the 1984 baseline report (Baker 1984) would be the last archaeological report produced for some time. By the spring of 1986, CWI had its permit from OSM and was busy mining coal from the original Orchard Valley Mine portals and was anticipating eventual evaluation work at 5DT700.

Compliance Concerns for the 1986 Inventory and Mitigation Program for the West Portal Development Area

On June 1, 1986, the Orchard Valley Mine caught fire and the portals had to be sealed. The mine subsequently had to be shut down. In order to reopen the mine, plans for construction of new portals were initiated. During the summer of 1986, engineering studies were conducted within an 880 acre tract near the mine. This tract was designated as the initial area of undertaking and consisted of the SW¼ of Sec. 13, the S½ of the SW¼ of Sec. 14 and all of Sec. 23 of T13S, R92W (Figure 3). It was anticipated that a new portal location would be

Table 4

ORCHARD VALLEY MINE
1984 DIRECT AND INDIRECT
IMPACT AREAS OF THE REVISED
PERMIT BOUNDARIES

Summary of Resources for which Additional Evaluation or Mitigation Strategies Appear to be Justified*

Site No.	Historic		Prehistoric/ Aboriginal	Types of Work Needed
5 DT 88	yes	(Stratton Homestead Morrell Park)	--	Historical research Resurvey Detailed survey, possibly te
92	yes	(Cowan Trestle)		stabilize and avoid
93	yes	(Fry Homestead)	Collectively	Historical research Resurvey Possibly limited testing
94	yes	(Davis Homestead)		
95	yes	(Morrell Homestead		
97	yes	(Chambers Homestead)		
123	yes	(Weber Homestead)		
124	yes	(Dawes Homestead)		
271	--		yes	Resurvey Test excavation
659	--		yes	Test excavation
695	--		yes	Detailed survey Possibly test
696	yes	(Morrell Cow Camp)	--	Historical research Detailed survey Possibly test
700	--		yes	Test excavation

* See Table 1 (Baker 1977:50) for original recommendations from the earlier baseline cultural resource study of Orchard Valley Mine. Also see misc. site forms filed since that time and summarized in this report (Tables 4 & 5). Also note that in 1976 very tight access restrictions were applied to private lands and even public access was at times physically denied. For this reason many sites located in 1976 (Baker 1977) were not recorded in detail. This situation still applied in some areas in 1984. As indicated in the 1977 report, however, collectively speaking the homesteads of Stevens Gulch might be eligible as an archaeological district even though they individually may not be eligible for the National Register.

sited within this area which was within the expanded permit area previously surveyed by a multiple survey strategy in 1984 (Baker 1984). In conjunction with the engineering studies, a Class III or 100 percent cultural resource inventory was conducted by Centuries Research in this initial area of undertaking. This was done in order to comply with the National Historic Preservation Act as amended (36CFR800) and thereby identify any cultural resources which might be eligible for inclusion on the National Register of Historic Places. This inventory was completed in June and early July, 1986 and the final report was completed on October 1, 1986 and submitted to the BLM at that time (Baker 1986a).

The inventory found that there had been some previous survey efforts in the initial area of undertaking and that these had resulted in the recording of one historic site (5DT125), one prehistoric site (5DT270) and four isolated finds of prehistoric stone tools (Figure 3). The 1986 inventory recorded one additional prehistoric site (5DT771), one area of widely dispersed lithic flakes which was designated an isolated find (5DT772), and one lithic source area which was not given a formal site number. Figure 3 shows the resources located in the 880 acre project area. In July of 1986, test excavations were conducted at 5DT771 (The Ridge Site) which was found in 1986. These were conducted in order to evaluate its eligibility for inclusion on the National Register. This site was recommended as being ineligible for the Register. At the time it was evaluated, it was not known if the site would be impacted or even be located within the area of undertaking once a portal site was finally selected. The revised area of undertaking (Figure 3) did not include the Ridge Site and it was not impacted by the portal development in the East Roatcap Creek area.

A similar situation existed for 5DT271 which this writer named the Roatcap Game Trail Site (Figure 3). This site was discovered and recorded in 1978 during inventories conducted by the BLM in conjunction with the West-Central coal environmental studies. As indicated in Figure 3, 5DT271 is situated on East Roatcap Creek about 600 feet south of the revised area of undertaking. This prehistoric lithic site was believed to be a strong candidate for National Register eligibility at the time it was first recorded. Additionally, the original recording team recommended that a suitable recording and test excavation program needed to be conducted in order to formally evaluate the site's eligibility (Hibbets et. al. 1979). This recommendation was reiterated (Table 4) in 1984 by this author in the baseline study (Baker 1984:18).

During July of 1986, while portal site selection questions had not been resolved, the East Roatcap Creek area was still considered to be a strong candidate for siting of the portal. Colorado Westmoreland was informed by the BLM that it might be necessary to formally evaluate 5DT271 as part of the Section 106 process if the portal was sited near it. If this was to happen, unavoidable delays in the granting of construction permits might occur. It was, however, believed by all concerned parties that if the site received full evaluation as soon as possible, the risk of such delays might be minimized. If, however, an evaluation was not begun until after the final selection of the portal location, then delays could probably not be avoided. Colorado Westmoreland was anticipating approval of its construction permits by

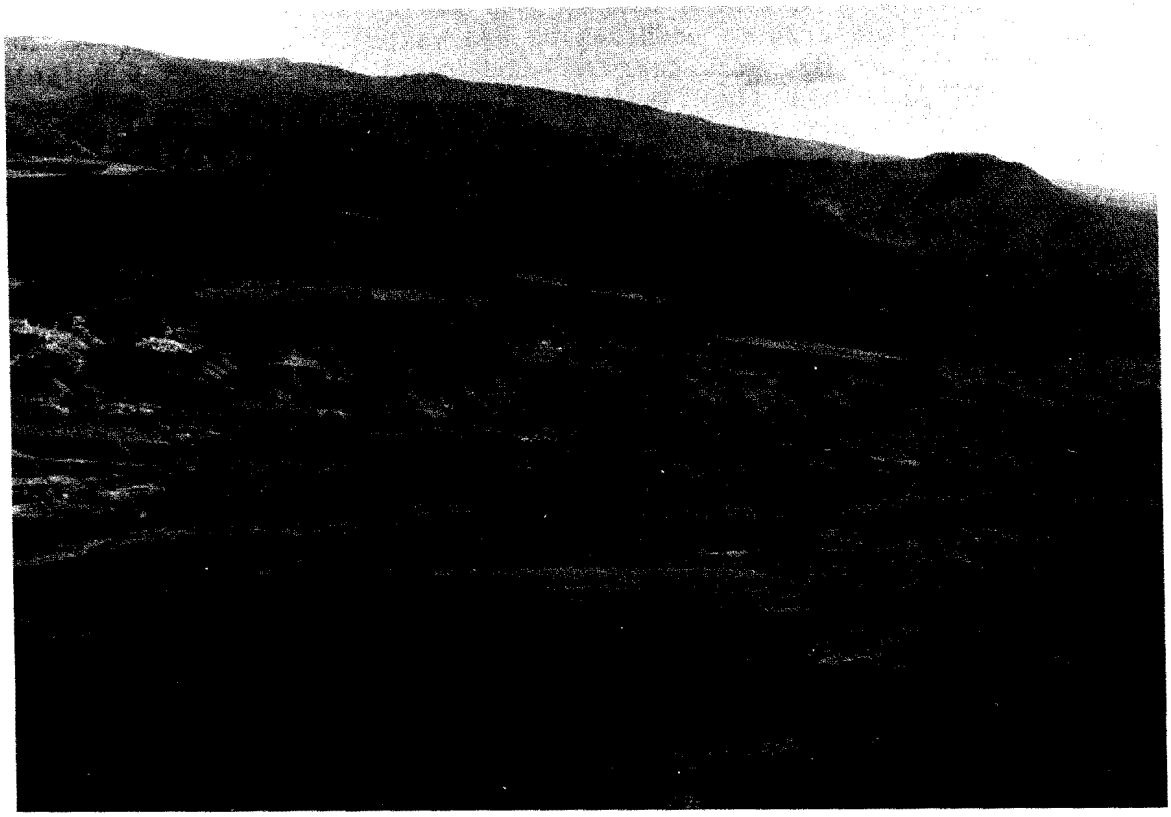


Figure 4: Aerial overview of Colorado Westmoreland's study area. View is to northeast across the valley of the North Fork of the Gunnison. The Orchard Valley Mine is located in cleared area on mountainside beneath arrow, just right of center. The Roatcap Game Trail Site is located in canyon below arrow at photo left. July, 1987.

November, 1986. The evaluation program at 5DT271 was expected to take at least two weeks. Preparation of the project report was expected to take at least one month. Only by starting the evaluation program by early August could the time schedule of November 1, 1986 be realized.

Excavations were subsequently conducted at 5DT271 during August of 1986. By the end of August a portal site was selected on East Roatcap Creek. The revised area of undertaking was established as a maximum 20 acre parcel (Figure 3). The nearest boundary of this area is 600 feet north of 5DT271. Once the final portal site selection was made and construction plans developed, it was possible for the BLM to determine that 5DT271 was outside of the revised area of undertaking.

An agreement was subsequently reached between the BLM and the Colorado State Historic Preservation Officer (SHPO) that this site would not be impacted by the proposed construction. Construction of the portal proceeded on schedule. This action was made possible through further agreement among the BLM, the SHPO, and CWI that this report would be produced as a follow-up and end product of the evaluation program. There are, however, no planning or legal decisions contingent upon the review and acceptability of this report under the usual evaluation standards of BLM and SHPO. Other than meeting the follow-up agreement between the BLM, SHPO, and CWI, the only formal obligation to be filled by this report is in reference to CRI's BLM Antiquities Permit (C-40159c, expired Dec. 31, 1986).

This document is designed as the professional report for fulfillment of CRI's permit as well as its general professional obligation for scientific reporting. In this regard, this report is intended to serve as a summary of ten years work on the local prehistory and a final baseline product from Colorado Westmoreland, Inc. It interprets survey data from ten sites and nine isolated finds combined with excavations at two of the sites. A generalized location map and site summary is given in Figure 57. The content of this report is intended to at least meet the reporting standards of the Colorado BLM (Bureau of Land Management 1981), the Colorado SHPO (Colorado Historical Society 1986), and the archaeological profession as a whole. Report standards for the latter are best articulated in The Airlie House Report (McGimsey and Davis 1977). The format of the present report does, however, depart from that outlined by the BLM and SHPO for reports intended for formal compliance review. All phases of the fieldwork have previously been reviewed for compliance with the provisions of 36CFR800 by both the BLM and the SHPO.

Research Design and Problem Orientation

Centuries Research was contracted by CWI to complete evaluations of 5DT271 and 771 in order to determine the sites' eligibility for inclusion on the National Register of Historic Places and to generate cost data for potential mitigation work. Centuries' plan was to accomplish this by means of test programs designed to test the site content, extent and stratigraphy. National Register eligibility could then be judged in terms of site stratigraphy, size, context and cultural identity as these elements might together indicate potentials for

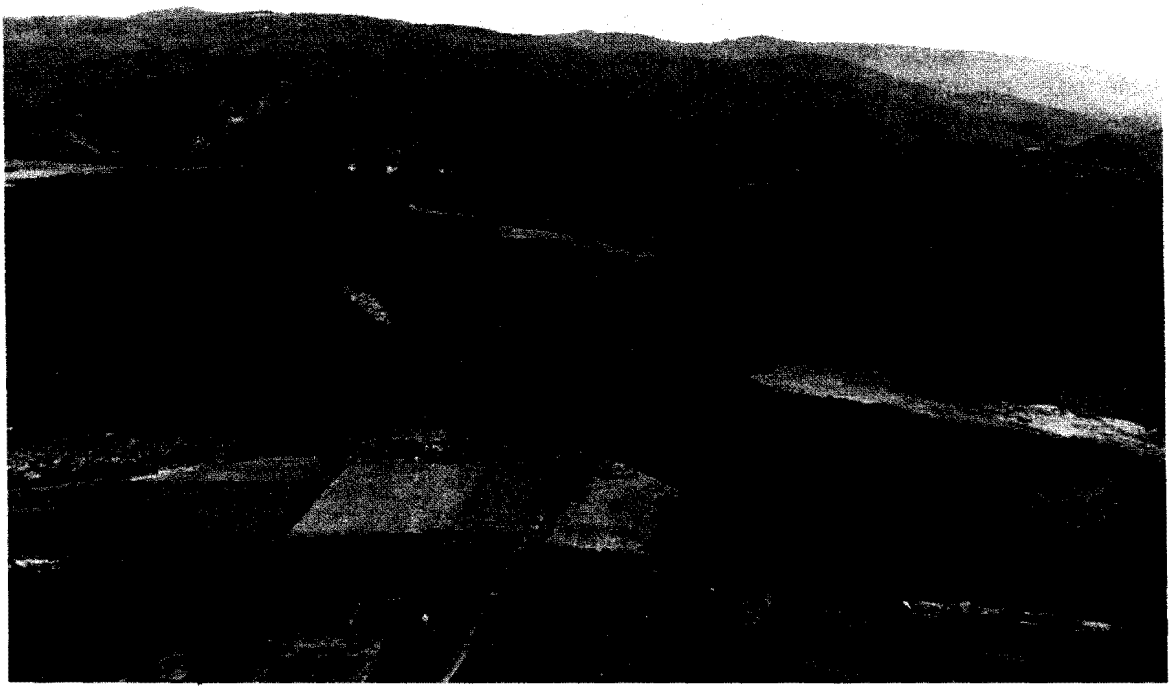


Figure 5: Aerial view looking north up Roatcap Creek and "The Basin" where East and West Roatcap Creeks converge. 5DT271 is located on East Roatcap Creek beneath arrow, just beyond the exposed cliffs in right center of photo. July, 1987.

yielding information important in the prehistory of the North Fork Valley. If such potentials were indicated, the sites might be determined eligible under eligibility Criteria D of the National Historic Preservation Act.

As outlined in the 1984 baseline inventory (Baker 1984) and the 1986 inventory for the Orchard Valley Mine (Baker 1986a), the prehistory of the North Fork Valley is unwritten. It was only in the past two years that some idea of site density and distribution in the area was gained as a result of the work for CWI. All that was even then known was that prehistoric cultural resources could be found at the mouths of the tributary valleys of the North Fork, where streams issued from the high bluffs onto the upper benches of the larger valley. There was as yet not enough information on hand to make much comment about date ranges or cultural affiliation for these resources except to state that they appear to be of a generalized Archaic-like identity which is typical of the Great Basin culture area and occur in an area that was once occupied by the Ute Indians.

Beyond the local North Fork archaeological focus, it was anticipated that the test program might yield information that would contribute to our knowledge of Colorado's West-Central prehistoric culture context and its relationship within the larger Great Basin culture area. The prehistory of this area, as the home of the Ute People is still only understood in a very limited way. As outlined by Reed (1984), prominent regional research concerns include: 1) a dearth of excavation data; 2) chronology; 3) settlement patterns; 4) cultural processes; 5) demography; and 6) site significance. Reed discussed these problems in his review of the status of archaeological knowledge in the region. In doing so, he affirmed the need for straight-forward excavation data on regional prehistory. This view echoed the earlier sentiments of Reed and Scott (1980) when they wrote about the archaeological needs of the Uncompahgre and Gunnison Resource areas on behalf of the BLM.

In critiquing his own dissertation project, Bill Buckles (1971:1360-1368) stressed that his concerted search for stratified sites, the limited testing of them and searches for other sites to "fit into the missing parts of the sequence" received too much emphasis in his program. During the 1960's Dr. Buckles investigated a number of sites in Montrose and Delta Counties as part of the Ute Prehistory Project of the University of Colorado. In retrospect, he stressed that the vast amount of information from these efforts "is not as meaningful as would information have been from single component unmixed sites excavated carefully to define horizontal and thus social behavior." He went on to state:

> These components could have been related to a chronological sequence by radiocarbon, dendrochronological, or other dating. It would have been much better to have restricted the development of the sequence of comparative components to the Historic Period and Proto-Historic and Late Prehistoric cultural manifestations so as to limit the problem of Ute Prehistory to cultural components which could have greatest

> comparative value, which is to be closest in time. The sequence [which Buckles] developed forces comparison of components separated by great amounts of time. (Buckles 1971:1361)

Buckles' recommendations for future work in West-Central Colorado stemmed directly from the shortcomings in the Ute Prehistory Project. He stressed relying more upon qualitative rather than quantitative information. He recommended a more painstaking approach to examination of "single component sites or levels, defining social behaviors, defining variables such as function and environments..."

> What I am recommending is another level of archaeological investigation than has been practiced to date in the area. It can be said that two levels have been practiced. These are the identification of basic contents and the placements in time and space of manifestations. Now a more discrete level of definition of such things as population structures and densities, ecological relationships, social structures, and other characteristics is needed. (Buckles 1971:1365)

In closing his dissertation, Buckles stressed that the directions he was recommending were not "new". He felt they were very basic to any archaeological work and were relatively unsophisticated procedures (Buckles 1971:1367). Buckles made his comments nearly twenty years ago. Even after the archaeological boom brought on in the area by the contract market of the late 1970's and early 1980's, Alan Reed, in preparing the West Central Colorado Prehistoric Context for the Colorado Historical Society in 1984, echoed Buckles commentary and emphasized the lack of information on Ute archaeology in the region.

Reed noted a serious lack of identified Ute sites and their intensive investigation. The only intensive investigations were those credited to Buckles in the 1960's. He felt that major research emphasis should be placed on identifying and chronometrically dating early Ute sites as well as resolving the difficulty of recognizing Ute sites. He also felt that efforts should be directed toward investigating the intensity of the subsistence system as it may have involved competition between the Ute and other peoples. He suggested that this could be done by analyzing sites of the appropriate age and cultural affiliation in terms of floral and faunal resources exploited and the accompanying technology. Other major concerns were for the impact of the horse on Ute lifeways. He particularly stressed that any Ute sites with good integrity should be regarded as "important resources" (Reed 1984:44-45). Since this report was originally written in 1986/1987, Paul Nickens has edited a volume on historic Ute archaeology of the region. This serves as the most up-to-date consideration of this important regional subject (Nickens 1988). In that volume, this writer discussed the potentials for local historic Ute archaeological studies in considerable detail (Baker 1988).

In summary, both Reed and Buckles are saying that we are certainly in the pioneering phase of local archaeological inquiry, particularly when compared to areas such as the classic Southwest or the Plains where more intensive archaeology has long been conducted. In this regard,

they seem to reinforce Walter Taylor's view that, as archaeologists, there are times when we need to start with the basics of writing cultural history before moving on to attempt more processual archaeology (Taylor 1948 and 1972). The excavation programs at 5DT271 and 771 were approached from such a simple and straight-forward perspective. It is believed that the investigations were productive in light of this initial research approach.

CHAPTER 2

EXCAVATION AT THE RIDGE SITE (5DT771)

Project Setting and Environment

The Ridge Site (5DT771) was discovered during the 1986 inventory of the initial area of undertaking (Figure 3) for the portal development at the Orchard Valley West Mine (Baker 1986). The site was named for its location on the prominent and very narrow ridge which divides East Roatcap Creek from Stevens Gulch (Figures 3 through 7). The site is located in the SW¼, NE¼ of Section 23, T13S, R92W, 6th PM. CWI decided to evaluate this resource ahead of the final portal site selection. This was done in order to evaluate the site's eligibility for the National Register and thereby minimize any potential for delays in the event the ridge was finally selected as the location for the new portal or would be otherwise impacted by it. This chapter documents and interprets the evaluation effort conducted by Centuries Research at the site. CRI conducted the fieldwork in keeping with Colorado BLM Antiquities Permit C-40159c which expired on December 31, 1986. Fieldwork was conducted in July, 1986 under the direction of this author.

The north-south trending ridge line on which the site is located is about one half mile long and serves to bridge Fry Mesa on the south with the higher bluffs to the north. The ridge crest varies between 7,200 and 7,400 feet. The crest is eroded from sedimentary formations, apparently of the Mesa Verde Group, and is mantled with Quaternary glacial deposits of middle to late Pleistocene age. These are in the form of unsorted, subangular, poorly consolidated pebble to boulder-size detritus. This mantle has often been modified by mass wasting processes. Land slide deposition of Holocene to late Pleistocene age has resulted in irregular hummocky topography along the ridge (Colorado Westmoreland 1984), particularly on its west side. Soils on the ridge are Delson "Stony" and "Very Stony" loams with the latter occurring on the very steepest slopes (Colorado Westmoreland 1984, 1984a). The Delson series are typical of mountain slopes in the area and are well drained with an underlying stratum of stony clay loam followed by bedrock. It has a moderate to high water erosion factor and is characterized by rapid runoff. The ground surface is stony to extremely stony and is a poor source of topsoil, primarily due to its stony nature (United States Department of Agriculture 1980). The unsorted and unconsolidated character of the rock is characteristic of glacial till. The ridge is covered in a mantle of till suggesting the presence of a moraine in the vicinity (Colorado Westmoreland 1984).

Vegetation on the ridge crest (Figures 6, 7 and 8) is of the Pinon-Juniper type. This consists of a scattering of pinon and juniper in an open canopy fashion. The juniper is currently dominant over the pinon with shrub species dominating the understory. On the ridge crest these shrubs include Utah serviceberry, true mountain mahogany and bitterbrush. Gambel oak tends to dominate on the steep side slopes of the ridge. A very sparse weedy herbaceous understory is present with prevalent cheatgrass, Richardson tansymustard and bedstraw (Colorado Westmoreland, Inc. 1986).

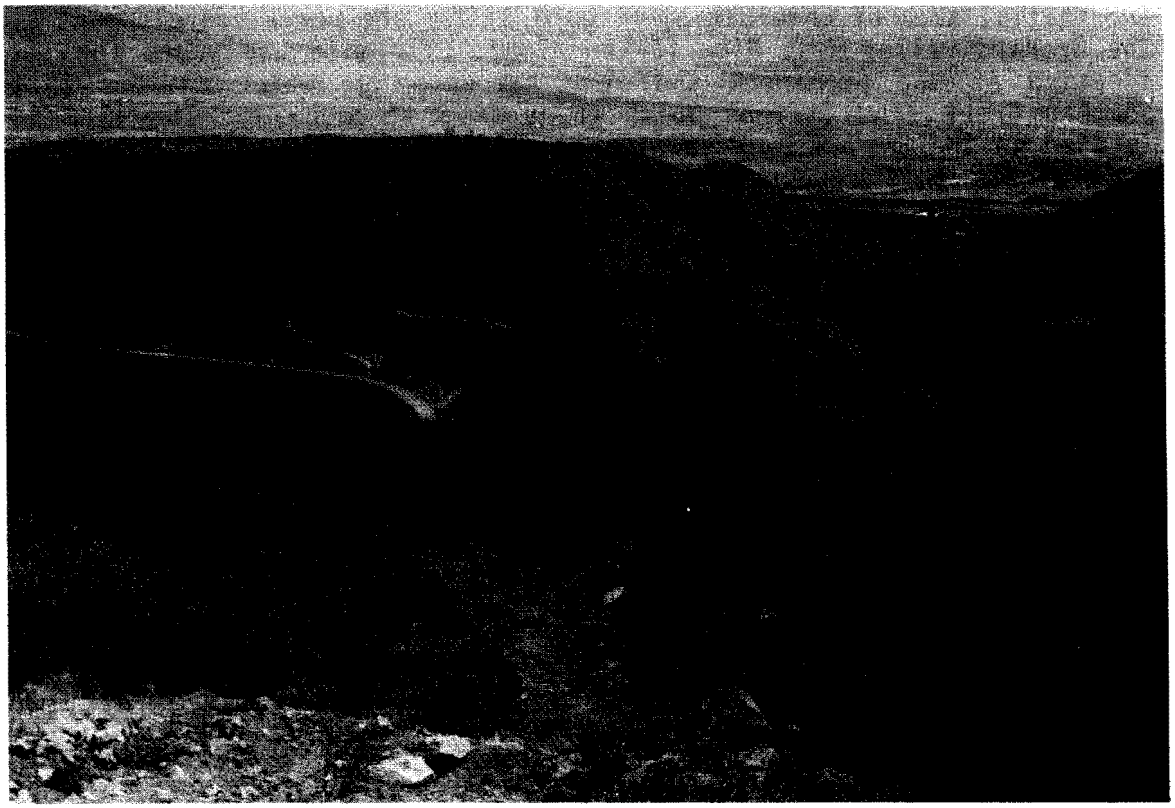


Figure 6: Overview to south down Stevens Gulch on the left and East Roatcap Creek on the right. Fry Mesa is at center rear of view above the narrow saddle in the stream divide. The Ridge Site (5DT771) is located at the arrow on this narrow ridge. The Roatcap Game Trail Site (5DT271) is located beneath the arrow on East Roatcap Creek at point where white cliffs are exposed. 5DT702 is located further downstream at the edge of the Basin. July, 1986.

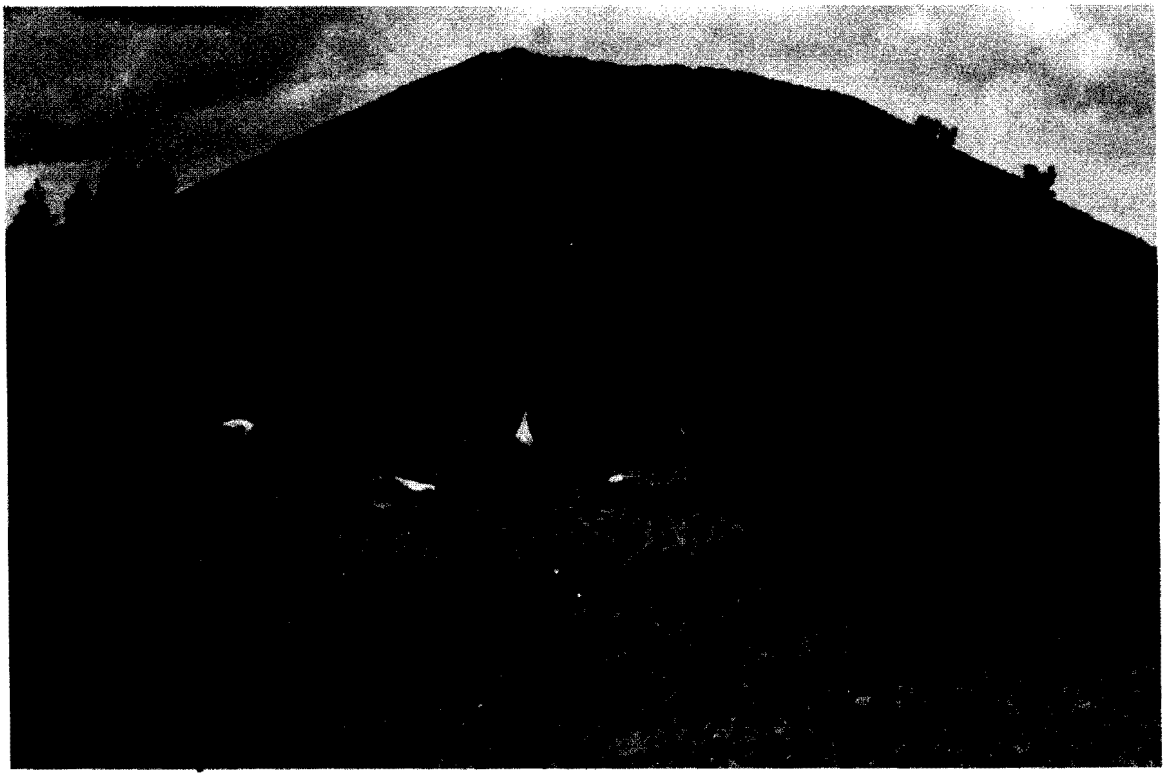


Figure 7: The Ridge Site (5T771). Overview to north in area of presumed game blinds and kill area. Flag in center of photo marks an aerial photo coordinate. July, 1986.

Figure 8: The Ridge Site (5DT771). Overview to south in area of presumed game blinds and kill area. Flag in center of photo marks an aerial photo coordinate. Main lithic scatter is located at extreme right foreground between rocks and juniper tree. July, 1986.

The most conspicuous aspect of the ridge crest is the hummocky topography. Along the ridge line, one will notice large basalt boulders piled up into a series of hummocks with pinon and juniper trees growing from them. This series of hummocks has not been mapped, but extends along the ridgeline in a fashion suggestive of terraces. These features often rise two or three meters above a well established game/cattle trail which wends among the numerous rocky hummocks. Equally conspicuous with the hummocks is the saddle formed by the ridge between the flat tablelands of Fry Mesa on the south and the higher upland bluffs on the north. In initiating the inventory of the ridge crest, the archaeological team was attuned to the probability that this ridge might once have been a route of considerable local importance in the movement of big game, such as deer and elk. Environmental studies conducted by Colorado Westmoreland have indicated that the Fry Mesa vicinity is critical habitat for both deer and elk (Welt 1986, Ferguson 1987). Field crew members reported personally observing elk wintering in the immediate vicinity (Potter and Welt 1986). All things considered, it was strongly suspected that prehistoric hunting blinds and/or driveline features might exist along the ridge.

Evidence of prehistoric hunting activity was eventually found near the north end of the ridge (Figures 9 and 10) near where it widens and breaks abruptly uphill. At this point, the game trail similarly turns uphill and broadens out into a series of trail braids. Up to this point, however, the trail is generally well defined and the ridge top quite restricted by the steep slopes off to each side (Figures 6-10). At this point, for a distance of about six or eight meters, a small number of flakes of various types of tool stone were found. These were all smaller interior flakes initially suggestive of tool manufacturing and resharpening activities. The variety of tool stone represented and the small size of the flakes suggested that this was more than a simple reduction site where one or two tools might have been fashioned. There was also a curious alignment of small basalt boulders as well as more naturally situated boulders at this location. The entire ground surface in this area was, however, quite rocky and distinctions between natural and man-made rock alignments were quite difficult to make. Other than the few flakes (Figures 11 through 13 and Table 1), the problematical stone alignments (Figures 9, 10, 11, and 12), and numerous natural features that might have served as blinds on the ridge crest, nothing else of potential archaeological nature could be observed. Previous Class III survey efforts (Baker 1977, 1984; Hibbets et. al. 1979) had not detected this small and weak cultural resource. A decision was subsequently made to test the lithic scatter and adjacent stone alignments. The goal of the excavations would be to evaluate the resource's potential to contribute to our understanding of local prehistory and it's eligibility for the National Register.

Investigative Strategies and Methodologies

Centuries' plan for testing the site involved a controlled shovel test program designed to test the site content, extent, and stratigraphy within the area of the lithic concentration and the most obvious of the stone alignments (Figures 10, 11, 12 and 14). National Register eligibility could then be judged in terms of site stratigraphy, size,

Figure 9

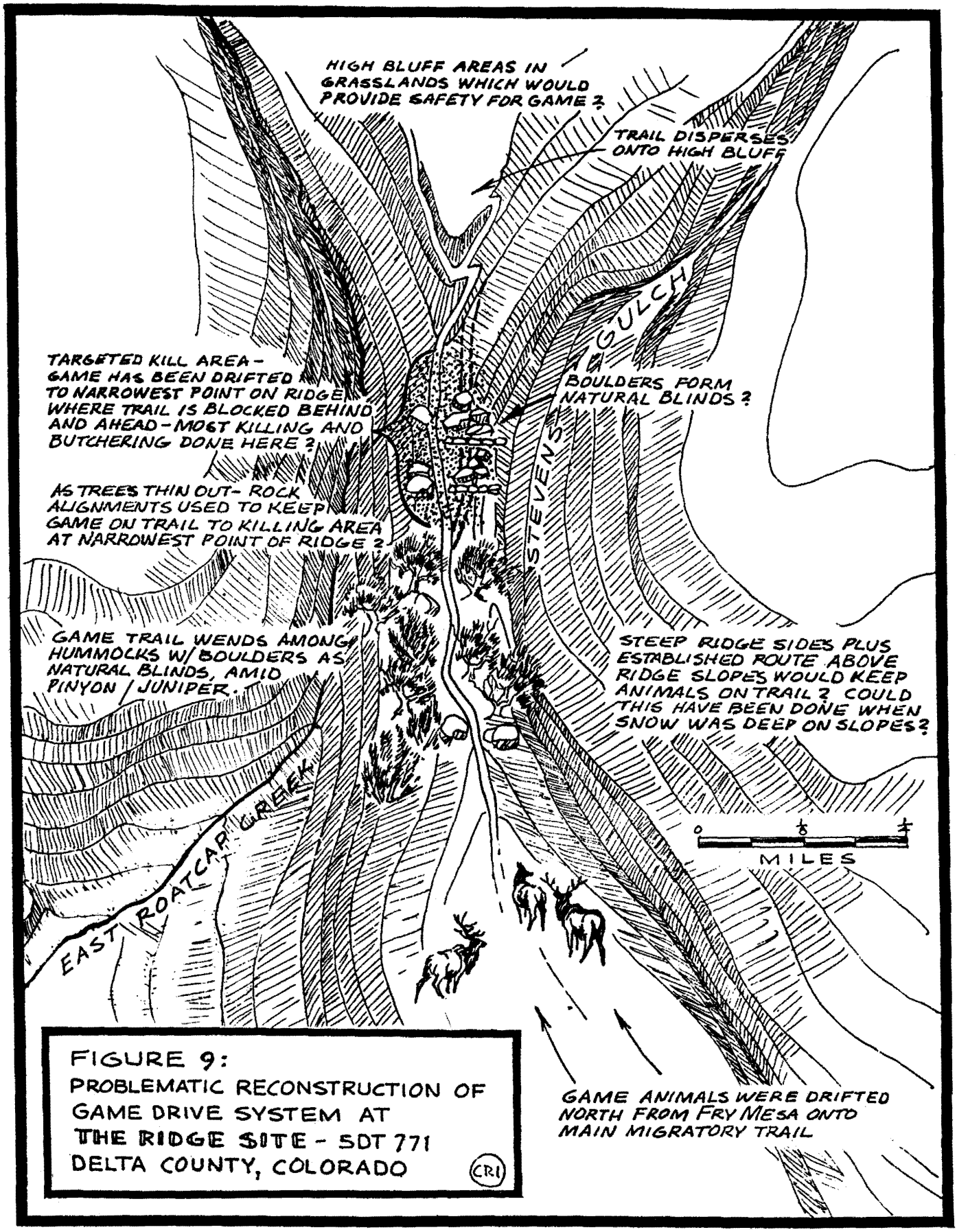

HIGH BLUFF AREAS IN GRASSLANDS WHICH WOULD PROVIDE SAFETY FOR GAME ?
TRAIL DISPERSES ONTO HIGH BLUFF
STEVENS GULCH
TARGETED KILL AREA - GAME HAS BEEN DRIFTED TO NARROWEST POINT ON RIDGE WHERE TRAIL IS BLOCKED BEHIND AND AHEAD - MOST KILLING AND BUTCHERING DONE HERE ?
BOULDERS FORM NATURAL BLINDS ?
AS TREES THIN OUT - ROCK ALIGNMENTS USED TO KEEP GAME ON TRAIL TO KILLING AREA AT NARROWEST POINT OF RIDGE ?
GAME TRAIL WENDS AMONG HUMMOCKS W/ BOULDERS AS NATURAL BLINDS, AMID PINYON / JUNIPER.
STEEP RIDGE SIDES PLUS ESTABLISHED ROUTE ABOVE RIDGE SLOPES WOULD KEEP ANIMALS ON TRAIL ? COULD THIS HAVE BEEN DONE WHEN SNOW WAS DEEP ON SLOPES ?
0
1/8
1/4
MILES
EAST ROATCAP CREEK
GAME ANIMALS WERE DRIFTED NORTH FROM FRY MESA ONTO MAIN MIGRATORY TRAIL
FIGURE 9:
PROBLEMATIC RECONSTRUCTION OF GAME DRIVE SYSTEM AT THE RIDGE SITE - 5DT 771 DELTA COUNTY, COLORADO
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FIGURE 10

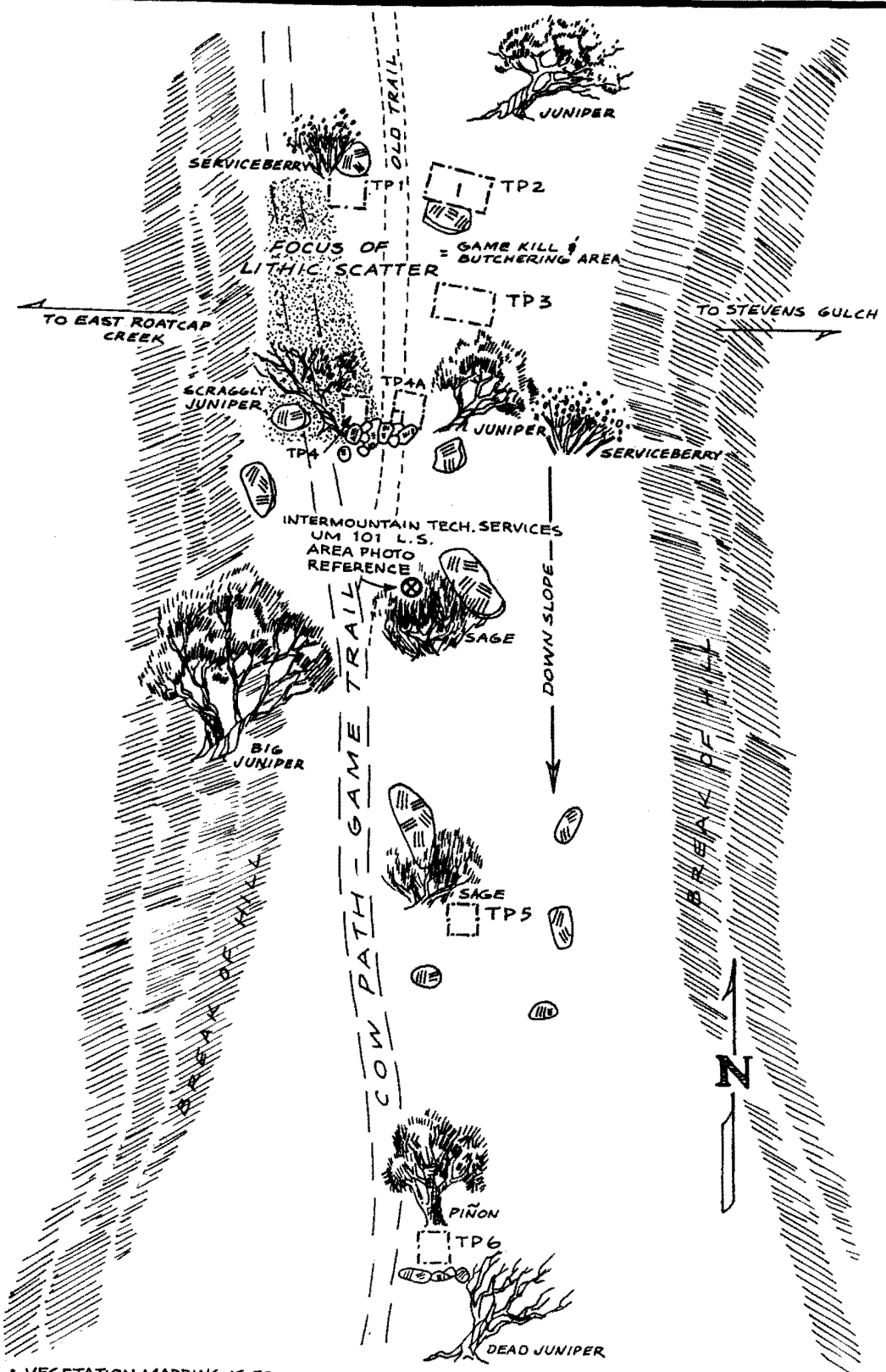

FIGURE 10:
COLORADO WESTMORELAND
ORCHARD VALLEY MINE
PAONIA, COLORADO
5DT 771 - FINAL SITE MAP
JULY 23, 1986

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Figure 11: Overview to south showing focus of lithic scatter and rock alignments at The Ridge Site (5DT771). July, 1986.

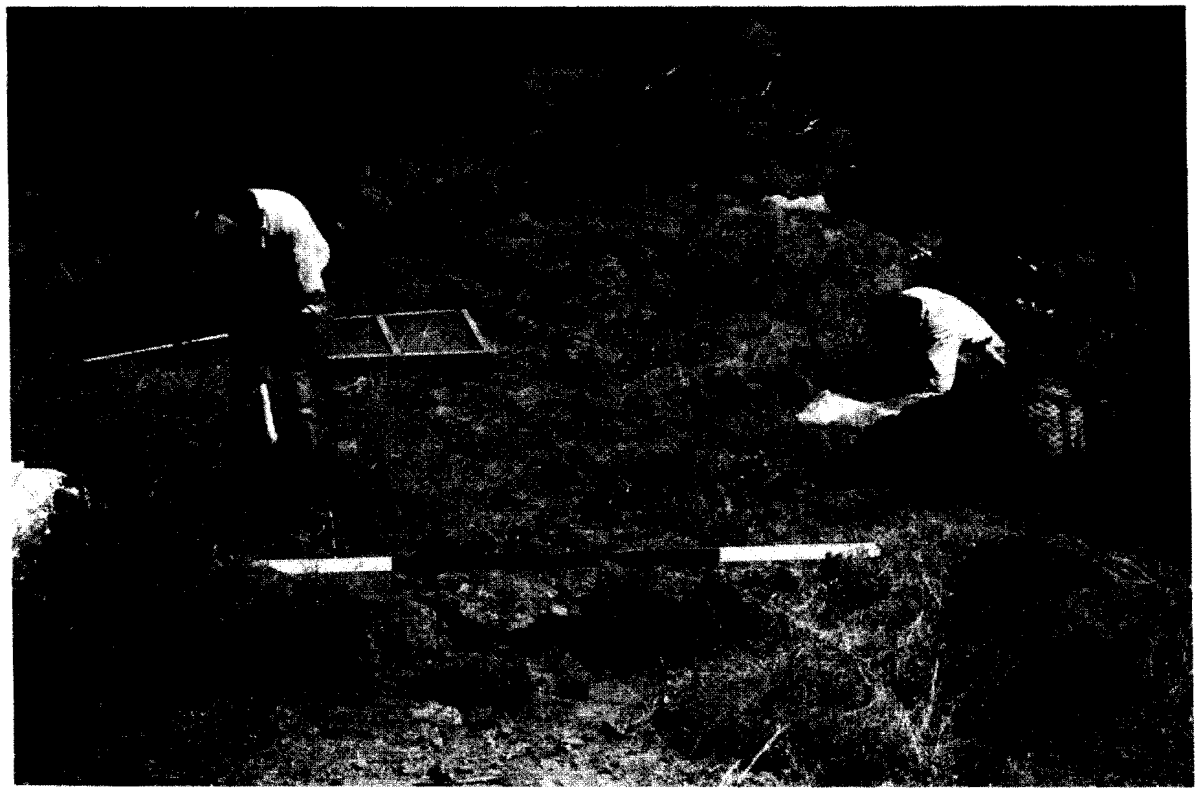


Figure 12: View to north showing test excavations underway at an obvious rock alignment across old game trail at the north end of 5DT771. The lithic scatter was concentrated just to the left of this alignment. July, 1986.

Figure 13

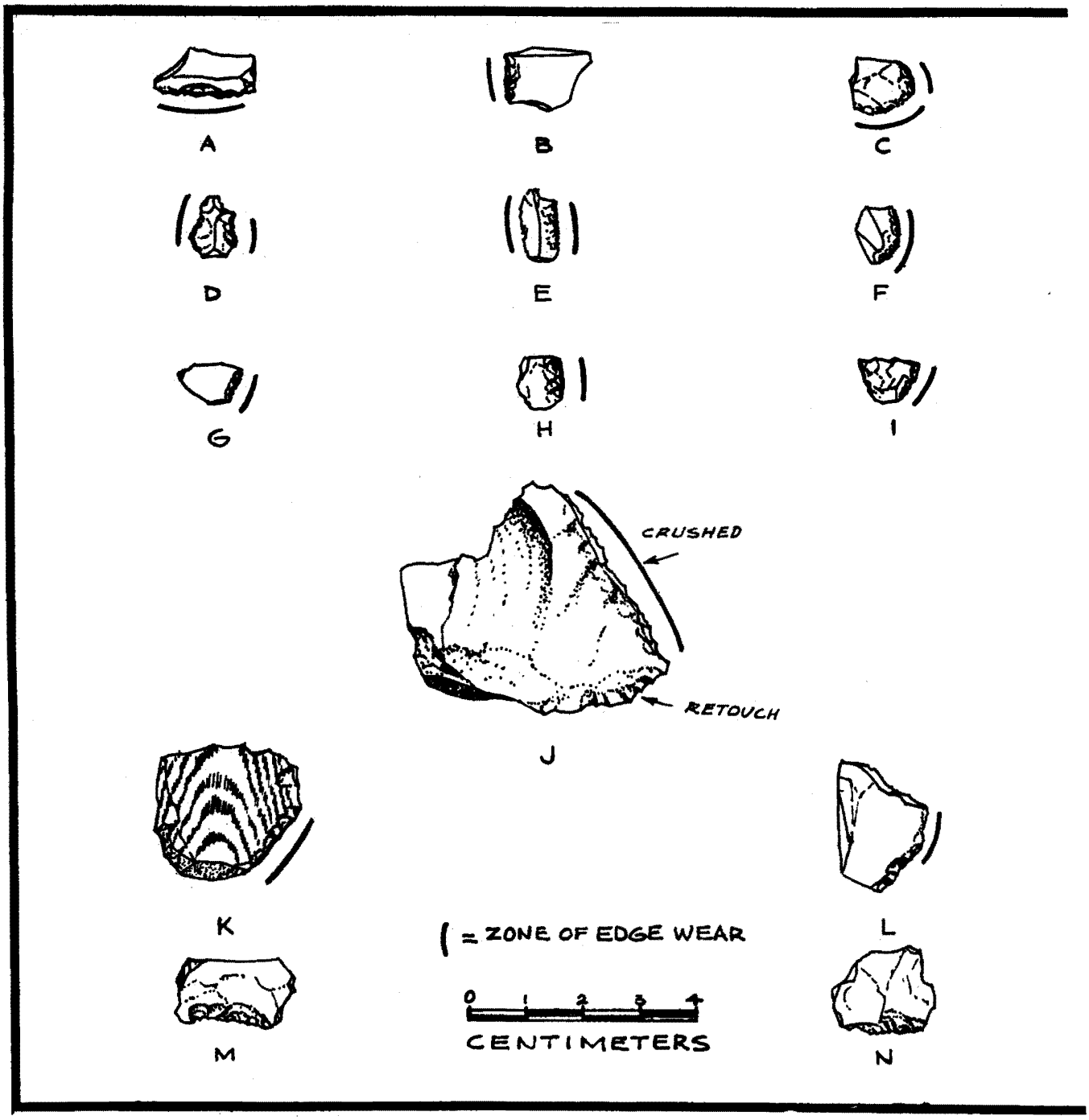
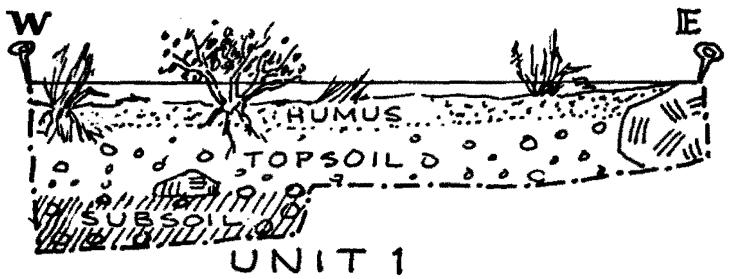
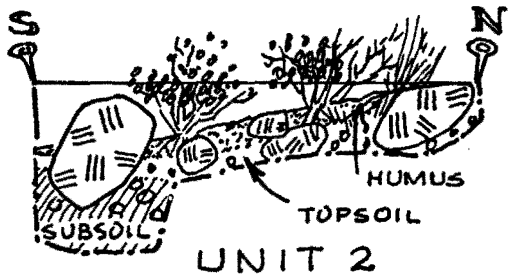


Figure 13: Lithic killing and butchering tools from the Ridge Site (5DT771). Illustration keys to Table 5. H and I are biface fragments, possibly of projectile points. J, K and L are retouched flakes, presumably meat knives. M and N are end scrapers. A, B, C, D and E are utilized flakes which were presumed meat knives also. F is an expended core, presumably used as a meat knife. All are shown actual size.

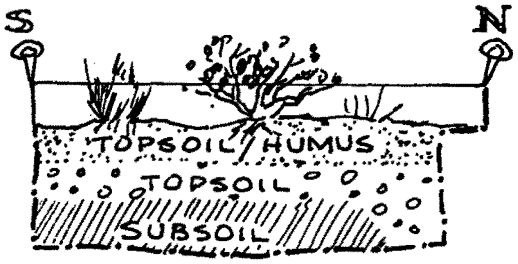
FIGURE 14



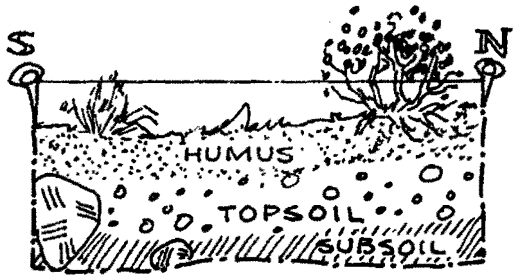
UNIT 1
NORTH WALL
(NEGATIVE)



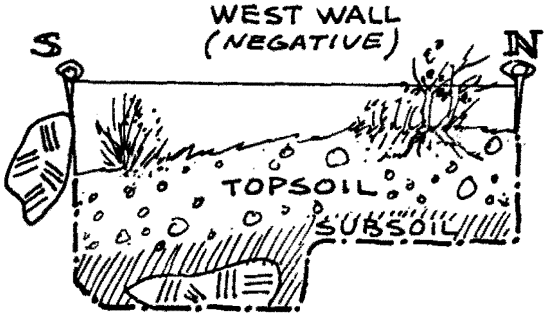
UNIT 2
WEST WALL
(NEGATIVE)



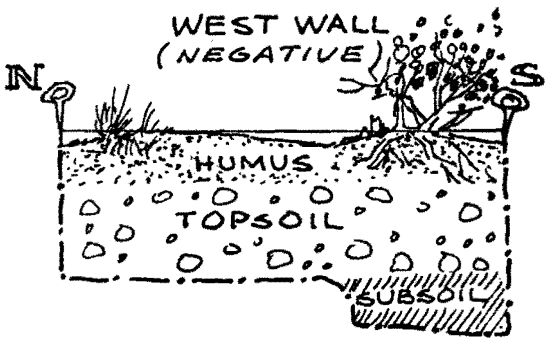
UNIT 3
WEST WALL
(NEGATIVE)



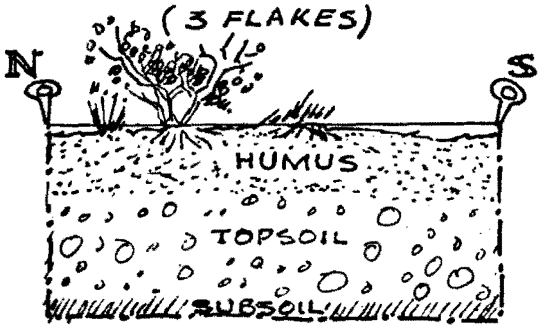
UNIT 4
WEST WALL
(NEGATIVE)



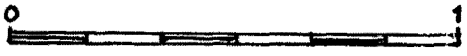
UNIT 4A
WEST WALL
(3 FLAKES)



UNIT 5
EAST WALL
(NEGATIVE)



UNIT 6
EAST WALL
(NEGATIVE)



METERS

- ALL TOPSOIL, INCLUDING SOD, IS LIGHT BROWN DELSON STONY LOAM
- ALL SUBSOIL IS YELLOWISH BROWN DELSON STONY CLAY LOAM

FIGURE 14:
THE RIDGE SITE - 5DT 771
SOIL PROFILES OF TEST PITS
AT GAME KILL AREA
JULY, 1986

CRI

context and cultural identity as these elements might together indicate potential for yielding information important in the local prehistory of the North Fork Valley. If such potential were indicated, the site might be determined eligible under eligibility Criteria D of the National Historic Preservation Act. A report was also to be prepared in keeping with Bureau of Land Management and State Historic Preservation Office standards (BLM 1981 and Colorado Historical Society 1986).

Of primary importance in the test work at the Ridge Site was the subject of aboriginal hunting methods and particularly the use of game drives. A search was made in the central computer file in the State Archaeologist's office in Denver. This search was for prehistoric game drive systems and/or blinds recorded throughout Colorado. The goal of the search was to find out how many such sites had been recorded and how they were evaluated in terms of National Register eligibility. The search revealed that 67 such sites had been recorded and that all 67 involved game blinds. Only 24 were noted as having formalized game drive lines associated. Of the 67 sites, only 12 had been recommended as Register eligible at the time of field assessment. The rest either were not assessed or were thought to be ineligible or in need of further evaluation. Of these, only three sites had finally been determined eligible. These included two sites in Gunnison County and one in Rio Grande County.

The file search indicated that very few such resources had been formally evaluated and that very little had been determined about their potential informational content relative to gaining a better understanding of prehistory. This was confirmed through conversation with State Archaeologist Leslie Wildeson (Wildeson 1986) who indicated it was too early to say much about their potential since so few had been formally evaluated. It was her opinion that until such time as test excavations were conducted, it was best to treat them as potentially eligible. Such an approach was used in reference to 5DT771.

A review of the regional literature indicated that Benedict's writings (Benedict and Olson 1978; Benedict 1975, 1975a, 1985) contained the most comprehensive analysis of communal aboriginal game drive systems in the state. His work confirmed that such systems are fairly common and often reflect considerable effort in their construction and maintenance. He emphasized the use of topographic features such as "passes and ridges where natural features such as cliffs and snowbanks aided in guiding the animals from grazing areas to predetermined kill sites" (Benedict and Olson 1978:5). Frequently incorporated with the natural features are conspicuous structures such as dry laid stone walls and rock cairns often combined with natural blinds such as boulder piles. Benedict and Olson (1978:13) noted that tests of two circular enclosures thought to have served as blinds, yielded "no discernible fill, no artifacts, charcoal, or other evidence of human use". A major point in Benedicts's work is that ambush rather than trapping or jumping as practiced on the Great Plains is particularly characteristic of arctic and alpine environments and that such systems of ambush are common throughout much of the world (Benedict 1978:71). In a later

work, Benedict went on to state the "drive systems can be recognized by their dry laid stone walls, lines of cairns, and circular or semi-circular blinds, generally occurring in combination" (1985:84). Benedict stresses that the essence of a communal hunt in the high country involved "drifting" animals to the designated kill area. In this regard, he suggests that the game might be aware of danger and drift away from it but would be kept from serious alarm. "There would be no pell-mell stampede to death" as in the Plains bison jumping tradition (1985:85) as discussed by Frison (1978). In reference to the situation at the Ridge Site, it appears that a very fortuitious occurrence of natural blinds in the rocky hummocks of the ridge site combined with a very limited construction effort could have functioned very well in a communal hunt. The difficulty of distinguishing between man-made structures and natural or slightly modified natural rock structures is also pointed out by Benedict who goes on to state:

> In general, the best evidence that a structure was built by man is it's occurrence, in a rational sequence, with other, similar structures. (Benedict 1985:85)

Although enthnographic descriptions of communal game drives are scarce in regard to Western Colorado and its Ute and earlier occupants, enough information is available to indicate that they probably also used such systems (Smith 1974:53-55; Fowler 1986).

> In the fall, when the deer were moving down from the high country, piles of brush were placed at intervals on either side of the trail, converging at a point where a deep hole was dug and camouflaged with brush. When the deer fell into the hole, the hunter had an easy shot. Several deer might be caught in succession by this method, or short, converging wings of stones or poles would be piled up beside a trail to lead a deer to the place where the hunter was waiting to shoot him. Deer were also stalked on foot. Only one informant (U) said that the eyes of a slain deer were put in trees. Deer meat was divided among friends. (Smith 1974:53)

The above information and the topographic and observable archaeological situations at the Ridge Site led the project archaeologist to believe he was in all probability dealing with an aboriginal game drive system along the crest of the ridge at 5DT771. The workings of the presumed game drive system are mapped in Figure 9. The test excavations were subsequently focused in the presumed kill area at the north end of this system. The reconstruction is admittedly problematic. It is, however, offered as a reasonable explanation for the very limited features observed there.

The evaluation program began with an extremely intensive pedestrian survey of the ridge top and sides for about 50 meters north and south of the lithic scatter. This was designed to locate additional artifact concentrations and potential features. This was in addition to the original survey coverage. This portion of the evaluation indicated that

artifacts on the site surface were confined to the original focus on the game trail (Figure 10) and that potential features were also confined to this general area. In conjunction with this effort another less intensive but very thorough survey was made of the whole ridge top in an effort to try and locate additional features and artifacts. This effort failed to find anything other than many natural hummocks with boulders which could have served as excellent game blinds.

The test excavations were based on a 1 x 1 meter format. Individual excavation unit sizes were, however, designed to fit the presumed architectural feature being tested. The map in Figure 10 subsequently shows some variety among sizes and shapes of individual excavation units. The number, size and placement of the excavation units was rather subjective on the part of the field director. The presence of possible architectural features and areas where artifacts and/or intact topsoil were found were the only other determining factors involved in locating test pits. The amount of excavation was an arbitrary decision on the part of the archaeologist. When he felt he had enough information to evaluate the resource, excavations were discontinued. This is as opposed to the relatively common but more formal procedure of excavating a percentage of a site such as three or five percent as done at the nearby Roatcap Game Trail Site (5DT271) by this author (Baker 1986a). The procedure used at the Ridge Site is best termed "controlled shovel testing".

Excavation units were not established on a formal grid, but were formally mapped. Additionally, tight vertical controls were established for each pit. The shovel testing was therefore far from informal yet not a full controlled test. This method was selected because it was suspected that excavation returns from the site would be minimal due to the limited soil development evident. There was, however, at least some architecture present and the site was being treated as Register eligible until proven different. Additionally, few such sites had been excavated so there were few objective precedents to draw from.

Each excavation unit was established by use of a string line. Excavations were completed with a combination of shovel, picks, trowel and wisk broom. Excavations were conducted in natural levels of not more than 10 centimeters. One quarter inch mesh screens were used as appropriate to screen dirt from the topsoil of each test unit. Profiles were drawn and photographed. The site was mapped and the test pits backfilled. Colorado Westmoreland accepted responsibility for reseeding the ground surface.

Laboratory work involved washing and cataloguing of artifacts. A simple lithics analysis was completed by examining the edges of all the stone tools and debitage for signs of use/wear. Some comparative literature review was completed to see if the wear patterns observed were consistent with those generally found on butchering tools. The artifacts will be permanently curated at the BLM's Anasazi Heritage Center in Cortez, Colorado.

Excavation Summary

The intensive survey effort undertaken after the initial survey failed to locate any additional artifact concentrations or feature areas either on the ridge or in the site area itself. This effort confirmed that the maximum site area was about 50 meters along the ridge top and that the only artifact concentration was the narrow 10 meter long zone along the game trail at the north end of the ridge (Figure 10). Excavations were subsequently confined to this area as shown in Figure 10. The area shown in Figure 10 shows the maximum area of the site, which at the very most is about 50 meters by 15 meters.

Seven test units were excavated (Figure 10). All of these test units proved to be entirely negative except for units 1 and 4A. Unit one had a few small flecks of charcoal in the sod. This is believed to have come from recent fires on the ridge caused by lightening strikes. Unit 4A yielded three small flakes of high quality tool stone. These were in the first 10 cm below ground surface. In summary form, the units are:

Test Pit No. 1 is a 1.5 x 1 meter unit excavated to a maximum depth of 30 cm below ground surface. It was established at the edge of the game trail and lithic scatter under a large serviceberry bush where there appeared to be a chance for some intact topsoil as opposed to the trail area itself which had eroded to the natural subsoil. The unit yielded a few flecks of charcoal in the sod. No artifacts or features were encountered. The profile was entirely natural and indicated that topsoil development was weak and that the rest of the site surface had probably been substantially eroded (Figure 14).

Test Pit No. 2 (Figures 10 and 11) is a 1.5 x 1 meter unit excavated to a maximum depth of 20 cm below ground surface. It was established behind a large basalt boulder which could have served as a game blind and which might have an uneroded soil profile. This unit produced no artifacts or archaeological features. The soil profile (Figure 14) was wholly natural with weakly developed topsoil.

Test Pit No. 3 (Figures 10, 11 and 14) is a 1.5 x 1 meter unit established downslope from a presumed game blind and designed to test the central portion of the ridge as a possible uneroded source area for the lithics found along the trail to the west. The unit was excavated to a depth of 25 cm below ground surface and was entirely negative. It showed a natural soil profile with weakly developed topsoil.

Test Pit No. 4 (Figures 10, 11, 12 and 14) is a 1 x .5 meter unit established on the edge of the game trail beneath a large serviceberry bush where an intact uneroded soil profile was anticipated to have been preserved. This location was also within the area where lithics had been found on the ground surface. The unit was also designed to test the soil upslope

behind an alignment of small basalt boulders across what may be an abandoned game trail. The unit was excavated to a depth of 30 cm below ground surface and revealed a wholly natural soil profile with no lithics or other archaeological manifestations.

Test Pit No. 4A (Figures 10, 12 and 14) is a 1 x 1 meter unit established one meter east of Unit No. 4 and adjacent to the alignment of small basalt boulders which appeared to block an abandoned game trail. The unit was designed to learn more about this alignment and test the central area of the ridge for buried archaeological material. This unit yielded 3 small utilized flakes of high quality toolstone (Figure 13) in the first 10 cm below ground surface. This unit had little or no humus (Figure 14) but yielded a natural soil profile consistent with others on the site. It was excavated to a maximum depth of 30 cm below ground surface.

Test Pit No. 5 (Figures 8, 10 and 14) is a 1 x 1 meter unit which was established in the southern portion of the site in the center of a cluster of large basalt boulders which formed a rough square (Figure 8) but which are thought to have been placed naturally. The unit was placed in this position to test the soil profile in this area of the site and particularly that within the rock square. A few small flakes of tool stone had been found on the game trail at the northwest corner of this rock square. The unit was excavated to a maximum depth of 40 cm and was negative. It was found to be extremely rocky with a fully natural profile (Figure 14).

Test Pit No. 6 (Figures 8, 10 and 14) is a 1 x 1 meter unit established at the south extreme of the site adjacent to an alignment of small basalt boulders beside the existing game trail. It was designed to test the north side of the alignment. It was excavated to a depth of 40 cm below ground surface and was entirely negative. It yielded a very rocky yet fully natural soil profile.

The excavation program indicated that the ridge crest was badly eroded of topsoil except in sheltered locations behind boulders and under bushes. The excavations further indicated that the lithic flakes were coming from the surface and top 10 cm of topsoil and colluvium. It was further confirmed that the lithic scatter was vary sparse and generally confined to the area where it was first noted along the game trail at the north extreme of the site. No culturally diagnostic tools were found, although use wear patterns on the artifacts, as will be discussed, suggest they are elements of an aboriginal butchering kit. It was not possible to confirm that the hand of man was involved in any of the rock features at the site. However, a comprehensive analysis of the topography of the entire ridge top and adjacent mesa and bluff area with connecting game trail and the confirmed archaeological manifestations and problematical ones, as well as comparative archaeological and ethnographic sources, suggests that 5DT771 was the site of a big game kill in an aboriginal game drive and/or ambush plan.

The test program indicated that very little additional material culture could be found at this site without undue effort and even if recovered would probably not provide any new insight into the cultural and functional identity of the site.

Architecture

The Ridge Site and the ridge on which it is situated is cautiously interpreted as a problematic prehistoric game driveway. It is believed that a small drive or ambush system primarily utilized natural topographic features in its operation except near the north end of the ridge. At that point, due to scarce vegetation, it may have been advantageous for the hunters to construct simple stone alignments on or adjacent to the game trail. The rock alignment (Figure 10) at Test Pits 4 and 4A is simply a single course of small dry laid basalt boulders. It is probably man-made and is two meters long and appears to be situated at a right angle across an abandoned game trail. The rocks show a heavy growth of lichens which suggests they have not been moved in some time (see Benedict 1985:43). Since the alignment was narrow and only one stone wide, it is questionable that it ever supported additional coarses of rock. It seems to be nothing more than a simple one course alignment. It is important to note that the game trail may have taken a new route from this point after the alignment was placed there. This is by no means certain but can be seen in Figure 10. The second alignment at Test Pit 6 is about the same length (2 meters) as that at Test Pit 4. It is similarly constructed but there is no evidence of an abandoned trail there. If it once did block a trail, it was prior to the time substantial pinon and juniper trees began to grow on either side of it. The rock alignments may have been part of structures which also had perishable elements, such as branches or hides in their construction.

The alignments may have served as psychological blocks for the game animals that could have caused them to hesitate and perhaps mill about. They could also be part of some form of blind structure. Suggestions on the problematic operation of the hunting system are outlined in Figure 9. It is believed that the intended game was most likely elk. The presence of a limited amount of lithic material and its confined distribution combined with a lack of evidence for much effort being placed in construction and maintenance of the drive system, argues against this area being the scene of much killing. The resource is considered to be very ephemeral, perhaps reflecting only one hunting episode in the mists of prehistory. It is important to note, however, that the types and percentages of lithic flakes which are believed to have served to butcher the animal(s), appear to be very similar to those recovered from 5DT271 just below the ridge on East Roatcap Creek. This site contains at least two very ephemeral components and one of these is very clearly a hunting camp where meat portions were seemingly processed. 5DT771 and 271 could be associated.

Material Culture

The only artifacts recovered were lithics and these were found at the north end of the ridge in or close to the area shown in Figure 10. All were found on the surface or within the first 10 cm below ground surface. Additionally, 75% or more of the artifacts were found in the one focus of artifacts along the game trail on the west edge of the ridge near Test Pits 1 and 4. No faunal materials were found.

A generalized analysis for evidence of obvious edge wear indicative of use/wear was performed. The artifacts were not subjected to microscopic analysis. The artifacts were catalogued according to the format in Table 2. Selected specimens are illustrated in Figure 13. The most important characteristic of this assemblage is in the low percentage of bifacial tools and the very high percentage of retouched and/or utilized flake tools. The assemblage is consistent with other flake tool assemblages which have been attributed to the meat and skin cutting functions of the aboriginal butchering kit (Wilmsen 1970:70; Semenov 1976:20; Hanes 1977; Frison 1979). Quantified edge angle studies have not been performed on this lithic assemblage. It has been observed, however, that angles seem to vary somewhat and that while a few are quite steep (Figure 13), most are not. Following Semenov's work (1976), Wilmsen (1970:70-71) has pointed out that meat and skinning knives can be expected to have even more acute working edges than bits associated with heavy wood and bone working. Edge angles more acute than 35-40 degrees are believed to be associated with meat and skinning practices. Wilmsen states:

> Edge angles in this size range are often not the result of retouch but are simply the natural edges of flakes which have been utilized in an unaltered state. (Wilmsen 1970:70)

Only two specimens in the Ridge Site assemblage have edge angles which appear to be steep enough to class them as scrapers. In Figure 13, these are specimens M and N (Table 5). The assemblage further reflects only four specifically shaped tools. These are fragments of two bifaces believed to be projectile point fragments and two end scrapers. Shaped tools, therefore, constitute only about 20 percent of the assemblage. There are only four unifacially worked flake tools which constitute another approximately 20 percent. The remaining 60 percent of the collection is made up of utilized but unretouched flakes with relatively acute angles consistent with butchering use.

As noted by Wilmsen (1970:73-74), the term "utilized flakes" refers to flakes not purposefully modified but used just as they came from the core. All flakes will bear use marks of some sort and usually have shallow edges in the 20 to 40 degree range. Utilized flakes were frequently used to cut meat and skin and it is "possible that most cutting of this kind was done only with unaltered flakes and not with formal tools".

Table 5: Artifacts from the Ridge Site (5DT771)

		Category	Fig. 13 Key	Material	Shaped Tool	Edge Wear	Worked Edge	Presumed Original Tool Type
	1	Bifacial Tool	i	WC	Yes	Yes	Yes	Tip of P.P.?
Bifaces 2	2	Bifacial Tool	H	WQ	Yes	Yes	Yes	Edge of P.P.?
	3	Unifacial Tool	N	GQ	Yes	Yes	Yes	End Scraper
	4	Unifacial Tool	M	GQ	Yes	Yes	Yes	End Scraper
	5	Unifacial Tool	L	GS	No	Yes	Yes	Retouched Flake Meat Knife
	6	Unifacial Tool	K	BPW	No	Yes	Yes	Retouched Flake Meat Knife
	7	Unifacial Tool	J	DB	No	Yes	Yes	Retouched Flake Meat Knife
Unifaces 6	8	Unifacial Tool	NS	WC with Cortex	No	No	Yes	Retouched Flake/ Meat Knife?
	9	Flake Tool	D	RC	No	Yes	No	Prismatic Blade Meat Knife?
	10	Flake Tool	E	BCH	No	Yes	No	Prismatic Blade Meat Knife
	11	Flake Tool	A	GC	No	Yes	No	Meat Knife

Table 5: Artifacts from the Ridge Site (5DT771) (Continued)

		Category	Fig. 13 Key	Material	Shaped Tool	Edge Wear	Worked Edge	Presumed Original Tool Type
	12	Flake Tool	B	WC	No	Yes	No	Meat Knife
	13	Flake Tool	C	PQ	No	Yes	No	Meat Knife/ Scraper
	14	Flake Tool	G	WC	No	Yes	No	Meat Knife
	15	Expended Core Tool	F	WQ	No	Yes	No	Meat Knife
	16	Flake? Tool	NS	WC with	No	No	No	?
	17	Flake Tool	NS	DB	No	Yes	No	Meat Knife
	18	Flake Tool	NS	BC	No	Yes	No	Meat Knife
Flakes 11	19	Flake Tool	NS	PQ	No	Yes	No	Meat Knife
Total Artifacts	19			19	4	17	8	Projectile Points = 2 End Scrapers = 2 Meat Knives = 13

Key: NS = Not Shown in Figure 13

Lithic materials by count: WC = White Chert = 5; WQ = White Quartzite = 2; GQ = Grey Quartzite = 2; GS = Grey Siltstone = 1; BPW = Brown Petrified Wood = 1; DB = Dark Basalt = 2; RC = Red Chert = 1; BCH = Brown Chalcedony = 1; GC = Grey Chert = 1; PQ = Purple Quartzite = 2; BC = Brown Chert = 1.
Number of presumed lithic sources utilized = 12

Table 5: Artifacts from the Ridge Site (5DT771) (Continued)

Bifaces to total site assemblage = 10%
Unifaces to total site assemblage = 32%
Utilized flakes to total site assemblage = 58%
Utilized flakes to total tool assemblage = 58%+
Unifaces to total tool assemblage = 33%
Bifaces to total site tool assemblage = 12%
Unutilized debitage to total site assemblage = 48%
Tools of all classes to total site assemblage = 55%

> It seems likely that any suitable flake that was readily available was utilized for a specific task and then discarded, perhaps to be used again for some later task or perhaps to be left where it fell. (Wilmsen 1970:74)

The lithic assemblage from the Ridge Site is interpreted to constitute part of a butchering kit for field dressing big game such as elk. It is not believed to be from the same kit as one would expect to find in the area where the kill was processed. It is presumed that the Ridge Site was only the location of killing and field dressing the animal and dismembering it into small enough portions for transport down off the steep ridge to the hunting camp(s). It is quite likely that the Roatcap Game Trail Site (5DT271) just below the ridge may be one of these. At this site there is at least one clear component which is certainly an ephemeral hunting camp where meat portions were further processed.

The lithic assemblage at the Ridge Site is important in that it is thought to have provided an example of the range of lithic tools discarded at the butchering station, possibly after only one animal was butchered. It also reflects the variety of tool stone which may have been available to one group of people involved in a communal hunt. Kvamme (1986:51) has suggested that tool kit sites such as this are probably male-related. For a communal drive system, however, there is no reason to preclude the participation of women and children, particularly along the drive line and at the kill point during field dressing. This is an important consideration in that the basic economic unit was probably the nuclear family in this region and, as will be discussed in Chapters 4 and 7, individual family households organized in deme clusters served as the residential bases in communal hunting.

The assemblage seemed to have a fairly high number of lithic types represented in so few flakes. Of 19 total specimens, there were 11 different categories used to describe the materials. There were perhaps that many different lithic sources represented. This would tend to support a view that several people may have been involved in the field dressing effort and each may have dipped into their own pouch to get the tools necessary to accomplish the task. Other than basalt, there is no known tool stone on the ridge itself and this may explain why there was so little evidence of lithic reduction in the assemblage. There also seems to be a size factor involved in the flake assemblage. As shown in Figure 13, the flakes are nearly all quite small. There is no specific standard of comparison that the author is aware of, but the flakes seem to be smaller than he would have expected and those generally discussed by Hanes (1977), Wilmsen (1970), and particularly Semenov (1976) as meat knives. Frison, however, indicates that small flakes can still be quite servicable in butchering whole animals (Frison 1979). The small size may be attributable to a suspected shortage of good tool stone in the area. A shortage of quality tool stone is suspected in the later post Archaic occupations at 5DT271. Could this have been due to a breakdown in Archaic trade networks? One local source of rather poor chert (Figure 3) is known in the area and one flake in the assemblage may be

from it. Archaeological sites are scarce in the area of East Roatcap Creek and lithic debitage is not abundant at the ones that are known. Scarcity and the need to conserve and wear tools completely out may, in part, explain what seems to be a small size factor in this assemblage. These subjects are, however, speculative at this point and only of concern in helping to guide future research.

Interpretive Summary

Ken Kvamme (Kvamme and Black 1986) developed a site type classification system while employed at Centuries. This system utilized data from the Mount Emmons Project in Gunnison County and is quite pertinent to the archaeology of Western Colorado and the eastern margins of the Great Basin. The system is discussed in Baker (1980) and has been used very effectively on various projects since 1980. The system uses a set of quantifiable variables to place a site in one of three major categories including Multiple Activity sites and Special Activity sites. The former includes habitation sites and short term camps. The latter chipping sites and tool kit sites. It also distinguishes two forms of raw material procurement sites. For the Mount Emmons Project, Kvamme also defined hunting blind sites and tool sharpening sites. The most important variables for typing Special Activity sites are: 1) a tool diversity index as a measure of assemblage tool diversity; 2) the projected number of flakes; and 3) the site area.

When applied to the Ridge Site, the system classifies it as a tool kit site since it has a very low tool diversity index, a very low number of flakes, and a very small site area for the main artifact producing area. Such sites "represent sites where a number of tools occur in association with a few flakes in a relatively concentrated area".

> These sites probably represent specialized tool-related activity areas. For example, a site with a few bifacial knives, a scraper and some utilized flakes from cutting and scraping activities may represent an area where an animal was butchered. (Kvamme and Black 1986:37)

At the Ridge Site, there are two different site types combined. These are the tool kit site just discussed and the game blind/drive line. Kvamme (1986:42) also defined the latter type of site.

> Hunting Blind Sites including two sites encountered in the survey which consist of small circular or semi-circular enclosures of boulders. One of these had two flakes in association. Benedict (1978:5-14) has described similar structures which he interprets as being hunting-related, in the Arapahoe Peaks area of north-central Colorado. These sites are, therefore, tentatively classified as being hunting blinds. (Kvamme and Black 1986:42)

Both hunting blinds showed low scores on the index variables of tool diversity, projected number of flakes, and site area. Tool kit sites have similar low scores except for the tool diversity index which Kvamme rates as intermediate (Kvamme 1986:45). Kvamme closes his

discussion of tool kit and chipping sites, on special activity sites, as possibly male related in the Mount Emmons project area. As mentioned, in the communal hunting situation suspected at 5DT771 it would not be surprising to find that men, women and children could have participated.

There were, however, no datable or otherwise diagnostic artifacts found at the Ridge Site. Just below the ridge, less than one-quarter mile down the hillside on East Roatcap Creek is the Roatcap Game Trail Site (5DT271) which has at least one identifiable Ute component. This is an historic short-term hunting camp with slab lined hearth and butchering areas. It is hallmarked by Uncompahgre Brownware ceramics which are presumed to be Ute. The site also has Formative Stage components which might also be associated with the Ridge Site. None of the sites in the project area appear to be earlier than the late Archaic. It is suspected that the Ridge Site also dates from the late Archaic or later.

In summary, the Ridge Site has been interpreted as being a tool kit site as defined by Kvamme (Kvamme and Black 1986). The lithic component is felt to be the result of an ephemeral aboriginal episode of big game killing and primary butchering. This apparently took place at a designated kill point in a simple communal game drive system that utilized both man-made and natural topographic features. No actual date range or cultural associations were established for this resource. Subjective impressions on the source diversity of the lithics do, however, suggest it could well relate to the late Archaic or early Formative stages. No faunal materials were recovered from the site.

CHAPTER 3

AN INTRODUCTION TO THE ROATCAP GAME TRAIL SITE (5DT271)

The Roatcap Game Trail Site (5DT271) (Figures 15 and 16) is located in the NE,SE,NE,SW of Section 23, T13S, R92W of the 6th Principal Meridian. It was first discovered and recorded on BLM land in June of 1978 by Barry Hibbets, Frank Eddy and Tom Bridge of Archaeological Associates of Boulder (Hibbets, et al. 1979). The site was defined as a lithic scatter and described as follows:

> 5DT271 consists of a scatter of artifacts exposed in bare spots within oak thicket; no hearths; site situated on bench overlooking Roatcap Creek. Secondary reduction, biface manufacture, indicated by thinning flakes and bifaces.
>
> (From Original Site Form)

The site was only known from three small clearings in heavy oak brush where bare ground made it possible to observe surface artifacts. Hibbets and Eddy mapped the artifact distribution and roughly outlined the site topography and situation. The site was covered in heavy oak brush and serviceberry and was essentially fully obscured by this heavy vegetation mantle. They measured the site at 78 m long by 20 m wide. This indicated the site was about 1,560 square meters in extent. They also noted that there was an historic Euro-American component at the north end of the site. The site was fully collected of artifacts by the survey team. The team further noted that the site had only light natural deterioration and little human disturbance. It was believed to have some depth. The original survey team believed the site was probably eligible for the National Register and needed to be formally evaluated with a test excavation program. According to the cultural chronology used by Archaeological Associates, the site was provisionally assigned to the "Late Post-Archaic Period" or about A.D. 950-1500.

Site Setting and Environment

5DT271 is located at 6,900 feet above sea level in the Transitional Life Zone where a mixture of pinon, juniper and shrub oak dominate. As shown in Figures 3 and 6 the site is situated on East Roatcap Creek near where it issues from the high bluffs above the North Fork Valley out into a high basin above the North Fork. This basin is simply known as "the Basin" (Figure 16) and has a complex geomorphic history that is not presently understood (Welt 1987). The site is located adjacent to an abandoned jeep road on the east side of the creek on the major game trail up this drainage. It is on a bench that was probably created by mass wasting. This bench is substantial by comparison with other terraces in the constricted valley of East Roatcap (Figures 3, 15, 16 and 17) where there are few flat spots.

Prior to the start of excavation, nothing additional had been learned about the site since its discovery in 1978. It was still

Figure 15: Overview of 5DT271. View is to southeast. The site is located to the right of the jeep road and its north limit is marked by the large clearing in the oak brush. August, 1986.

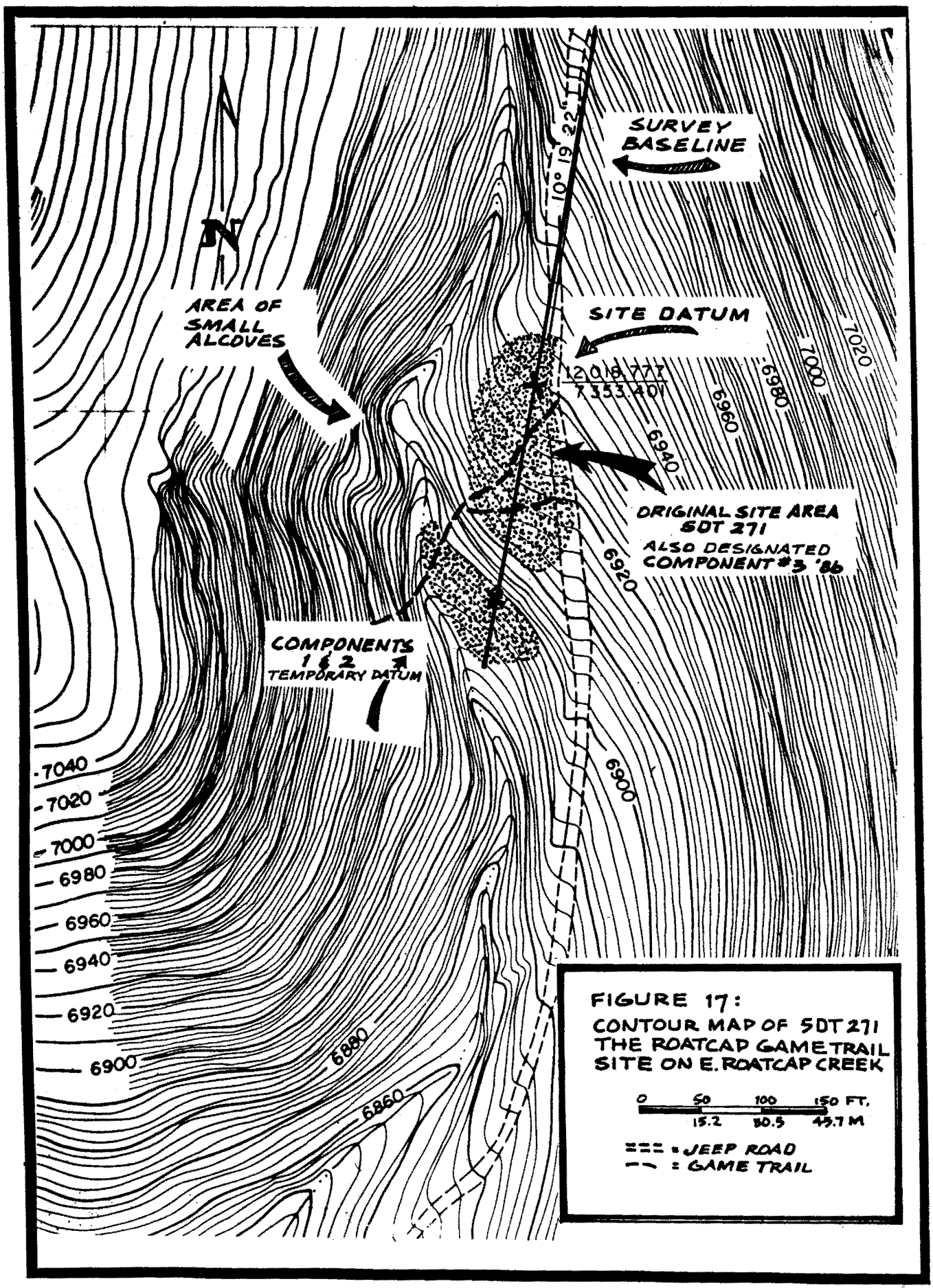
Figure 16: Overview to northeast overlooking the basin toward the mouth of East Roatcap Creek. 5DT702 is situated along road at arrow, in center background and 5DT271 is located further north along the road at arrow, just north of the exposed cliff face. August, 1984.

covered in a heavy mantle of brush. Only a few additional cultural materials could be seen on the eroded road surface. Very few artifacts were found in the oakbrush clearings even though they were numerous there in 1979. All the surface artifacts were collected in 1979. This confirmed that erosion was slow at the site. Two lithic tools were recovered from the road as the survey crew rode it on horseback while riding into other parts of the inventory area. These tools, a hafted biface and a small, corner-notched projectile point (Figure 54a,b), were not incompatible with the time range suggested by the original survey team.

The site is situated on the east side of the creek opposite a series of small sandstone alcoves that are slightly above the site on the west side of the creek (Figures 17 and 18). These alcoves are at the north end of an exposure of the Rollins Sandstone member of the Mesa Verde Formation. This member is characterized by whitecapped cliff exposures (Colorado Westmoreland 1984). This exposure is pronounced to the south and west of 5DT271 where large cliffs (Figure 16) evidence a few substantial dry alcoves high above the creek. None of these showed any evidence of occupation. The smaller alcoves at the site were draped in heavy vegetation and are considered to be a potential extension of the site. They were not noted in the 1978 survey of Hibbets and Eddy (Hibbets et. al. 1979) and were very heavily obscured by oak brush in 1986. They were, however, noted in the 1986 survey of CRI (Baker 1986) as potential prehistoric rock shelters. They were located in an area with the most evidence of prehistoric occupation in the entire 8,000+ acres of Colorado Westmoreland's study area (Figure 3). This evidence included the known component at 5DT271, the nearby Ridge Site (5DT771), 5DT702 and prehistoric isolated finds 5DT772 and 159-161. Additional sites were recorded on West Roatcap Creek in the Basin. There was also a small lithic source area noted on the high bluff just above the alcoves. The alcoves were recommended for a limited testing and evaluation program (Baker 1986:37) as part of the comprehensive inventory effort.

East Roatcap Creek is an ephemeral water source. It had run perennially due to diversion of overflow water into it from Overland Reservoir (Welt 1986). Although historic stream flow information is not available, it is suspected that the stream used to run nearly year-round except in the winter with a substantial flow when compared to the smaller and even more ephemeral streams in the area. Today a flow of 5 cubic feet per second is about average during late summer and may be similar to seasonal flows of the past (Welt 1987). Tree ring counts indicate some of the oakbrush standing on the site is 128 or more years old (see Appendix V). This suggests that the floral community at the site has not changed in more than a century. The archaeological work ultimately confirmed that it had not changed much in roughly 2,000 years. At about the Time of Christ, the area was somewhat more open with sage, pinon and juniper (Appendix II). This only indicates some changes within the same basic Transitional Life Zone. The jeep road which passes through the site starts much further downstream and appears to follow an older, established game and stock trail.

FIGURE 17


SURVEY BASELINE
10° 19' 22" E
AREA OF SMALL ALCOVES
SITE DATUM
1201.777
7353.401
ORIGINAL SITE AREA SDT 271
ALSO DESIGNATED COMPONENT #3 '86
COMPONENTS 1 & 2 TEMPORARY DATUM
7040
7020
7000
6980
6960
6940
6920
6900
6880
6860
FIGURE 17:
CONTOUR MAP OF SDT 271 THE ROATCAP GAME TRAIL SITE ON E. ROATCAP CREEK
0 50 100 150 FT.
15.2 30.5 45.7 M
= JEEP ROAD
= GAME TRAIL

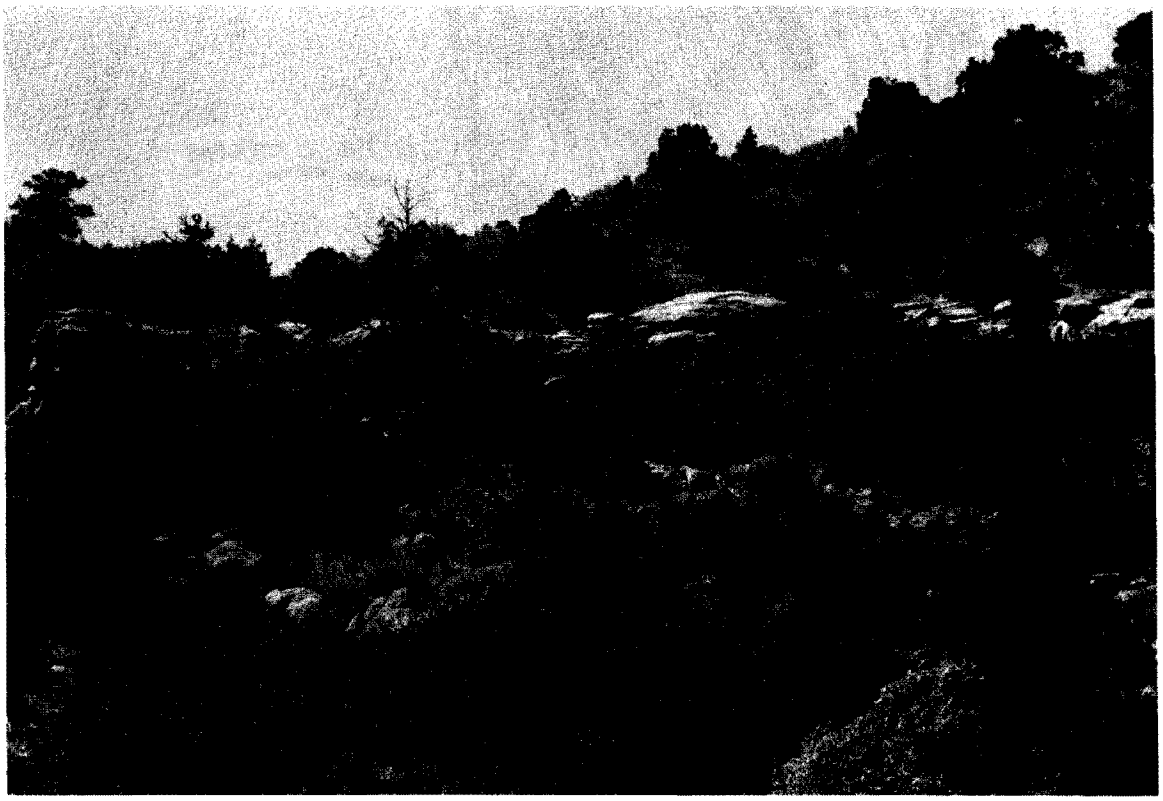


Figure 18: View to southwest across East Roatcap Creek from north end of 5DT271. Photo shows small, overgrown alcoves in the distinctive white Rollins sandstone which is extensively exposed in the Roatcap Creek drainage. August, 1986.

This trail was the main access route north out of The Basin and up East Roatcap Creek in historic times and probably prehistoric times. Although there are meandering game and cattle trails which follow the contours of the valley slopes in a general north-south orientation, the valley sides are so steep as to confine the main trail to the jeep road. The route of this road is, even then, quite rugged. It is not surprising that the highest concentration of prehistoric resources were found to cluster about this and other similar access routes in the study area. As may be seen in Figures 3 and 16, 5DT271 is located at the end of a funnel created where the creek emptied out into the large valley known as "the Basin". The side slopes of the bluffs on the east and west of the creek are extensively traversed by minor game trails, the most substantial of which crossed East Roatcap at 5DT271. On the west side high above the creek, areas of extensive game trails were the location of several isolated finds of aboriginal stone tools. Another substantial game trail comes from the West and converges with that in East Roatcap. This trail links East and West Roatcap Creeks. 5DT271 is situated outside this junction (Figure 17). It thus appears that 5DT271 was situated on a main game trail and route of human access along one of the few reliable sources of water in the local area. Additionally, the site is located at a point where numerous meandering game trails appear to converge at the steepest point in the creek's canyon. The game kill site and probable game drive/ambush system at 5DT771 is also on the ridge just above 5DT271 less than one-half mile away (Figures 3, 6, 16 and 17). Overall, the site appears to be situated at a strategic point where numerous resources, namely water, game, lithic materials, access route and reasonably flat ground were available. Evidence of a concentration of big game, namely deer, elk and bear was noted by CRI's inventory crew. Scat, trails, rubs and bedding sites seemed to focus about the point where the creek emptied into the Basin.

The site is located at the upper edge of the Transitional Life Zone with its mixture of pinon, juniper, oak and sage. It's situation includes a Riparian Zone with it's willows and cottonwoods. The site is well below the aspen of the Montane Zone. The heavy oakbrush remains very dominant over the pinon and juniper for a considerable distance north of 5DT271. This conspicuous band of oak serves as a prolonged ecotone between the Transitional and Montane Zone. This prolonged ecotone extends four or five miles north of 5DT271 where prehistoric sites again seem to cluster about it's edge. The edges of this zone are believed to be important in interpreting the settlement system of the area (Figure 57). The oak extends downslope into the Basin where extensive sage flats are present. The main pinon and juniper community is even further downslope toward the North Fork. On the south side of the bluffs above the Basin, the north extreme of the Pinon-Juniper vegetation community can be observed. Although there are only very limited amounts of pinon and juniper about 5DT271, the site appears to be located at a point about equal with the ecotone between the pinon-juniper and oakbrush. In this regard, the vegetation community about 5DT271 is best described as that of the mixed shrub type, although the type at the site itself is clearly the oakbrush with narrowleaf cottonwood dominant in the Riparian community along the creek.

The oakbrush and mixed shrub vegetation types characterize CWI's area of undertaking as well as the Roatcap Game Trail Site. These are described as follows:

> Oakbrush - This type contains Gambel oak as a dominant species and occurs as a dense stands of oakbrush clones in an almost continuous canopy. The height of the oak vary from 2 feet to 15 feet. Serviceberry is a conspicuous secondary shrub. Other shrubs include fendlerbush, squaw apple, bitterbrush and big sagebrush. The understory is sparse consisting of grasses, sedges and a variety of forb species. Within the study area this type occurred west of East Roatcap Creek and east of Stevens Gulch on deeper soils.
>
> Mixed Shrub - The mixed shrub vegetation type occurs along the ecotone between the pinon-juniper and oakbrush vegetation types. It is characterized by a mixture of species from both types. Within the study area, this type occurs on the east and west facing exposures of the ridge west of Stevens Gulch. Dense stands of Gambel oak interspersed with Utah serviceberry and snowberry is typical. Utah juniper, squawapple, fendlerbush and antelope bitterbrush occur in scattered patches on the shallow soils. Dominant herbaceous species include Louisiana sage, stiff goldenrod, and mountain pepperweed. (Colorado Westmoreland, Inc. 1986)

Soils at 5DT271 appear to be glacial tills that have moved downslope from the ridge tops and canyon walls via mass wasting and sheet wash. As till colluvium, these soils largely derive from Quaternary glacial deposits of middle to late Pleistocene age. These deposits can be found on the ridge above 5DT271 and 771 and are characterized by unsorted, subangular, poorly consolidated pebble to boulder-sized detritus. These deposits are often modified via landslides that have left irregular hummocky topography. The Quaternary alluvium-colluvium of Pleistocene and Holocene age consists of variable mixtures of clay, sand, silt with some larger rock fragments formed by slow downslope movements of near surface material that has been locally reworked by fluvial processes (Colorado Westmoreland 1984; Ness 1986).

At 5DT271 these redeposited glacial materials show the wholly unsorted characteristic of tills. They are, therefore, frequently referred to herein as "colluvial till" or "till colluvium" which simply denotes they are unsorted glacially derived colluviums with no evidence of stratification within units (See Butzer 1964:101 or Thornbury 1965:386). These till colluviums have no size assortment and lithologic and mineralogic heterogeneity are the norm. All kinds of rock are present and range from unsorted pebbles to boulders of all kinds including all shapes of sandstone. Hemetite and ocher were also conspicuous in this material. The ground surface evidences massive boulders.

The U.S.D.A. Soil Conservation Service has classified the soils at 5DT271 as Delson Very Stony Loam. They characterize the soils as well drained with slopes of 20 to 60 percent. Surface soils are "very stony

loam" and the subsoil "Stony and very stony loam". These soils evidence very rapid runoff and surfaces range from very stony to extremely stony with many large stones. From an archaeological perspective, the stony description is quite appropriate (Colorado Westmoreland 1984a; U.S.D.A. 1980).

Investigative Strategies and Methodologies

The evaluation program at 5DT271 was initiated in keeping with the recommendation of the original survey team combined with additional ideas generated by acting BLM District Archaeologist Max Witkind, CWI's Environmental Specialist, Kathy Welt, and the project director. Four steps were originally proposed and these were: 1) clear the ground of duff and oak; 2) conduct controlled surface mapping of artifacts; 3) collect the surface artifacts, and 4) complete a test excavation program. It was agreed that the intensity of excavation would be limited to 3 to 5 percent of the site and that heavy equipment might be used if appropriate in support of traditional hand excavation methods.

The project was commenced on August 5, 1986. At that time, surveyors established a baseline on the site and tied it into the master topographic map of the area (Figure 17). A crew of 4 to 8 persons composed of Centuries and Colorado Westmoreland personnel used chain saws to clear the brush from the site. Brush clearing took four full days. Stratigraphic test excavations were begun on August 7. Arbitrarily placed test units were also begun in order to formally determine the site boundaries and the area from which to draw a random sample of units for excavation. A test unit was also initiated on a lower terrace to the south of the main site area to test for colluvial deposition of cultural materials. By this time, it was decided that surface artifacts appeared to be quite few and that raking of the surface would be nearly impossible due to the amount of stumps and roots which were present at ground surface. To implement a formal surface mapping and collection strategy would probably have yielded very little information since most of the site appeared to be buried. This step was therefore eliminated.

The initial excavations indicated that the area of original recording had a mantle of topsoil overlying a clayey loam colluvial subsoil and that cultural materials were confined to the top 25-30 cm above the subsoil which was apparently the original but eroded occupation surface. It also showed that the site was confined to the road and area to the west and that there were one and possibly two foci of occupation on the upper terrace. Both seemed to be right along the west edge of the road. The master grid coordinates were established over the site and an initial three percent sample was drawn. Excavations were begun but the full random sample was never completed because the site foci were found first and feature areas and site boundaries were generally determined without them.

The test on the lower terrace (Figures 17 and 21) revealed the presence of additional archaeological components and nearly doubled the size of the site. On the lower terrace, arbitrarily placed excavation units began to reveal at least two more components and these were excavated by metric excavation units.

Excavations were by hand methods. All soil was normally screened through ¼ inch mesh. Excavation proceeded mostly by natural stratigraphic levels, although some arbitrary levels were used. It must be pointed out that screening was inordinately time consuming due to the rocky nature of the soils. The soil matrix of the site was generally little more than gravel which bogged down screens and required laborious hand picking. The site was appropriately recorded and mapped according to routine archaeological methods. A provenience system utilizing small gridded operations, suboperations and lots was employed since it would have been too cumbersome to extend one master grid over the entire site.

The provenience system used in the excavation of 5DT271 is different than that routinely employed by other archaeologists working on prehistoric sites in Colorado. The typical practice of using numerical grid coordinates, feature numbers, or individual field specimen accession numbers with numerical provenience data was not used. Instead, a system of standardized nomenclature referred to as the "operations, suboperation and lot system" was used. This system has routinely been used in Colorado by Centuries Research since 1976, particularly in historic sites work, even though it is equally useful in prehistoric sites work. This system is an adaptation of one used by the University of Pennsylvania Museum, Parks Canada, the Institute of Archaeology at the University of South Carolina, and other agencies (Baker 1978b). While the system does impose standardized nomenclature on excavators, it does not necessarily involve any departure from traditional excavation methods. At 5DT271, a series of routine metric grids were utilized. However, rather than reference individual excavation units by grid coordinate, or record artifacts according to individual accession numbers and proveniences, each excavation unit and the artifacts from it bear exactly the same number. Under this system, each catalogued specimen bears the site number 5DT271 as well as a number such as 15D3 or 1A4 which denote the individual grid unit and level. The designation 15 and 1 refer to operations, D and A refer to suboperations and 3 and 4 refer to lots which usually correlate to natural or arbitrary excavation levels. The most important aspect of this system is that the archaeologist must clearly record what he is assigning the nomenclature to. Without that record, the labels mean nothing. In this regard, the system is somewhat paper heavy when compared to other systems.

At 5DT271, the excavations were commenced with a random sample of 1 x 1 meter squares at Component 3. The individual grid units originally were sequentially numbered from 1 up into the hundreds. In this instance, each 1 x 1 meter square was an operation with only one suboperation and as many lots as needed. In this regard, 258A1 simply refers to the first excavation level in Unit 258. The random sample was, however, abandoned soon after it was begun. Intuitive excavation units were expanded from either excavated sample squares or from the first arbitrary test pits. The initial numbers then became the operation numbers. For example, in Figure 45 the reader will note an Operation 2 Feature Area as well as one designated Operation 169. In the first case, the second arbitrary test pit was expanded to become Operation 2 and each successive 1 x 1 meter square was given an alphabetical suboperation designation as shown in Figures 44 and 51.

In the latter case, random sample unit 169 was similarly expanded as Operation 169 (Figures 49 and 52).

At components 1 and 2 on the lower terrace, a series of grid blocks were designated operations 12-16 and 4-5. Individual 1 x 1 meter units were designated as alphabetical suboperations. Figures 21, 29 and 39a illustrate the provenience designations for the grid units used in the excavation of these components.

Crews of 5 to 9 field laborers from CWI's mining crews were utilized for two five day excavation periods following the first week of brush clearing and initial evaluation. At the end of excavations, three to five percent of the site area had been excavated. A more detailed summary of excavation procedures is presented in relation to each of the three distinct components excavated at the site.

Analysis of flaked lithic artifacts was conducted in keeping with the basics of a format presented by Kvamme (Kvamme and Black 1986). The basics of this system distinguishes between categories of bifacial and unifacial tools as well as utilized flake tools which lack evidence of intentional manufacturing modifications. The tool categories can be summarized as follows:

Bifacial Tools

Hafted Bifaces

-Drills
-Hafted Knives
-Projectile Points

Unhafted Bifaces

-Preforms
1 -Bifacial Knife
-Bifacial Edges

-Choppers
2 -Cores

Unifacial Tools

-Perforators
-Spokeshaves
-Scrapers

Flakes

-Chunks
-Utilized Flakes
-Resharpening Flakes
-Blades
-Burins

Very little attention was given to the evaluation of tools in terms of function except to differentiate between basic tasks such as cutting or scraping. Kvamme (Kvamme and Black 1986) statistically tested the concepts of Wilmsen (1971) and Semenov (1964) as they relate to edge angles and differentiations between cutting and scraping functions. He found appropriate distinctions in edge angles. The more obtuse edge angles seem to be related to tasks such as chopping or scraping while more acute angles appear to be best suited for cutting tasks. In the evaluation of lithics from 5DT271 basic distinctions between edge angles were made with general assignments to either an acute (A) or obtuse (O) angle being made. These angles were not, however, formally measured because of the small sample size. Artifacts were simply grouped into one or the other classes. Many utilized flakes, however, showed obvious combinations of acute and obtuse angles and were classed as multipurpose tools such as flake "knife/scraper". Beyond such distinctions, very little effort was given to more precise assignment of tool uses. Kvamme pointed out the problem in such work just as Frison and Bradley (1980) and Frison (1979) have done. Some such observations are, however, ventured where flake butchering tools, particularly meat knives, are concerned. These are conspicuous in the assemblage from Component 1 in particular. The lithic analysis is presented in tables for each component. This allows for major trends in the lithics to be discussed as part of the site interpretation.

Laboratory work was conducted by Centuries in Montrose. This included routine washing and cataloging as well as the artifact analysis considered herein. Ron Rood of Archaeofauna Studies in Montrose performed the analysis of the faunal materials. Linda Scott of Palynalogical Analysts in Lakewood completed the pollen analysis. Meredith Matthews of Montrose conducted the ethnobotanical analysis. Radiocarbon dating was performed by Beta Analytic of Coral Gables, Florida and dendrochronological studies were conducted by the Laboratory of Tree-Ring Research at the University of Arizona. Obsidian source analysis was performed by the Agency for Conservation Archaeology at Eastern New Mexico University. This author performed all other analyses and interpretations for the project. All artifacts and samples generated by the excavations will be permanently curated at the Anasazi Heritage Center in Cortez, Colorado.

Surface Evidence

It is fair to state that prior to commencing the excavation program, 5DT271 was a pretty nondescript cultural resource. Other than the potentials suggested by the neighboring rock alcoves (Figures 15, 17 and 18), there were no surface indications that a site was present with the exception of a comparatively sparse scatter of lithic materials (Table 6 and Appendix VII). It is important to note that the cultural materials recorded by Hibbets and Eddy in 1978 were nearly all confined to clearings in the oak brush, including the jeep road, game trails, and a clearing for a historic hunting camp (Figure 45). In 1986, even these areas were largely devoid of cultural materials. The 1978 survey team seemingly collected all the artifacts they encountered. It also seems that the erosional processes that exposed these materials prior to 1978

Figure 19: View to the south over The Roatcap Game Trail Site (5DT271) after brush clearing of upper bench where Component 3 is located. Test Pit Number 2 is being excavated in area which became the Operation 2 feature area. August, 1986.

were going on slowly as very few additional materials were noted in 1986. As it turned out, cultural materials were found to be sparse in the site. The initial 1978 collections (Table 6) gave a rather misleading impression of the site contents. When the CRI crew returned to the site, it simply found a small terrace covered in a mantle of oak brush and serviceberry. The only reference points from the 1978 survey were the clearings where lithic materials were found (See Appendix VII). These correspond to the clearings shown in Figure 45. The 1978 survey team's datum could not be relocated.

There were very few cultural materials present, even in the clearings and along the road. During the course of the assessment work, a slab-lined fire hearth was found exposed on the ground surface. This hearth was on a lower terrace and heavily obscured by oak brush (Figure 21). This lower terrace component was not recorded by the 1978 survey team. The terrace did, however, reveal components 1 and 2 which were by far the most productive portions of 5DT271. It is important to stress that the lithic materials recorded and collected by the 1978 survey team marked the location of the least informative area of the site. The most informative areas showed no surficial evidence except for the slab-lined hearth in component No. 1. This will be discussed in more detail in Chapter 4. The clearing (Figure 45) on the north of 5DT271 may have been the location of an historic hunting camp as evidenced by beer bottle glass and cast iron cook stove parts. It was, however, seemingly impacted by construction of the road and a water bar. The other clearings shown in Figure 45 seem to be portions of game trails.

Subsurface Evidence

Excavations were begun on the upper terrace (Figures 17 and 20) and the main feature area was designated as Operation Area 2 (Figure 45). A living surface presumed to have been associated with a wickiup was found there. This living surface contained milling stones, a hearth and a few stone tools. All were found in one area about 12 by 6 m in size on the west edge and adjacent to the road. It appeared that the road had significantly impacted this area. No post molds or other architectural features were found. A small carbon sample was obtained from the hearth and yielded a poor date of 1940 ± 410 B.P. (Beta 18840). This area of the site was designated Component 3.

In contrast to the upper terrace, the lower terrace revealed two archaeological components in an excellent state of preservation (Figures 17 and 21). The uppermost component (Component 1) consisted of a slab-lined hearth and remains of an oakbrush wickiup of some kind in Operation Area 12. This component has been radiocarbon dated at 140 ± 50 B.P. and 180±40 or A.D. 1810 and 1770 (Beta 18088 and 35123). A third date (Beta 20209) for the component was 70 ± 60 B.P. or A.D. 1920 ± 60. As will be discussed, this date was initially rejected util it was calibrated at a two sigma level. The carbondates for the site are summarized in Table 5a. It had profuse deer and elk bone within and just beneath the sod. Lithic and bone butchering tools, a milling stone, Uncompahgre Brownware pottery and a Desert side-notched projectile point were also present. It was spatially and vertically separated from other components and is believed to be a pure historic

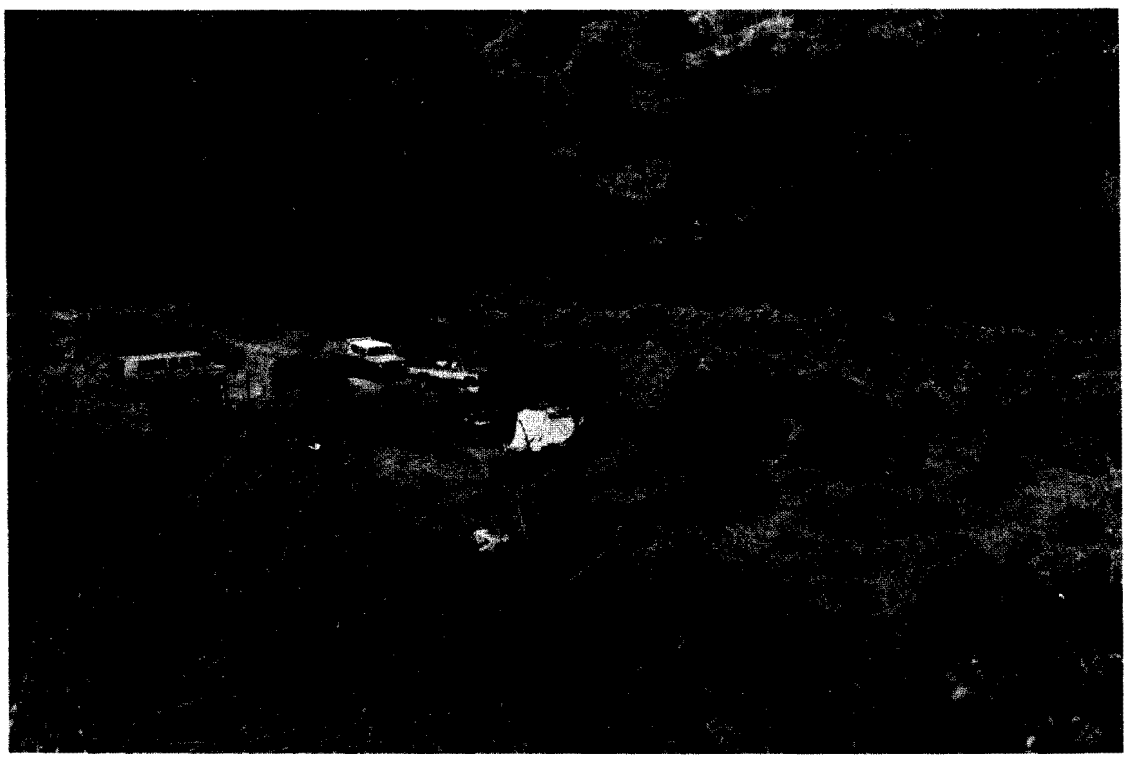


Figure 20: Overview to northeast of upper bench and Component 3 at 5DT271 at the end of the excavation program. Operation 2 feature area is shown in center of photo to right of trucks. August, 1986.

Ute ephemeral hunting camp. The component had no white trade items in evidence although oak wickiup poles appear to have been cut with a metal axe. The component was overgrown with mature scrub oak and was generally confined to the humus in the upper 30 cm of the soil profile. The main household activity area was less than 10 by 10 meters square and was almost totally excavated.

The second component (Component 2, Figure 21) consisted of a living area in coarse colluvial gravels and boulders next to East Roatcap Creek. This component revealed itself as a layer of reworked ash and cultural staining nearly a meter below Component 1. A distinct horizontal soil contact with clean gravel on one side and an ashy occupation surface on the other suggests the presence of some form of structure. It is suspected that this was a wickiup. The living area included large boulders and had a cobble lined fire ring in the center. Charcoal from this hearth yielded a radiocarbon date of 1190 ± 60 years B.P. or A.D. 760 (Beta 18089). The occupation is clearly an ephemeral one, perhaps a seasonal hunting camp. The material culture from the floor of the presumed structure included a millingstone, flakes and flake tools, a small corner notched projectile point and two small ovoid blades or preforms. The feature area was about 5 x 5 meters square and was approximately 80 percent excavated.

Table 5a: Summary of Radiocarbon dates from the Roatcap Game Trail Site (5 DT 271)

Component	Cultural Context	C^{14} Date	Beta Sample No.
1	Historic Ute	140±50 B.P./A.D. 1810	18088
1	Historic Ute	180±40 B.P./A.D. 1770	35123
1	Historic Ute	70±60 B.P./A.D. 1920	20209
2	Formative Stage	1190±60 B.P./A.D. 760	18089
3	Late Archaic?	1940±410 B.P./A.D. 10	18840

Table 6: Artifacts Mapped and Collected at the Roatcap Game Trail Site (5DT271) by Archaeological Associates in 1978. Compiled from original site form (All materials are from Component 3 on top of upper bench)

Specimen	Material	Description
1	Quartzite	Chopper
2	Chalcedony	Int. flake
3	Chalcedony	Int. flake
4	Quartzite	Int. flake
5	Quartzite	Int. flake
6	Quartzite	Int. flake
7	Basalt	Sec. flake
8	Quartzite	Bifacial retouched flake
9	Quartzite	Int. flake
10	Basalt	Int. flake
11		Int. flake
12	Basalt	Int. flake
13	Basalt	Int. flake
14	Basalt	Int. flake
15	Chert	Int. flake
16	Jasper	
17	Chert	Heat treated flake
18		
19	Basalt	Int. flake
20	Chert	Sec. flake
21		
22	Chalcedony	Bifacial retouched flake fragment
23	Quartzite	Unifacial utilized flake
24	Basalt	Sec. flake
25	Basalt	Int. flake
26	Basalt	Int. flake
27	Quartzite	Unifacial utilized flake
28	Chalcedony	Int. flake
29	Basalt	Sec. flake with unifacial utilization
30	Basalt	Int. flake
31	Quartzite	Int. flake
32		
33	Quartzite	Sec. flake
34	Chalcedony	Sec. flake
35	Basalt	Sec. flake
36	Chalcedony	Unifacial utilized flake
37	Chert	Unifacial utilized flake

Table 6: Artifacts Mapped and Collected at the Roatcap Game Trail Site (5DT271) by Archaeological Associates in 1978. Compiled from original site form
(All materials are from Component 3 on top of upper bench)

Specimen	Material	Description
38		
39	Quartzite	Sec. flake
40	Jasper	Int. flake
41	Quartzite	Int. flake
42	Quartzite	Int. flake
43	Chert	Int. flake
44	Chalcedony	Int. flake
45	Quartzite	Sec. flake
46	Quartzite	Armijo Style projectile point fragment
47		
48	Basalt	Int. flake
	Basalt	Flake with bifacial retouch
	2 (Chalcedony)	Int. flake

Historic materials from north end of site:
- beer bottle glass
- cast iron stove part
- cast iron stove lid

Note: Description categories are those of original survey team. See site form in Appendix VII.

FIGURE 21

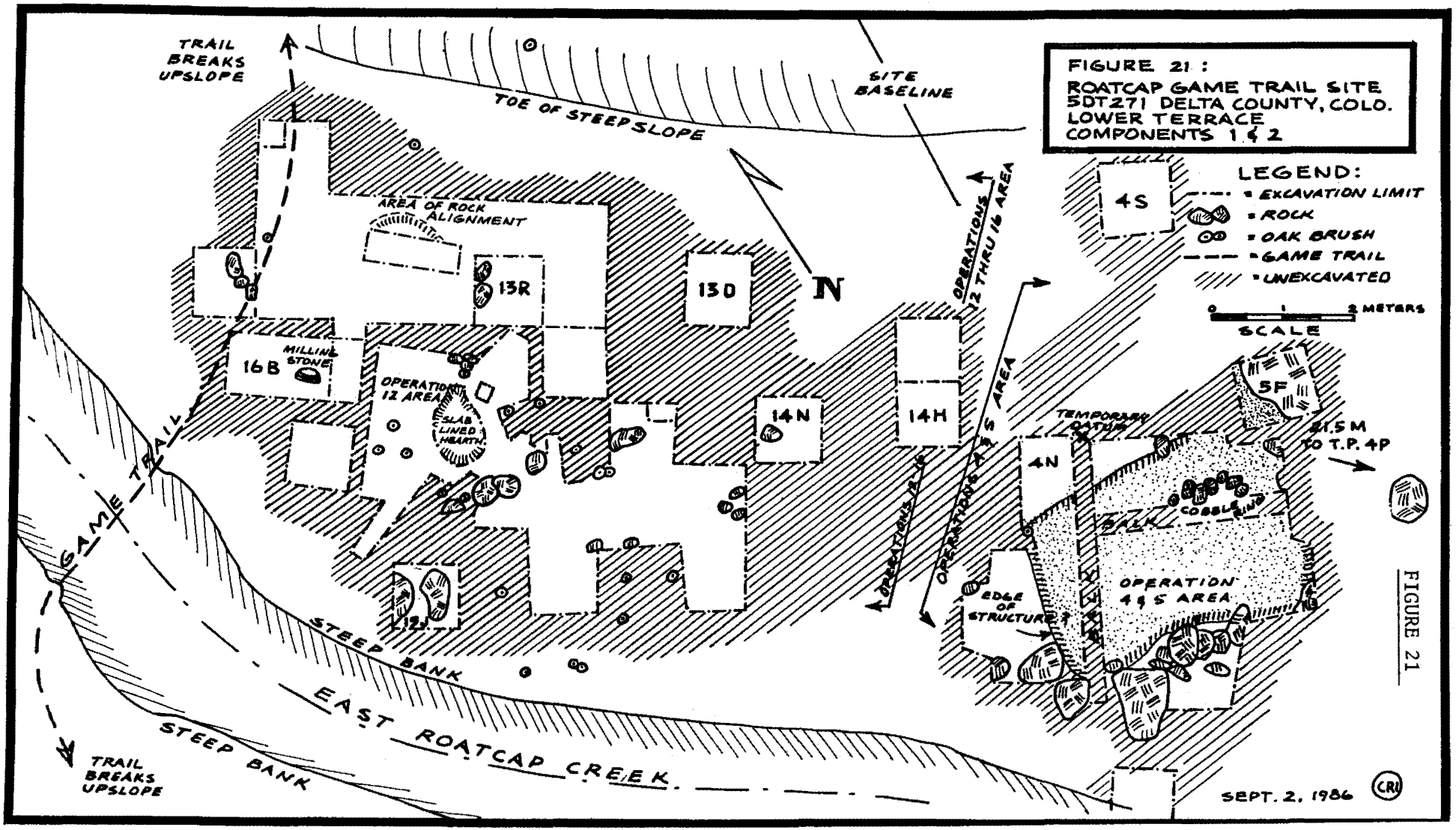


FIGURE 21

CHAPTER 4

COMPONENT NO. 1, 5DT271
THE ROATCAP GAME TRAIL SITE

Excavation Summary

A slab lined fire pit which had been overgrown by oakbrush was evident on the surface of the lower terrace at 5DT271 and led to the identification of Component No. 1 (Figures 21, 22 and 23). The surface litter and upper sod were stripped from over this feature and the immediately surrounding area. The hearth was then divided into four quarters. Excavation of the hearth fill and the living surface immediately adjacent to it was designated operation 12 with sub-operations A through K (Figures 21-24). A grid of 1 x 1 meter squares was then established over the west end of the lower terrace after the hearth was examined. Initial excavation of some of these units showed positive archaeological findings, primarily animal bone associated with a few flakes of tool stone. This grid was designated operations 13, 14, 15 and 16. Excavations were subsequently completed over most of the west end of the lower terrace in order to look for evidence of activity areas which might have been focused about the hearth.

The excavation procedure consisted of raking off the surface duff and then stripping the sod from the underlying colluvial till (Figure 25, Level III) which was the bottom of the original occupation surface. Cultural materials were found to be located on or just above this level. Animal bone for instance tended to extend up into the sod itself. This archaeological component was almost a surface component except for the fact that some sod development had begun to bury it. Animal bone was so near the surface that one could at times feel and hear it breaking underfoot when the sod was stepped on. The sod was broken up and the topsoil passed through one-quarter inch mesh screens. The interface zone from the bottom of the topsoil through the top of the underlying colluvial till was excavated as a unit. It was not possible to more finely separate the vertical levels due to the heavy roots and the gravelly nature of the site soils. All cultural materials from the sod to the top of the till colluvium are stratigraphically interpreted as being related to the occupation responsible for the slab lined hearth. A deep stratigraphic test pit in the living area just north of the hearth was designated operation 13R. This unit (Figure 26) produced a substantial amount of butchered elk bone along with butchering tools. These were confined to the topsoil and top of the colluvial till of layer III.

The sod on the entire lower terrace (Figures 17 and 21) was full of conspicuous charcoal and burned wood fragments. Additionally, there were a substantial number of decaying oak brush trunks and limbs in the sod and sometimes protruding onto the surface or buried under the litter and duff. There was no pattern in their distribution and they simply lay helter-skelter as if thrown about by a tornado. The limbs and trunks were as much as eight feet in length with some evidence of charring. Some of these are believed to be the remains of cut and

Figure 22: Lower terrace and Component 1 at 5DT271. Slab lined hearth is located at arrow, amid distinct grove of shrub oak. View is to northeast. August, 1986.

trimmed poles of a brush house or shelter. At least one specimen bears flat scars suggesting it was cut with a metal axe (Robinson 1989). Dendrochronological examination indicated that they had no sapwood present and that weathering had removed substantial portions of them. At least one specimen was at least 75 years old when it died, even though only 44 rings and pith were still present. This specimen was not more than five centimeters in diameter (See Appendix V). It was evident that these were substantial oak brush trunks/poles that had apparently been burned in a brush fire that consumed the entire lower terrace. Subsequent revegetation had produced the oak thicket which mantled the site in 1986. The fire had left charcoal and charred sticks in the sod and topsoil (Layers I & II) above the till colluvium of Layer III (Figures 25 and 26). This charcoal was present in these same levels where they partially overlay the more deeply buried remains of component 2 and the east portion of the lower terrace. As a result of this fire, it was generally difficult to differentiate charcoal from the occupation of the living area around the slab lined hearth and natural and cultural wooden elements burned and damaged in the brush fire. There was little stratigraphic distinction except that the charcoal from the brush fire appeared to be higher up in the sod and duff as opposed to being concentrated directly on the living surface. Some rocks and tools found on the living surface of the till colluvium (Layer III) were soot blackened on their upper surfaces (Figure 34). This is interpreted as an indication that they were covered with flammable duff at the time of the fire. This smouldering duff would have served as a smothering fire which soot blackened the stones in a fashion similar to the oxygen reduction techniques used to smotherfire pottery.

Dating Concerns

It was obvious that the brush fire at component 1 must date from the same time or later than the occupation. The component yielded no historic Euro-American or other precisely datable elements of material culture. It was, therefore, not possible to readily determine if the occupation was late prehistoric, protohistoric or historic. It is also well-known that the Post-16th Century deVries effects (Taylor 1987:35) generally make it difficult to use C^{14} determination to date historic period Indian sites. In this case, however, the lack of any other dating criteria made it imperative to attempt to use C^{14} to date this component. A good charcoal sample was obtained from beneath the sod along the south edge of the slab-lined hearth. This sample yielded a reliable date of 140 ± 50 years B.P. or A.D. 1810 ± 50 (Beta 18088) for either the death of the wood used to fuel the aboriginal fire or for the wood killed and/or already dead or burned in the later fire. A second date was subsequently determined for the remains of the one piece of oakbrush which bore evidence of having been cut with a metal axe. This piece of wood represented the inner rings of what was once a thicker piece of old wood, with an unknown portion of its exterior having rotted away. The initial radiocarbon determination (Beta 35123) was 180±40 B.P. or A.D. 1770 for this axe-cut piece. Since the outer rings were gone, there was almost certainly a problem with the "old wood effect" and the date should be younger. Still, even with these two dates, all we really knew was that the 1810±50 and 1770±40 dates should only approximate the time of the occupation and subsequent fire. The date

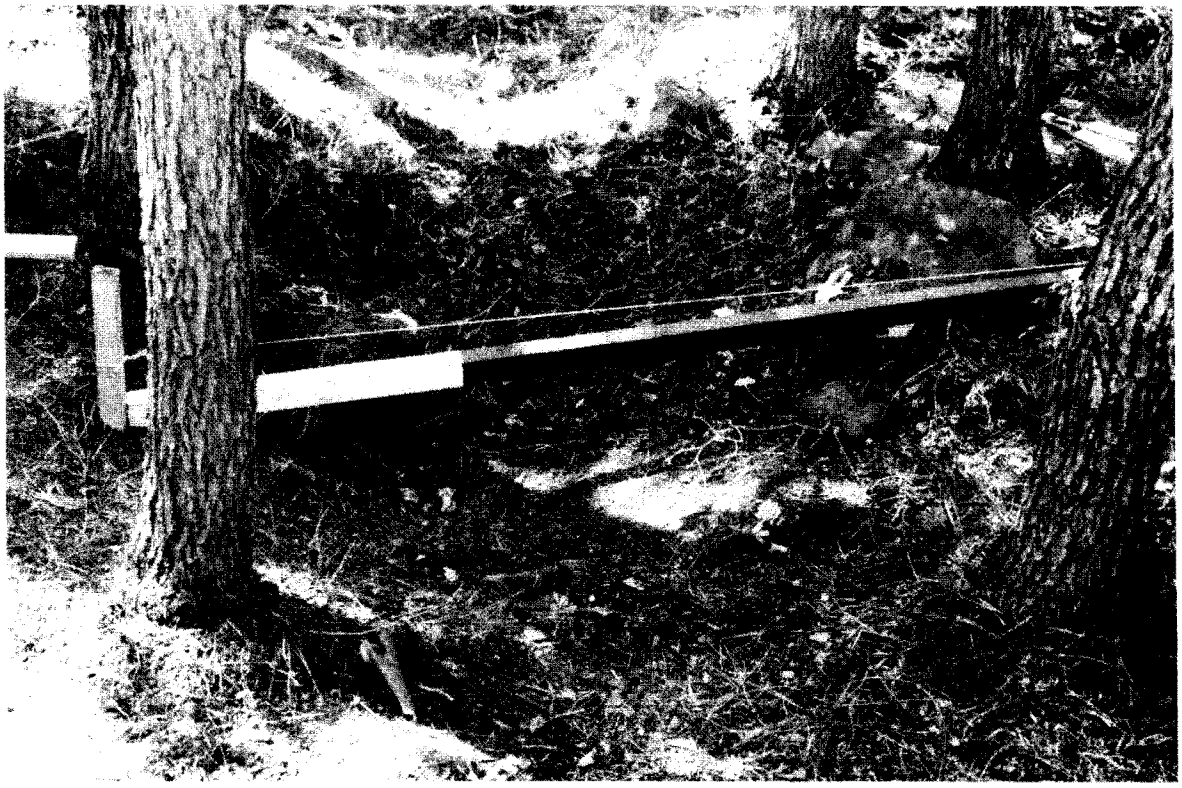


Figure 23: Slab lined hearth of Operation 12 area in Component 1, 5DT271 after raking of ground surface prior to excavation. View is to southeast. Scale is in .5 meter increments. August, 1986.

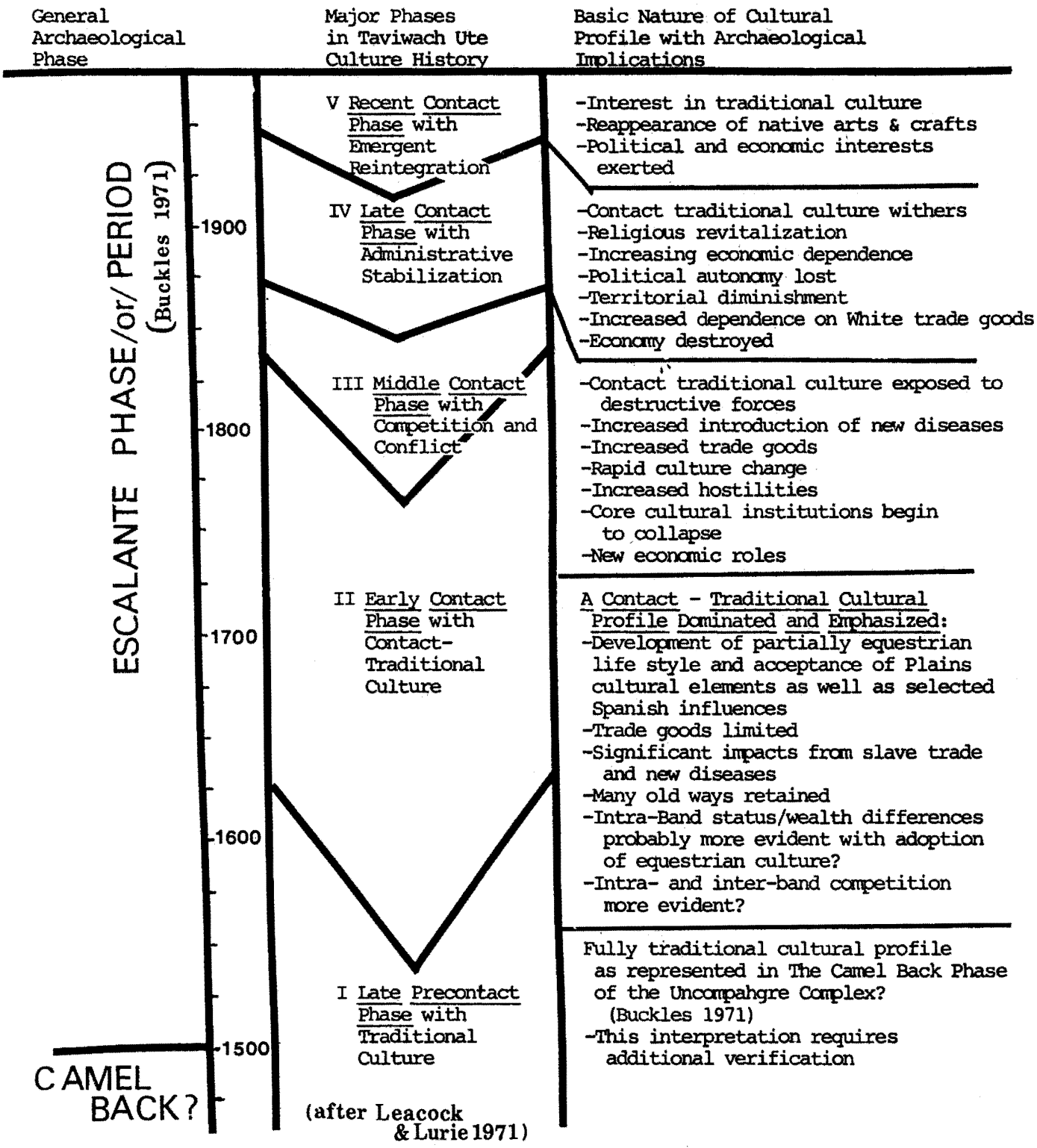
ranges for the two C^{14} samples were subsequently calibrated at a two Sigma level according to Stuiver and Becker (1986). The resultant ranges were A.D. 1650 to 1950 for the charcoal near the hearth (Beta 18088) and A.D. 1646 to 1955 for the axe-cut pole (Beta 35123). Yet a third date from a small piece of intact wood from the hearth fill (Beta 20209) yielded an uncalibrated date of 70±60 B.P. or A.D. 1920±60. This was initially rejected. However, after it was similarly calibrated at a two Sigma level, it produced a date of A.D. 1667-1955 which appears to fit neatly with the other dates.

In an effort to more closely date this component, a cross section of the biggest living oak tree beside the hearth (Figure 24) was submitted for tree ring dating. It seems certain that the oaks beside the hearth post-dated the use of the hearth and also had to post-date the brush fire which had later swept the terrace. This living tree measured 12 centimeters in diameter when cut in 1986 and was determined to be 128 years old. It was a mature tree compared to others in the grove. It started growing in 1858 (Robinson 1986; See Appendix V) and indicated that the fire occurred prior to that date. Discussions with BLM personnel indicated that oak brush usually reappears very soon after a fire which actually improves growing conditions (Orazem 1987). Formally speaking, the dendrochronological evaluation was successful in that it bracketed the end of the C^{14} based occupational date range and clearly placed it prior to 1858. It would subsequently appear that on the outside, the date ranges for the death of the dated items in the component are 1650-1858, 1646-1858, and 1667-1858. At a two Sigma or 95% confidence level for the back dates, it would appear that the materials must have died within that period and conceivably some years prior to the 1858 date. In order to attempt to more closely date this occupation, the one Sigma calibrated dates were examined. These suggested date ranges of A.D. 1668-1955 (1668-1858 for Beta 18088); A.D. 1658-1955 (1658-1858 for Beta 35123) and 1688-1955 (1658-1858 for Beta 20209). Taken at face value within these outside ranges, the initial dates of A.D. 1810±50 (Beta 18088) and A.D. 1770±40 (Beta 35123) do not seem out of line. The third date of A.D. 1920±60 would seem to be incompatible and is at least 60 years too late. This investigator is, however, confident that the sample of wood from the hearth fill is derived from the occupation of the site and believes its standard deviation, like the other two dates, contains that actual date when the organism died. In sum, without some elements of precisely datable historic material culture to help establish a terminus post quem date (Noel Hume 1969:69-70), it is perhaps wisest to simply say that the occupation could be from the late 17th or 18th Centuries and most likely dates to the latter 18th and could conceivably be as late as the first few decades of the 19th Century.

The attempts to refine the C^{14} dating were not fully successful and somewhat frustrating. It is, however, believed that the occupation is pretty obviously historic in date. The important point to consider is that any point within the C^{14} suggested date range would place the occupation within the Early Contact Cultural Phase of the Sabuagana/Ute history as indicated in Table 7. It is this author's suggestion that the basic cultural profile would have been much the same throughout this period because the Early Contact Phase would still have been dominant

Table 7

Table 7: Phases of Historic Culture Change for the Tabehuachi and Sabuagana Utes of West-Central Colorado 1500 - 1975



(From Baker 1988)

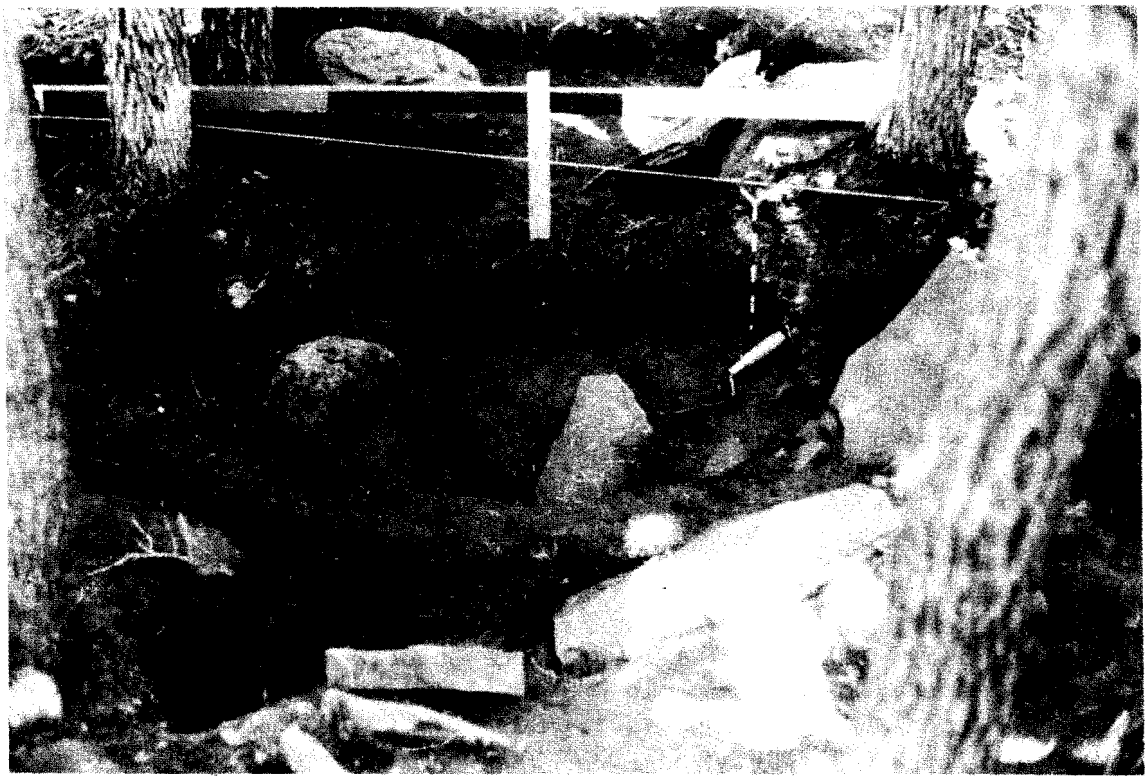


Figure 24: Slab lined hearth and surrounding living surface in Operation 12 of Component 1, 5DT271 during excavation of hearth. View is to south. Scale is in .5 meter increments. August, 1986.

and reflect many old ways in its Contact Traditional Cultural Profile until the Phase of Competition and Conflict would start to be ushered in by the second quarter of the 19th century (Leacock and Lurie 1971). It is at that time that the most dramatic shifts from an early Contact Traditional Profile would have been evident (see Baker 1988). White trade goods would not have been present in great numbers until after that time. It is not surprising to have few or no trade items from an ephemeral temporary Early Contact Period Ute site.

As mentioned, the fire which swept the lower terrace started after the occupation of Component 1. This fire is believed to have burned much of the valley and slopes of East Roatcap Creek. This is believed evident in the uniformity in the size of the oak brush which blankets 5DT271 and the neighboring hillsides. The prevailing winds are generally from the southwest during the warm months and it is suggested that these winds probably moved the fire from south to north or up the creek from the vicinity of the basin. This is only the authors suggestion. It should, however, be possible to delimit the general boundaries of this burn by mapping and comparing the vegetation. We do know that the fire did not reach the high south facing benches and ridges to the southwest of 5DT271. There one finds forests of massive pinon and juniper trees which may have ages of as much as 300 years or more (Orazem 1987).

The Utes were removed from Colorado in 1881. The occupation has to be prior to that time. No White trade goods were recovered, although there is a suggestion of a metal axe having been used onsite to cut a wickiup pole. The artifact assemblage left at the site was wholly aboriginal. Although it is inappropriate to draw inferences too far at the site of one small ephemeral household, the paucity of trade goods suggests the occupation took place in a local protohistoric period when there was little access to trade goods by local peoples. In West-Central Colorado, access to trade goods was limited in the 18th century. Rivera's expedition of 1765 (Cutter N.D. and Baker 1991) and the Dominquez and Escalante Expedition of 1776 (Chavez and Warner 1976) were the first recorded White intrusions into the region although some illicit Spanish traders had also been among the Utes of the area (see Baker 1988).

Even though some authorities have implied that significant culture change accompanied the early Spanish contacts with the Utes generally (Opler 1971 and Stewart 1966), the nature and degree of impact on the Taviwach and Sabuagana Utes of West-Central Colorado is uncertain, just as it is for the Chemehuevi and Southern Paiutes to the west on the Old Mojave Trail (Fowler and Fowler 1981:150-153). There it seems that trade goods were probably not conspicuous in the Southern Paiute material culture assemblage prior to 1776. Spanish impacts there would have been conspicuous in the introduction of new cultigens, disease, and slave raiding. Most trade goods there postdate 1776 and were often unimportant to some groups until the 1870's. The situation is believed by this writer to have been somewhat similar for the more removed Utes. That is to say, the Utes further from Santa Fe. There is little question that the bands which became the Southern Utes were clearly brokers in the Spanish horse and slave trade as described by Opler (1971) and Stewart (1966; also see Callaway, Janetski and Stewart 1986).

FIGURE 25

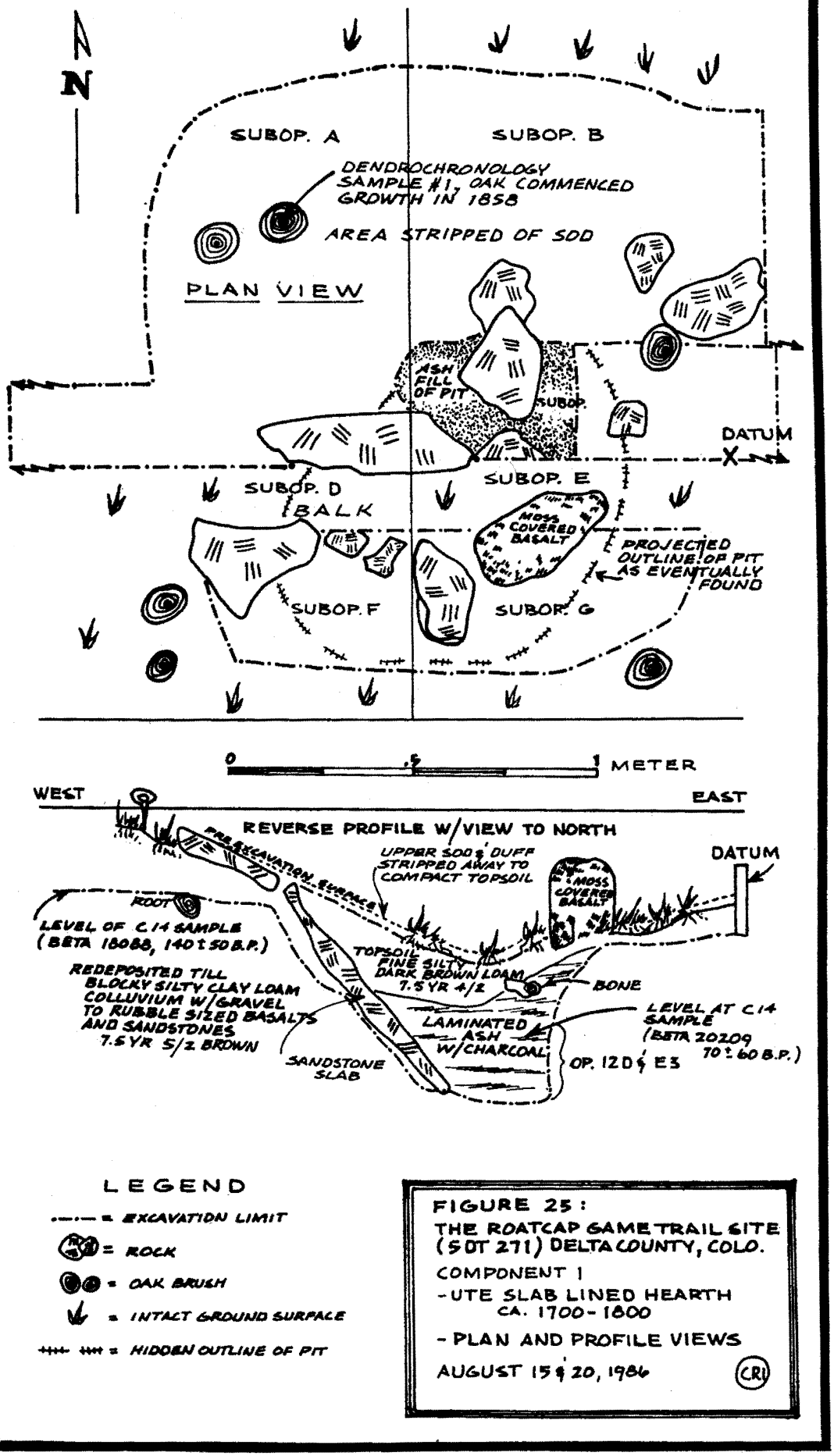
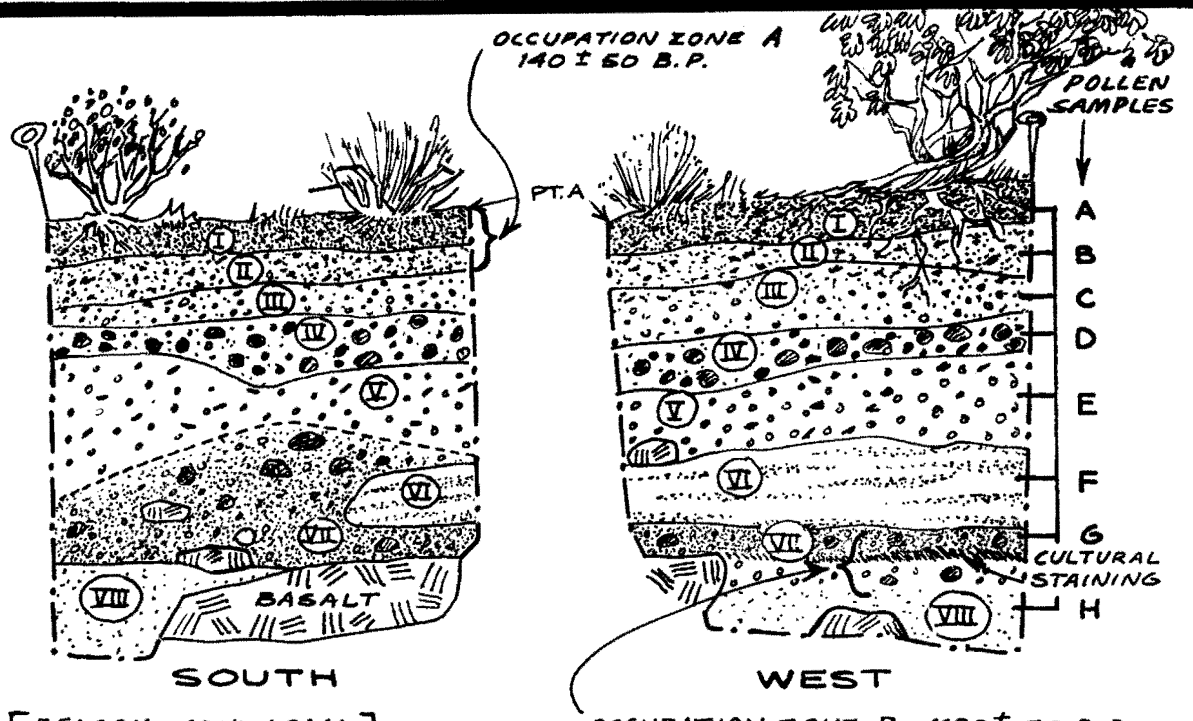


FIGURE 25:
THE ROATCAP GAME TRAIL SITE (5DT 271) DELTA COUNTY, COLO.
COMPONENT 1
- UTE SLAB LINED HEARTH CA. 1700 - 1800
- PLAN AND PROFILE VIEWS
AUGUST 15 & 20, 1986 (CRI)

Figure 26



I = SOD/TOPSOIL (POLLEN A) FINE SILTY LOAM W/CHARCOAL

DARK BROWN 7.5YR 4/2

II = BLOCKY SILTY LOAM COLLUVIUM (POLLEN B) W/CHARCOAL

DARK BROWN 7.5YR 4/2

III = BLOCKY SILTY LOAM COLLUVIUM (POLLEN C) W/LIGHT GRAVEL AND SAND OF VARIOUS TYPES AND SIZES W/LIGHT CHARCOAL AT TOP

DARK BROWN 7.5YR 4/2

IV = BLOCKY SILTY LOAM COLLUVIUM (POLLEN D) W/INCREASINGLY LARGER INCLUSIONS OF SAND, GRAVEL, COBBLES OF VARIGATED COLOR AND TYPE FROM SANDS TO BASALTS

DARK BROWN 7.5YR 4/2 W/O CHARCOAL

V = LIGHTER COLORED SILTY LOAM COLLUVIUM (POLLEN E) W/GRAVEL SIZED INCLUSIONS OF SANDS AND BASALTS W/LIGHT CHARCOAL

STRONG BROWN 7.5YR 4/4

VI = ALLUVIAL SANDS, BEDDED, (POLLEN F) COARSE GRAINED, W/LIGHT CHARCOAL

STRONG BROWN 7.5YR 5/4

VII = FINE SANDY LOAM COLLUVIUM (POLLEN G) W/GRAVEL TO BOULDER SIZED INCLUSIONS OF VARIOUS COLORS AND TYPES W/ZONE OF CHARCOAL AND CULTURAL STAINING

DARK BROWN 7.5YR 4/2

VIII = CLEAN SILTY LOAM COLLUVIUM (POLLEN H) LACKS GRAVEL BUT HAS BOULDER SIZED INCLUSIONS AND CHARCOAL

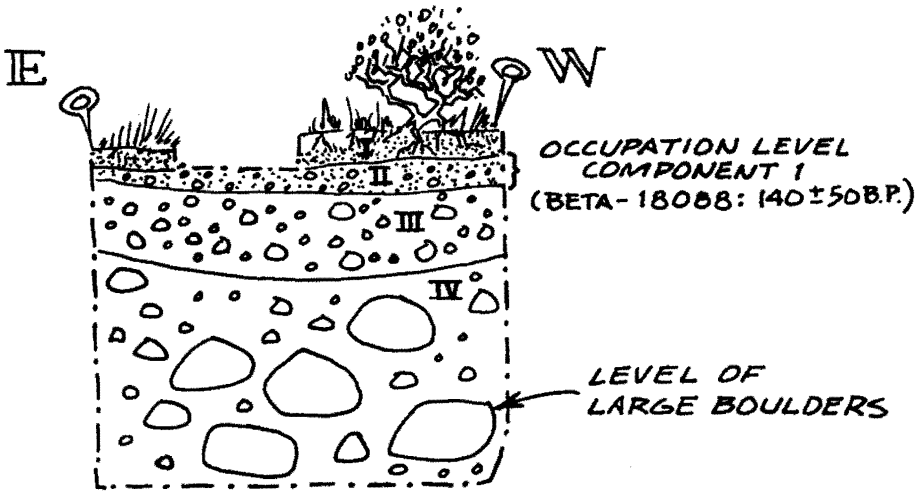
DARK BROWN 7.5YR 4/2

FIGURE 26:

STRATIGRAPHIC PROFILE FROM CONTROL PIT 14N-5DT 271 WITH POLLEN SAMPLE CONTROLS AUGUST 26, 1986

CRI

FIGURE 27



VIEW TO SOUTH

I = SOD/TOPSOIL - FINE SILTY LOAM W/CHARCOAL
DARK BROWN 7.5YR 4/2

II = SILTY LOAM TOPSOIL W/CHARCOAL
DARK BROWN 7.5 YR 4/2

III = BLOCKY SILTY CLAY LOAM COLLUVIUM W/MARKED INCLUSIONS AND A VARIETY OF GRAVEL TO SMALL RUBBLE-SIZED ROCK (SANDSTONE TO BASALT)
7.5 YR 5/2 BROWN TO 5/4
-VARIABLE-

IV = SAME AS III EXCEPT TIGHT-NOT BLOCKY

-.-.- = EXCAVATION LIMITS

0 25 50 75 100
1 M

- ALL OF II AND III ARE REWORKED TILLS ?

FIGURE 27:
SOUTH WALL PROFILE
OP. 13 R COMPONENT 1
SDT 271
AUGUST 27, 1986
CRI

There is, however, considerable room to question the extent to which Spanish trade goods and influences in the Sabuagana's own local protohistoric period had altered traditional Ute society and culture prior to the middle 19th Century. This is despite the knowledge that some seem to have had horses in 1776 (Chavez and Warner 1976) and the lumping of the entire historic period into one archaeological phase (Buckles 1971). As outlined in Table 7 and discussed at length by this writer elsewhere, archaeologists must recognize additional cultural phases within the Taviwach, Sabuagana and other Ute Bands' culture history. The very broad use of the Escalante Phase proposed by Buckles for the Ute's history is only useful in a very general way. It cannot be used as an archaeological phase without recognizing further subphases which were very real in Ute culture history. In this regard it is critical to meaningful archaeological study of any group to consider the concept of "protohistory" in relation to the groups being studied. The protohistoric period refers to a very specific history for the Sabuagana band that is probably somewhat distinct from that of bands from further south and closer to the Spanish culture sphere. I will, herein, henceforth refer specifically to the Sabuagana's own protohistoric record as the concept has been discussed by Wilcox and Masse (1981:14).

Locally, in the North Fork Country access to trade goods in any quantity probably only occurred about the time Antoine Robidoux established his trading post on the Gunnison near Delta, some 50 or so miles west of 5DT271 in the 1820's or early 1830's (Auerbach 1941; Phillips 1961:534-536; Wallace 1953; Scott 1982; Malouf and Findlay 1986:501-506). By selecting this location, Robidoux had not only placed his establishment squarely on the trail to the Utah Lakes Country and ultimately Monterey, but also on the boundary between the territories of the Taviwach and Sabuagana Ute bands (Peterson 1977). For the Taviwach and Sabuagana Ute, the protohistoric period should probably encompass the late 18th and very early 19th Centuries. This would have been a time when historical forces would have begun to be felt but many indigenous cultural traditions would have been largely intact. A Contact traditional Ute culture would certainly have been present during this period, but the society would have remained politically autonomous. Extensive trade goods usually accompanied the emergence of the Phase of Conflict and Competition which was a period of large scale White settlement and serious conflict for most Indian peoples, including the Utes. In Western Colorado this phase is felt to have only commenced in conjunction with the fur trade in the early 19th Century. It fully developed and culminated only when mining became an issue in the 1860's and 1870's (Leacock and Lurie 1971:9-12; Malouf and Findlay 1986). Sabuagana Ute protohistory would have ended about the middle of the 19th Century if the band survived. At this time, historical records may pick them up in relation to the White settlement of Colorado under the term Elk Mountain group. There are, however, some difficulties in equating the Sabuagana with the Elk Mountain Ute. While this may eventually prove to be appropriate, the subject needs to be reconsidered in depth (Peterson 1977 - also see Baker 1988).

This contact period scenario assumes a fundamental difference between the nature and rates of culture change between the Southern Utes who lived south of the San Juan Mountains and the more northerly groups

such as Taviwach and Sabuagana (Opler 1971) of West-Central Colorado. The former had a long history of more direct contact with the Spanish. Other than placing Component 1 in as close a temporal bracket as possible and relating this time frame to a general model of historic Ute culture change (Table 7) it is not possible to more precisely date this component. It cannot now be more accurately placed in the cultural profile of the Sabuagana Utes as they passed from their Early Contact Phase with their contact traditional culture into their Middle Contact Phase and the conflict and competition which ultimately destroyed their independence and brought them into their Late Contact Phase and some attempts at administration stabilization (Table 7). As will be discussed, however, this archaeological component yielded strong indications that some core cultural institutions and lifeways may still have functioned into the late 18th or early 19th century as part of the Sabuagana's contact/traditional culture (Baker 1988).

Architecture and Use of Space

As indicated in Figure 31, excavation of component 1 revealed a series of at least four definable game processing foci on two sides of a slab lined hearth. These areas were definable by the simple process of mapping animal bone distribution within 1 x 1 meter units (Figure 32). Butchering and processing tool proveniences generally correlated with the clustering of bones. Distinctions in the distribution of elk, deer and bison bone were obvious. A particularly homogeneous midden of elk bone along with butchering tools was noted on the northeast side of the hearth (Figures 31 and 32). The area immediately around the hearth had a mix of elk and deer bone. The limited amounts of bison bone was in a distinct provenience southeast of the hearth. The remains of the five individual deer in the faunal collection (Appendix I) from Component 1 were found in three major areas including the near vicinity of the hearth. The faunal materials suggested that the butchering was either episodic or was conducted simultaneously by a number of individuals.

As will be discussed later in this chapter, Component 1 is believed to represent the remains of an ephemeral hunting camp of one Ute family which was in turn part of a settlement system composed of a family cluster (Shapiro 1986:620-621). As such, the component probably represents one household (Wilke and Rathje 1982) that reflects an orientation to female activities as documented for Great Basin Peoples and hunters and gatherers in general (Martin and Voorhies 1975:182; Service 1966:7-13; Steward 1938:44; Buckles 1971:644). There is, furthermore, a suggestion for a division of activity areas present in this plan, in that tools believed to be generally associated with women's activities such as pottery, a milling stone and mano, and a beamer or hide wedge for working hides were all found on the southwest side of the hearth opposite the main butchering areas and bone middens (Figure 31). Butchering traditionally was a female-oriented activity (Smith 1974:48-49). At the least there are distinctions in the activity areas with the butchering and bone breaking being confined to the east side. Cooking was evidenced by the broken and burned bone fragments focused about the hearth. Other food preparation suggested by the milling stone, possible bedrock mortar(s), mano, and the pottery took place on the west. Conspicuous in it's absence was evidence for lithic reduction which is usually considered to be a male-dominated activity.

A particular goal of the excavation was to locate evidence for a structure. It was hoped that post holes or rock alignments indicating a wickiup might be located. Only surface evidence of such remains were found. This was in the remains of decaying poles found strewn about in the sod east of the hearth as discussed previously and shown in Figure 31. It is generally believed that the floors of wickiups are particularly lacking in artifacts or other archaeological evidence. Connor (1984), Hammer (1986), and Buckles (1971) have examined extant historic Ute wickiups. They have all reported that they found very little in them. It is suggested that a wickiup was present and that it was located away from the fire (as shown in Figure 31). Middens would probably have been outside of the shelter for the obvious reason of keeping meat scraps and bones, and thus rodents, out of one's bed. If a wickiup or similar shelter such as a teepee or brush bower was present, its most likely location would have been either to the east of the fire pit (Figures 29 and 31) in an area which contained the fewest artifacts and midden debris. Although fires are known to have been located inside brush shelters, if one spanned the fire at Component 1 it would have had to have been big and its floor would have been littered with animal bone (see Buckles 1971).

Although the teepee was pretty clearly in use by the Utes in the latter 18th Century, wickiups were also still in use as well (Callaway, Janetski and Stewart 1986:348). This is suggested as early as 1776 by the Escalante Expedition (Chavez and Warner 1976). Both wickiups and teepees appear to have been in use at the same time for all of the historic Ute occupation of Colorado up to the removal in 1881. Due to the paucity of any White trade goods, it is suspected that Component 1 is representative of the more traditional aspects of the Contact-Traditional Ute culture. In this regard, a traditional pole and brush wickiup constructed with a metal axe would certainly not be out of place with this component. The very confined small terrace and presumed oak brush cover would seem to preclude it as a teepee site.

The slab-lined hearth (Figures 23-25) seems typical of those frequently recorded in Western Colorado (Reed 1984) although no reports of locally excavated ones have been found as of this writing. As pointed out by Frison (1978:355-358), fire pits are the most common and widespread archaeological features on the northwestern Plains. There, man made pits occur in varying sizes and shapes and are often filled with fire-cracked rocks, ashes and charcoal. Fire pits commence in the Middle Plains Archaic and continued to be used up to the historic period. Frison describes these pits as follows:

> Round or oval-shaped in outline, they are usually carefully made and generally symmetrical. Diameters vary from about 1 foot to nearly 3 feet and bottoms are usually rounded but occasionally flat. Some are globular and have their maximum diameter at the ground surface whereas others have their maximum diameter well below the ground surface where soils are stable enough. Others expand from the surface to either a flat or rounded bottom and still others are bell-shaped. The sides of some were lined with carefully fitted sandstone or limestone slabs; sometimes the bottom and parts of the sides

> were lined with river cobbles. Some are relatively deep and contain more than one sequence of fire and cracked rock. In some cases fire-fractured stones cover the ground around the pits indicating that the pits were cleaned out and reused. The sides of the pits are often oxidized to a thickness of 2-4 cm, indicating intense heat over long periods of time. These kinds of features are sometimes associated with stone circles or tipi rings... (Frison 1978:355)

Frison's interpretation of these features is that they were used for cooking food.

> Stones were placed on a bed of hot coals in the pits; when heated, the stones served as a source of heat for cooking. Whatever was to be cooked could have been put in a green hide, animal paunch, or fiber bag, placed directly on the hot stones, covered with earth, and left for a period of time. With practice this can be done without burning or contaminating the food. The heat usually fractured the stones so that they were of no further value and another pit was dug or else the old one was cleaned out and fresh rock was used. This kind of use is clearly demonstrated at the Wardell site (Frison 1973b) where an unopened pit contained several parts of a bison carcass or carcasses that were being cooked (Figure 10.5). Pits of this nature were also used to heat stones for stone boiling, during the Late Prehistoric period at least (Figure 10.6). (Frison 1978:355)

Frison also suggests that these pits might have been used to heat small structures in cold weather (Frison 1978:358). Frison's view is supported by ethnographic data from the Great Basin where rock-lined pits were used for roasting the meat of big game (Fowler 1986:82). Such hearths are not uncommon in West-Central Colorado. Information about their use is still elusive and it is quite possible that the slab lined hearth was a multi-purpose item useful in processing both meat and vegetable resources as well as providing heat during cold weather. Recent excavations at Sisyphus rock shelter in the Colorado River Valley near DeBeque, Colorado evidenced many hearths. They constituted 69 percent of the excavated features and were subdivided into surface and basin hearths in the excavation report (Gooding and Shields 1985). These were further subdivided on the basis of internal elements into several categories including "slab-lined basin", "simple basin", "basin cluster of stone", "basin outline of stones with reflector" and "slab-lined basin". Gooding and Shields (1985:43-53) suggest that the slab-lined basin hearth served to reflect heat from the fire up rather than dissipating heat through the earth as well as serving to retain heat. Beyond describing the various types of hearths found at Sisyphus, these authors make little comment on the uses of these various types.

The fire pit in Component 1 was clearly slab-lined. Its pit outline was generally oval. It was excavated into the colluvial till which formed the occupation surface (Figures 25-27). It measured one meter long by .5 meter wide and was .5 meter deep at its maximum. The pit walls were irregular and at times were much harder to follow during

excavation than anticipated. The sandstone slabs were primarily situated against the west pit wall and around the sides of the pit on the old ground surface. Generally speaking, the pit was not as neatly constructed as was anticipated. Its fill consisted of finely laminated ash with very limited amounts of charcoal. There were a few fragments of charred wood in the fill as well as animal bone, particularly deer. There were also a few fragments of very vesicular volcanic rock that were fire-cracked. The pit also contained a small, side-notched, projectile point (Figure 33a). There was a slight bit of evidence that the pit might have been partially cleaned out. There was an area of thin ash on the occupation surface on the east side of the hearth beneath much of the animal bone. There was, however, no discernible fire-reddening of the soils around the hearth and there was no stratification of the ash fill (Figure 25) other than the minor lamination which was believed due to water filling the pit. The pit was clearly not full of ash at the time it was abandoned. Overall, it is suggested that this hearth was not used for a long time or repeatedly used with intervening periods of disuse. The fill was simply too homogeneous. The subjective impression conveyed by this feature is that it represents a limited period of use. The cobble concentrations shown in Figures 31 and 32a may have been a supply of baking stones for use in this pit as described by Frison (1978:355).

Bulk samples of the hearth fill were examined for evidence of flora which might have been used on site. The hearth fill produced seeds or fruit from a number of plants, most of which were not charred. Noncharred remains from open air sites, especially those which are shallow and/or located in disturbed habitats, are usually considered to be contaminants and therefore not related to the site. The noncharred remains from the hearth in Component 1 all had intact embryos which may be indicative of fairly recent deposition. It was suggested that the floral remains might best be disregarded since they may be contaminants (Matthews 1987; see Appendix III). In prehistoric sites it has become most acceptable to consider only charred seeds for the interpretation of a feature and utilization of resources (Minnis 1981). Few seeds live longer than a century, and most for a much shorter time period (Quick 1961; Harrington 1972; Justice and Bass 1978). It is presumed that once the seeds have died, decomposing organisms act to decay them.

In Component 1, preservation has been of an unusually high quality and the component is really not that old. In light of the generally excellent preservation in all other areas (faunal and wood specimens particularly), the samples from the hearth are not herein disregarded. They are believed to relate to the historic Ute occupation and are, with the foregoing and appropriate cautionary remarks in mind, offered as partial explanation for procurement and processing activities which may have gone on around the hearth.

Plant remains from the fill of the slab-lined hearth and surrounding occupation surface of Component 1 are summarized in the following table and included sunflowers, goosefoot and grass seeds. The listed remains may or may not be related to the occupation. The writer suggests that they well may be.

TABLE 7a
RESULTS OF FLORA ANALYSIS, 5DT271, COMPONENT NO. 1

Provenience	Taxon	Part/Condition	Quantity
Component 1	Compositae	seed/nch	1
OP 12,LII	Compositae	seed/nch	1
Hearth S½			
OP 12,D/E III	Chenopodium	seed/nch	1
Pit Bottom	Indeterminate	seed/nch	1
OP 12,A:B	Chenopodium	seed/nch	1
Top of Pit	cf. Scutallaria	seed/nch,p	1
	Indeterminate	fruit/ch,frg	1
OP 12,A:B	Chenopodium	seed/nch	6
Bottom Of Pit			
OP 13,RII	Gramineae	seed/ch	1
Ash Stain			
OP 16,H	Chenopodium	seed/nch	1
Surface	Gramineae	seed/ch	1
	Indeterminate cf Leguminosae	seed/ch	1

Analysis of pollens from the ash and food bone layer around the hearth did not find any data that appear to reflect economic activities involving vegetal resources.

Component 1 is believed to represent a seasonal household residence where a variety of activities were undertaken. In addition to serving as a temporary place of residence, the component seems to have witnessed the butchering of big game animals, the preparation and cooking of food, perhaps the preparation of hides and probably the collection and preparation of vegetable foods as well. All of these activities are suggested by the site artifact assemblage as illustrated in Table 8 and Figures 31 and 33-36.

Material Culture

The occurrence of small side notched projectile points in association with Numic or Shoshonean ceramics is generally considered to hallmark Numic (Ute) occupations in the eastern Great Basin (see Fowler and Fowler 1981; Aikens and Madsen 1986; Callaway, Janetski, and Stewart 1986; Smith 1974; Buckles 1968, 1971:1248-1249; Reed 1984:43; Madsen 1975b, 1986; Opler 1939; Holmer 1986:107; Holmer and Weder 1980; Eddy, Kane and Nickens 1984:104; Dial 1989). In this regard, the historic timeframe and the demonstrated presence of Uncompahgre Brown Ware ceramics (Buckles 1971) in association with a Desert Side Notched projectile point is believed to indicate that Component 1 at 5DT271 is indeed a Ute site. Additionally, the site is in the area generally

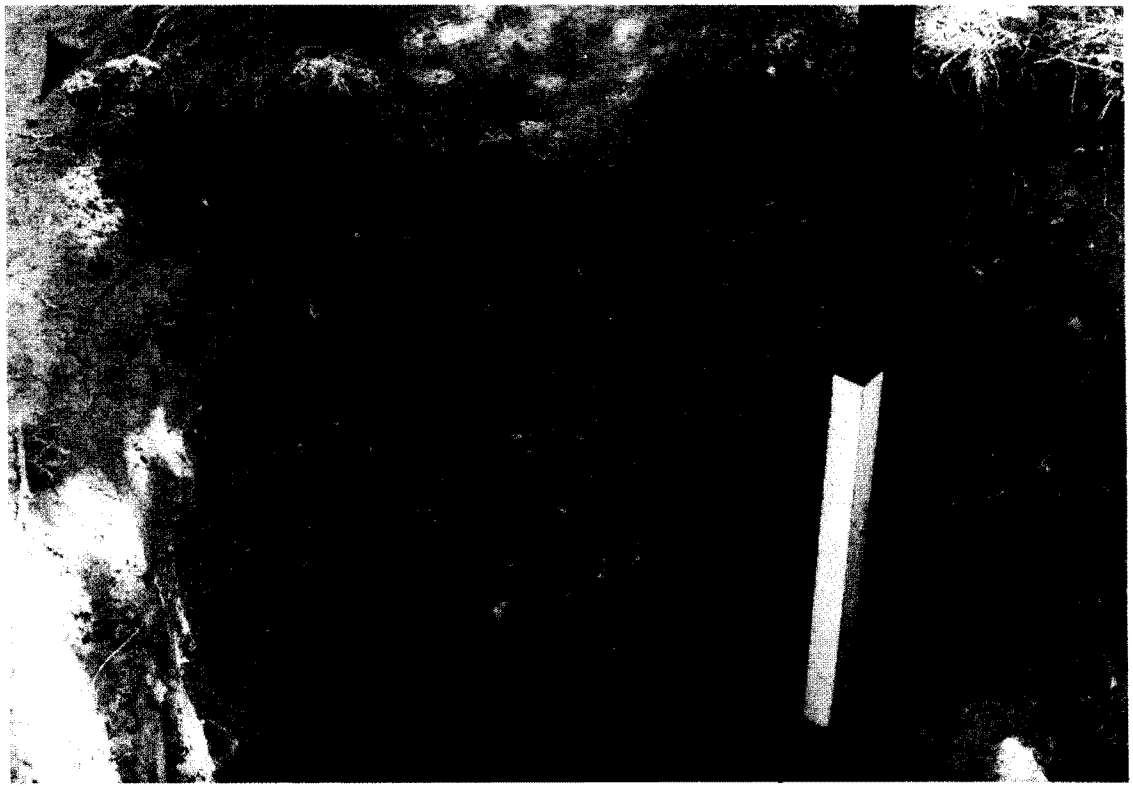


Figure 28: Test Pit 13R, Component 1, 5DT271. South wall profile. View to south. Arrow on adjacent excavation unit shows the level of the historic Ute living surface. Scale is marked in .5 meter increments. August, 1986.

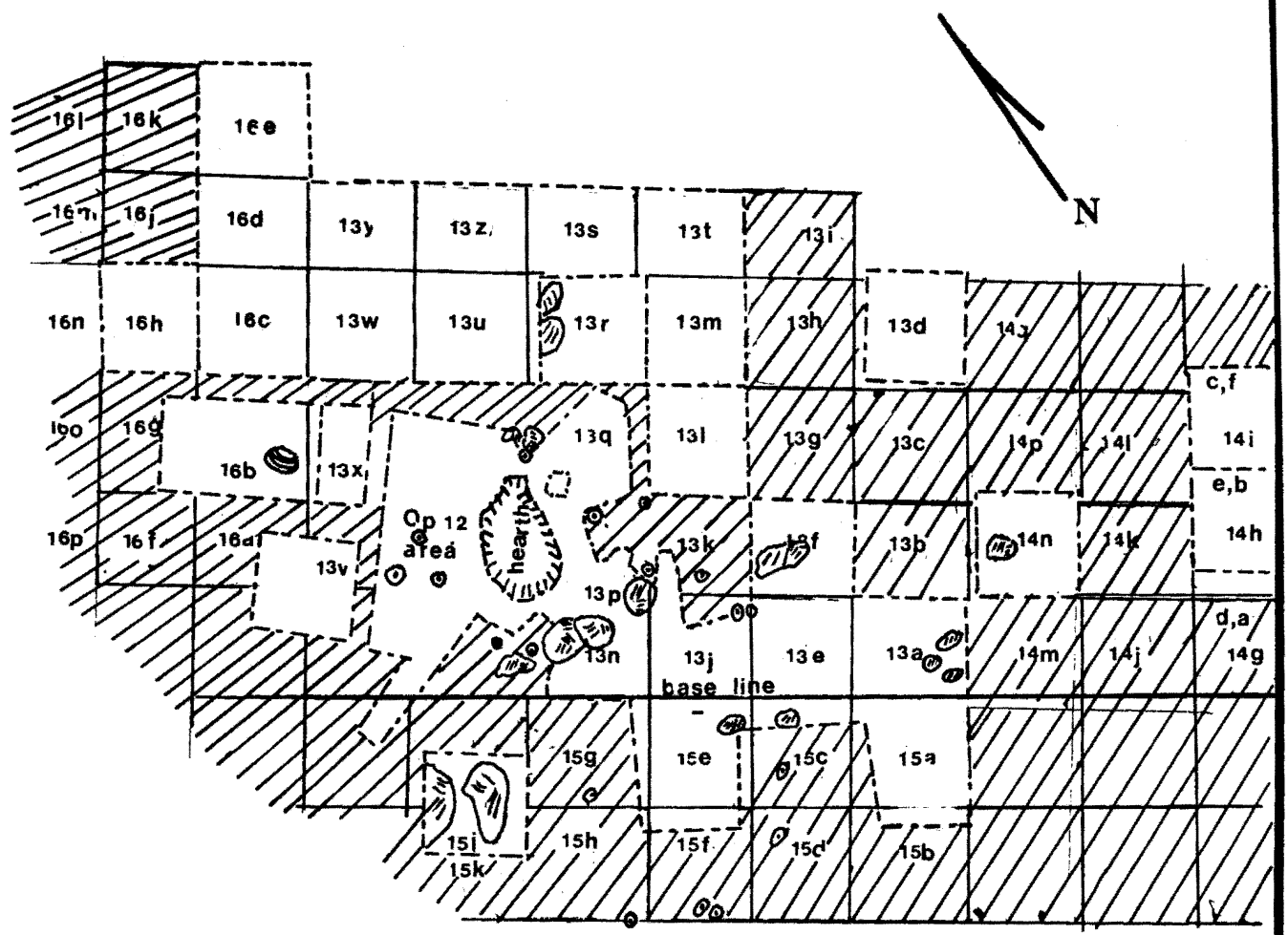
ascribed to the Taviwach or Uncompahgre Ute Band (Callaway, Janetski and Stewart 1986) and more specifically to the Sabuaganas (Chavez and Warner 1976; Peterson 1977; Cutter N.D. and Baker 1991). This point is not in dispute and there are no other likely ethnic/linguistic candidates to which to ascribe the component. The time period is also right. The dating, location and material culture all suggest a Sabuagana Ute occupation similar to those recorded by Escalante in 1776 (Chavez and Warner 1976) and referred to by Rivera in 1765 (Baker 1991).

Rood's analysis (Rood 1987) of the faunal materials from Component 1 clearly indicates that the site was the location of a secondary butchering station where only portions of big game kills were brought for further processing and/or consumption (see Appendix I). Analysis of the spatial distribution of the bone elements shows at least four activity areas (Figure 31). Directly associated with these activity areas is a small yet homogeneous assemblage of stone hunting and butchering tools (Table 8). This assemblage also contains tools believed related to more generalized food preparation and hide working, namely milling stone and mano as well as what is believed to be a bone hide wedge or scraper. When mapped in relation to the slab lined hearth and bone midden, as in Figure 31, the spatial distribution of these tools provides detailed information on activity areas and tool kits within one site component which is believed to correspond to a household of one nuclear family of historic Ute hunter/gatherers. The assemblage is remarkable in light of the suggested historic date and the near total absence of White trade goods, including beads, in the artifact assemblage. There is tentative evidence for the presence of a metal axe having been used to cut at least one oakbrush wickiup (?) pole.

FLAKED STONE

As indicated in Table 8, Component 1 yielded only 22 specimens of flaked stone. This small assemblage was analyzed according to Kvamme's classification (Kvamme and Black 1986) of tool classes. The total assemblage was conspicuous in its lack of bifacial tools and in the high percentage of utilized flakes (37%). This pattern is consistent with other investigator's comments regarding the Ute tool kit which may have included a conspicuous element of unshaped stone flakes used in skinning (Callaway, Janetski and Stewart 1986:348). In the lithic analysis of Component 1 materials, a conservative position was taken. Unless a flake showed obvious macroscopic deformation of an edge through use/wear, it was not considered to have been utilized even though microscopic examination will almost certainly reveal that an even larger percentage of flakes were utilized. Of the 11 flakes designated as unutilized, it is important to note that there were seven types of tool stone represented. Soil samples and fine mesh screening of previously screened dirt revealed no evidence of microflakes. There simply was no evidence of lithic reduction or resharpening having taken place at this component. Artifact recovery from this component was quite good when compared to the even more gravely matrix of component No. 2. Two small flakes apparently derived from the use of the shale chopper (Figure 33c) were, however, recovered from the bone midden on the north side of the hearth. This attests to the thoroughness of the recovery techniques used and supports the contention that the living surface around the slab lined hearth was not the scene of flint knapping which is generally thought of as primarily but not exclusively a male-oriented activity.

FIGURE 29



Legend:

= excavation limit
= grid lines
= rock
= trees

0 1 2 m
scale

Figure 30: Component 1, 5DT271 occupation surface during excavation. View is to west with slab-lined hearth at left in trees. Deep Test Unit 13R is in right foreground. August, 1986.

FIGURE 31

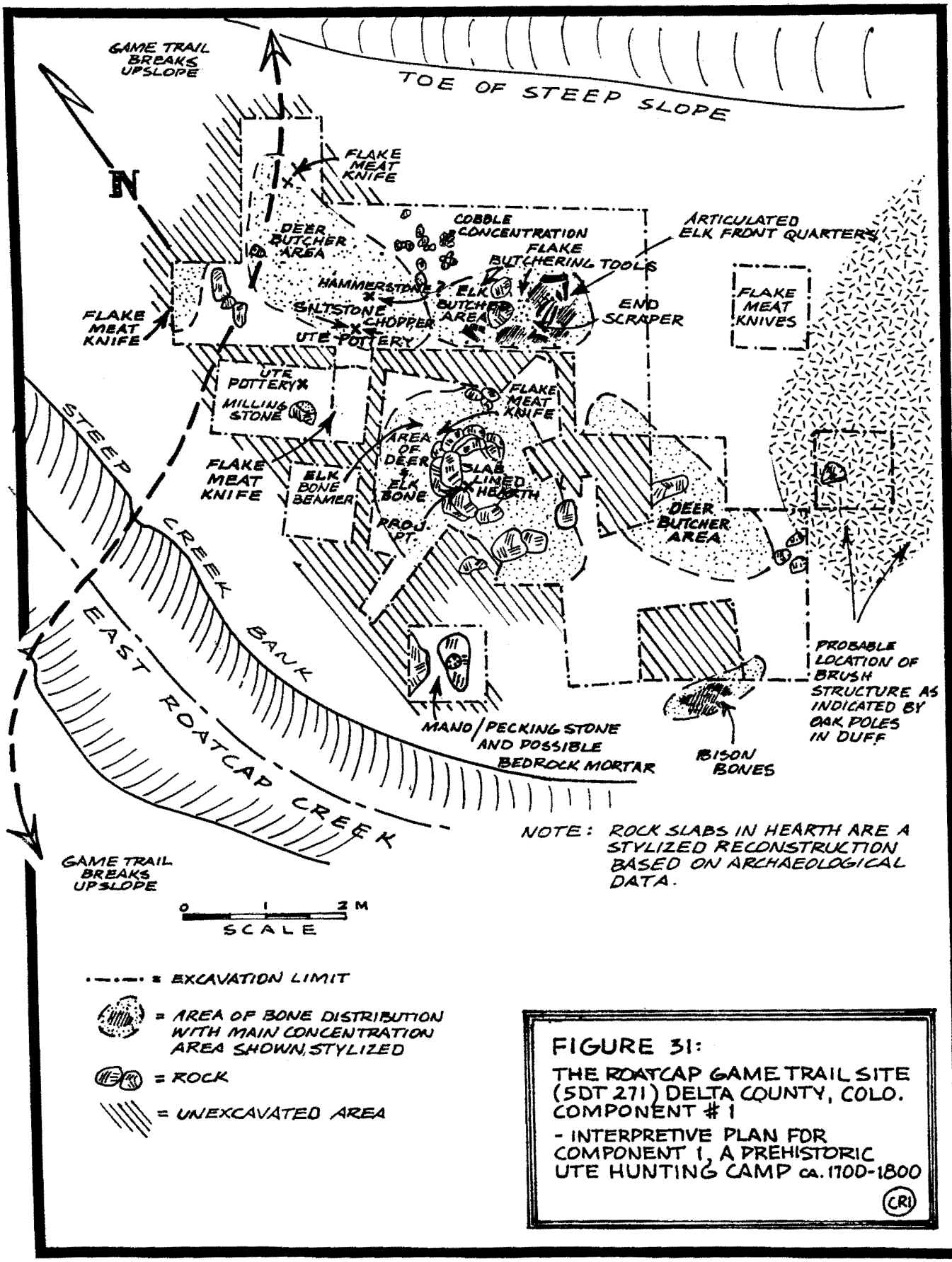


FIGURE 31:
THE ROATCAP GAME TRAIL SITE (5DT 271) DELTA COUNTY, COLO. COMPONENT # 1
- INTERPRETIVE PLAN FOR COMPONENT 1, A PREHISTORIC UTE HUNTING CAMP ca. 1700-1800

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Among the utilized flakes are a high percentage (74%) of flake knives with acute edge angles that are less than 45 degrees. Two of these specimens (Tables 4 and 8) closely parallel those described by Frison (1979:260-261) who states that bison butchering processes remained very similar for over 10,000 years on the Plains. Frison's discussion of the butchering tool kit is very appropriate in describing and comparing the tool kit associated with the living surface at component 1. In addition to the utilized flake knives, Frison discusses the use of stone or bone choppers used to loosen key muscles on various bones. He also points out that while it is possible to butcher an entire bison with a simple flake tool such as that illustrated in Figure 33b, the butchering process becomes more efficient with the addition of a stone chopper or hammerstone. Additionally, heavy bone wedges or dull hammerstones can be used to pound the hide loose. As will be shown, all of these elements of the butchering tool kit appear to be present (Frison 1979:260-266).

- Bifacial Tools

The only biface recovered from component 1 was a small side-notched projectile point found in the fill of the slab-lined hearth.

Projectile Point (Figure 33a). Triangular in outline; fragmentary due to screen damage, base and tip broken. Concave base, parallel side notches, base equal to or larger than body.

Material: gray chert
Size: length 1.7 cm; width of base about 1 cm; thickness .2 cm
Type Designation(s): Desert Side Notched, General Form (Holmer 1986:107-108; Holmer and Weder 1980; Baumhoff 1957; Baumhoff and Byrne 1959)
Cultural Associations: Numic (Holmer and Weder 1980; Holmer 1986)
Time Frame: late, ca A.D. 1200-1700(+?) (Holmer 1986:107 and this report)
Distribution: throughout Intermountain West (Holmer 1986)
Comment: commonly occur with Numic ceramics as at 5DT271 (Holmer 1986). Time frame is at least as late as the 18th Century at 5DT271 and may be early 19th Century.

-Unifacial Tools

Chopper (Figure 33c). Irregular in outline; complete specimen made from flat-surfaced, wedge-shaped, local indurated shale.

Material: Mancos Shale gray/green
Size: length 11.5 cm, width 9 cm, thickness 3 cm
Type Designation(s): none known
Cultural Association: not known
Time Frame: not known
Distribution: not known
Comment: occurred with Numic ceramics and Desert side-notched projectile point as part of a large game butchering kit. Local parallels may be seen in Buckles (1971:244). Usage is suggested by Frison (1979:260-261) as implement used to loosen key muscles on bones of bison.

Figure 32: Partially articulated elk front quarters on historic Ute occupation surface in Unit 13R. Occupation level has been freshly sprayed with water. View is to west. Scale is in .5 meter increments. August, 1986.

Figure 32a: Alignment of small cobbles on historic Ute occupation surface in Units 13Z and 16L. These cobbles were probably aligned by the site occupants, although no certain cultural association could be demonstrated. Trowel is to the north and scale is in .5 meter increments. August, 1986.

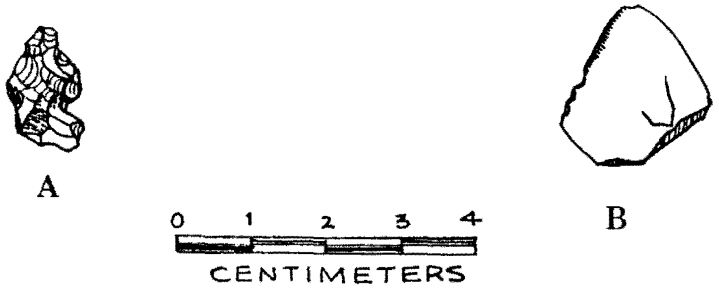
- Utilized Flakes

This part of the artifact assemblage includes at least 7 and probably more flakes of various types of tool stone which have been utilized for cutting or scraping purposes. Only one artifact could class as a scraper due to its obviously obtuse angle (Table 8, specimen 9) and two specimens (Table 8, specimen 2) evidenced both acute and obtuse utilized edges. The remaining five flakes varied considerably in their form but all shared a common attribute. They were small, less than 3 cm long, and had an acute edge angle showing some evidence of use/wear. Of these five, only two show any consistency which lends itself to meaningful description. These are both triangular flakes believed to be meat knives.

Triangular Flake Meat Knives (Figure 33b) (Table 8, Specimens 4&8)

Number of specimens: 2
Materials: brown chalcedony and white chalcedony
Size: 1 to 2 cm long by 1 to 2 cm wide
Shape: Trianguloid
Type Designation: none known
Cultural Associations: none known
Time Frame: not known
Distribution: not known
Comment: These flakes are consistent with descriptions by Wilmsen (1970:75), Frison and Bradley (1980:87-89) and Semenov (1976:101-105) and particularly Frison (1979:259-268). They have been worn smooth on the edge which suggests, in light of Frison's observations, that they were probably no longer sharp enough for butchering purposes.

The obvious association of these worn flake tools with other butchering tools and a bed of butchered bone indicates their role in butchering as discussed by Frison (1979). Additionally, it is suspected that future archaeological attention to the subject will reveal that among flake tools, there is a consistent preference for such trianguloid flakes in certain steps in game processing. They are suspected of being a consistent element in the butchering tool kit. The remaining utilized flakes are not further described herein. It is anticipated that the assemblage will be subjected to a detailed microscopic use/wear analysis at some point in the future. Suffice it to say that the flakes are small and heterogeneous. It appears that flakes were utilized on somewhat of a fortuitous basis and, while some consistency, such as for the trianguloid flakes, may have been present, availability of the flake with a reasonable cutting edge was enough to see it utilized. There is great variety in the utilized flake assemblage just as was noticed at 5DT771 (see Chapter 2). Since little or no lithic reduction took place on the component 1 living surface, it may be inferred that the flake tools found there came from the accumulated stock of the occupants. It has been suggested that the Utes, in historic times, scrounged among archaeological sites for some of their tools (Eddy, Kane and Nickens 1984:103). Flint working is usually attributed to males. The living surface at Component 1, however, gives every appearance of being a female work area within a nuclear household. It is suggested that the



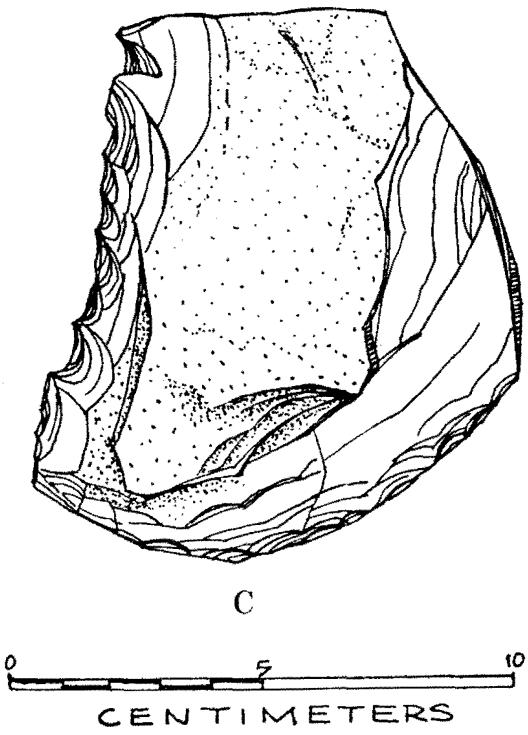


Figure 33: Flaked stone artifacts from Historic Ute Component No. 1 at 5 Dt 271. A= General form Desert Side Notched arrowpoint of gray chert. B= Utilized flake meat knife of white chalcedony. C= Unifacial chopper of indurated shale.

TABLE 8: Flaked Lithic Tools Excavated From Component 1, 5DT271
(Keys to Figure 33)

	Category	Figure No.	Provenience	Material	Shaped Tool	Edge Wear	Edge Angle	Worked Edge	Original Tool Class
1	Biface F	33A	120/E_3	GCT	Yes	Yes?	A	Yes	Side Notched Projectile Point
2	Uniface C		13R3	BCH	No	Yes	A/O	Yes	Flake Scraper/ Knife
3	Uniface C		16N2	BCH	No	Yes	A	Yes	Flake Knife
4	Uniface C		13Z3	BCH	No	Yes	A	No	Flake Knife
5	Uniface C		13D1	BCH	No	Yes	A	No	Flake Knife
6	Uniface C		14H2	GCT	No	Yes?	O	No	Flake Burin?
7	Uniface C	33B	16M1	WCH	No	Yes?	A	No	Flake Knife?
8	Uniface C		13U1	WCH	No	Yes	A	No	Flake Knife
9	Uniface C		13R1	BST	No	Yes	O	No	Flake Scraper
10	Uniface C	33C	13W1	SCH	Yes	Yes	O	Yes	Flake Chopper
11	Uniface C		15A1	BST	No	Yes	A/O	No	Flake Scraper/ Knife

TABLE 8 (Cont'd): Flaked Lithic Tools Excavated From Component 1, 5DT271
(Keys to Figure 33)

Bifacial Tools
projectile points = 1
knives = 0
choppers = 0/1

Unifacial Tools
perforator = 1
choppers = 1/2

minimum tool count = 11
total artifacts (including all debitage) = 22

Utilized Flake Tools
knives = 5
scrapers = 1
Scraper/knives = 2/8

50% = minimum of tools in assemblage (may be higher)
50% = maximum unutilized debitage in assemblage (may be lower)
74% = utilized flake tools in total tool assemblage (may be higher)
37% = utilized flake tools in total assemblage (may be higher)

Lithic Material Key:

	tools	unutilized debitage	totals
GQ = gray quartzite	0	0	0
O = obsidian	0	1	1
YCT = yellow chert	0	0	0
SCH = shale	1	2	3
BST = basalt	2	2	4
WCT - white chert	0	0	0
GCT = gray chert	2	1	3
BCT = black chert	0	1	1
WCH = white chalcedony	2	2	4
BCH = brown chalcedony	4	2	6
RCH = red chalcedony	0	0	0
	10	11	22

18% = unifaces to total tool assemblage
9% = unifaces to total assemblage
9% = bifaces to total tool assemblage
5% = bifaces to total assemblage

Category/Condition:
F = fragment
C = complete

Edge Angle:
A = acute
O = obtuse

high incidence of utilized flake tools at 5DT271 and the evidence for scrounging of prehistoric tools by the Utes, is geared to the role of women in the household economy. In this regard, this writer attributes the flake tool assemblage at Component 1 to females who were performing the work there and drawing upon their accumulated stock of lithic debitage (Martin and Voorhies 1975:182-183); Buckles 1971:644; Steward 1938:44; Deetz 1982:724).

GROUND AND PECKED STONE

As with the flaked stone, ground and pecked stone was not abundant in Component 1. It was, however, present and included the basic elements which could be anticipated on a small wickiup site, including milling stone, mano, a "probable" ephemeral bedrock mortar, as well as probable hammerstones believed to be part of the butchering kit.

Milling Stone (Figure 34a)

Material: highly friable local sandstone
Shape: Slab with shallow basin and irregular outline. Unmodified shape, fortuitous stone selection?
Size: 38 cm long by 30 cm wide overall
Size of milling surface: 20 cm by 15 cm
Typology and Distribution: appears similar to others described in West-Central Colorado by Buckles (1971:490-492)
Comments: This stone is quite friable and shows only minimal wear on its grinding surface. Any prolonged use would have rapidly worn it away completely. The limited use evident and the limitation against any prolonged use lends support to the view that occupation of Component 1 was of very short duration. No pecking of the surface was evident.

Hand Stone (Figure 34b) Fragmentary

Material: Metamorphosed stone cobble
Shape: asymmetrical in plan and cross section with projected rectanguloid outline.
Size: fragment is 8 cm long by 9 cm wide and 5.5 cm thick. Projected to have originally been 10 to 12 cm long
Milling Surface: Confined to one side of fragment with surface of 7 cm by 5 cm. End shows some evidence of use as a pecking stone
Typology and Distribution: No particular type but believed to be widely distributed. Similar to Buckles Type 2 (1971:466).
Comments: This was found among large boulders which have some surfaces showing inconclusive evidence of having served as ephemeral "bedrock" mortars or possible grinding surfaces.

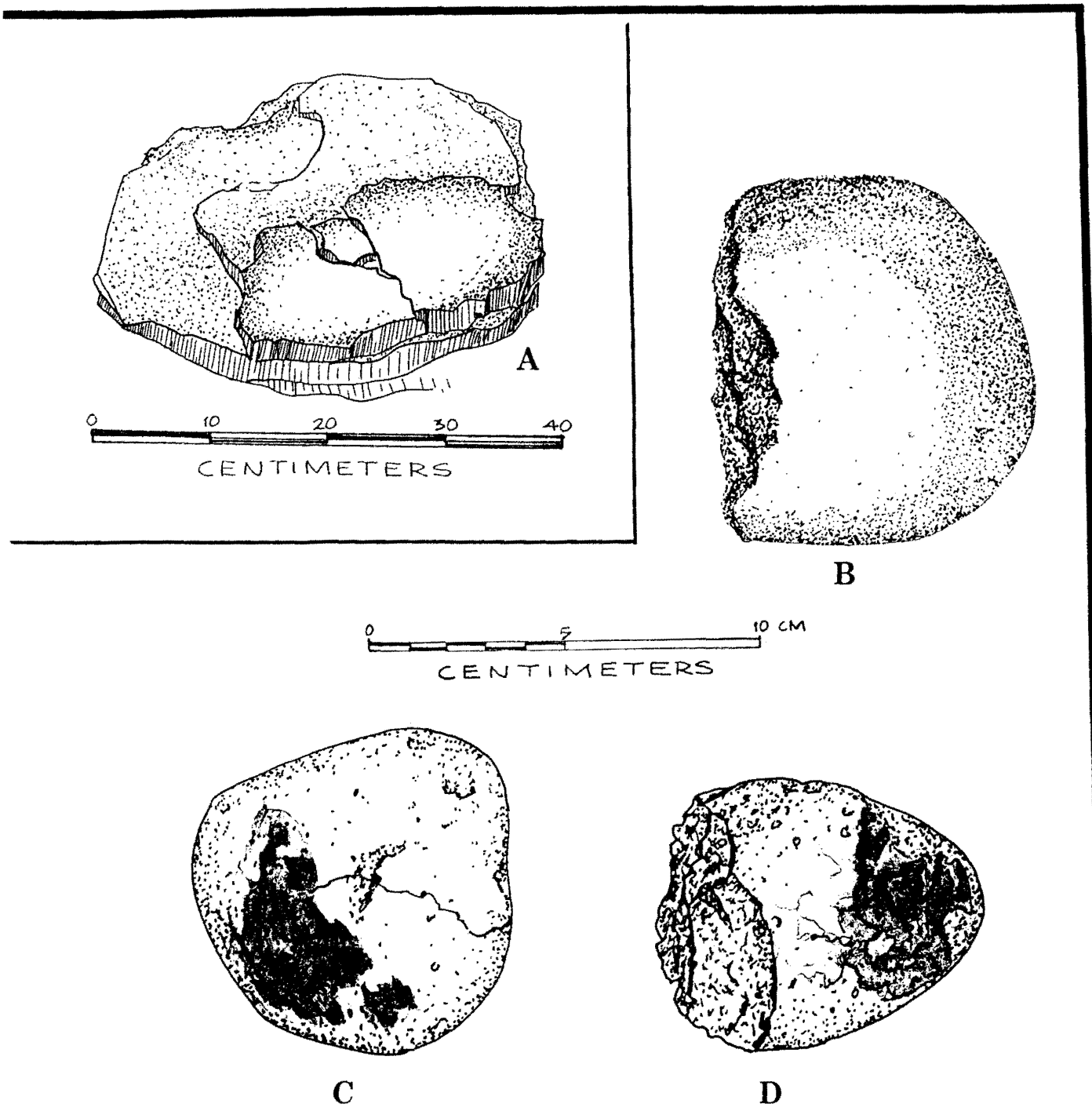


Figure 34: Ground and pecked stone tools from Historic Ute Component No. 1, 5 DT 271. A= Slab millingstone made of sandstone. B= Fragment of single surfaced mano made of a metamorphic cobble. C= Probable hammerstone made of a metamorphic cobble with an obvious soot cloud. D= Probable metamorphic cobble hammerstone with obvious soot cloud.

Probable Hammerstone (Figure 34c) Complete

Material: Metamorphosed stone cobble
Shape: roughly ovoid
Size: 10 cm long; 11 cm wide; 3.5 cm thick
Evidence of Use or Alteration: Very limited wear evident. Minor deformation evident on one end only.
Typology and Distribution: none known
Comments: This probable tool was found situated on the living floor amid animal bone and was quite conspicuous. It evidences a strong soot cloud on upper surface. It is believed to have become soot blackened during the fire which swept the surface after the occupation. It is suspected of being used as a hammerstone for breaking bone. Its identity must, however, remain problematical since it bears only the slightest observable hint of use/wear. It may well, however, have served as a simple chopping and breaking tool such as discussed by Frison (1979:260-261).

Probable Hammerstone (Figure 34d) Fragmentary

Material: basalt cobble
Shape: roughly ovoid
Size: 11 cm long; 9 cm wide; 7 cm thick
Evidence of Use or Alteration: Very limited wear is evident. The cobble has been fractured medially. The intact end presents some minor suggestion of use as a hammerstone but this would probably be arguable.
Typology and Distribution: none known
Comments: This probable tool was found situated on the living surface amid animal bone and was also quite conspicuous. It also evidences a strong soot cloud on its upper surface and is thought to have been smothered under burning duff and humus during the fire which swept the site following its occupation. It is suspected of being used as a hammerstone for breaking bone. Its identity must, however, remain problematical since it bears only the slightest observable hints of use/wear. It may well, however, have served as a simple chopping and breaking tool in the butchering kit as discussed by Frison (1979:260-261)

CERAMICS

Ten sherds of Uncompahgre Brown Ware (Buckles 1971:506) were recovered from Component 1 in a context very close to the milling stone (Figure 31). When mended these reduced the count to two sherds. One very small and the other a sizeable portion (10 cm by 9 cm) of what appears to be the side wall of one conical cooking vessel (Figure 36). The small isolated sherd is consistent with the larger sherd and is suspected to have come from the same vessel.

Figure 35: Elk bone hide scraper or hide wedge from Component 1, 5DT271.

Vessel Construction: Coiling with imperfectly obliterated coils. Breakage tends to follow coil line.

Interior Wall: Slightly irregular smoothed and scraped surface. Color is generally a 10YR5/3 (very dark gray) from carbonaceous deposits.

Exterior Wall: Irregular and poorly finished with evidence of finger tip impressions. Color is generally a 10YR5/3 (brown) with traces of carbonaceous deposits and no firing clouds evident.

Sherd Core: Generally very dark, 10YR5/3 (very dark gray), solid and compact with little or no evidence of eroded carbonaceous materials. Temper is nonmicaceous with obvious particles of course angular gray to white quartzitic sands.

Vessel Size: Transverse and medial sections from sherd (Figure 36) allow vessel size to be projected. The vessel body was probably 25-30 cm in maximum width. The vessel was perhaps 40 cm tall. Thickness of vessel wall is 5.5 mm to 7 m.

Vessel Shape: Probably conical as illustrated by Madsen (1986:209). Does not suggest it was as elaborate in neck and rim morphology as most of the vessels illustrated by Buckles (1971:515-518).

Decoration: None observed.

Neck and Rim: Not directly observed. Probably had limited or no neck constriction and a straight to slightly flared rim.

Probable Use: Cooking pot (Smith 1974:87).

Formal Type Designation: Uncompahgre Brown Ware, Fingertip Impressed (Buckles 1971:519-527). Also see Madsen (1986), Smith (1974), Annand (1967), Schroeder (1953), Callaway, Janetski and Stewart (1986:347), Stewart (1942) and Dial (1989).

The ceramic vessel represented in the Component 1 assemblage very easily fits Buckles' (1971) type descriptions for Uncompahgre Brown Ware and is compatible with all known descriptions of historic Ute ceramics from Western Colorado. The very little information available on the subject suggests that the vessel is similar to those described ethnographically as cooking pots. Its presence in a Ute camp where meat was being prepared is consistent with Smith's description:

> Clay pots were used for boiling meat, sometimes with seed or yampa flour added. The pot was placed near the fire, and hot ashes were heaped around it. Sometimes hot stones were placed in with the food to make it boil faster. (Smith 1974:87)

David Hill of Las Cruces, New Mexico conducted a petrographic analysis of the pottery and his report (Hill 1989) is reproduced verbatim here.

PETROGRAPHIC ANALYSIS OF AN UNCOMPAHGRE BROWN WARE SHERD FROM 5DT271

A single small, highly fragmented sherd was submitted for petrographic analysis. The small size of the sherd precluded observation of temper orientation, one method of determining techniques used in ceramic manufacturing or, extensive point

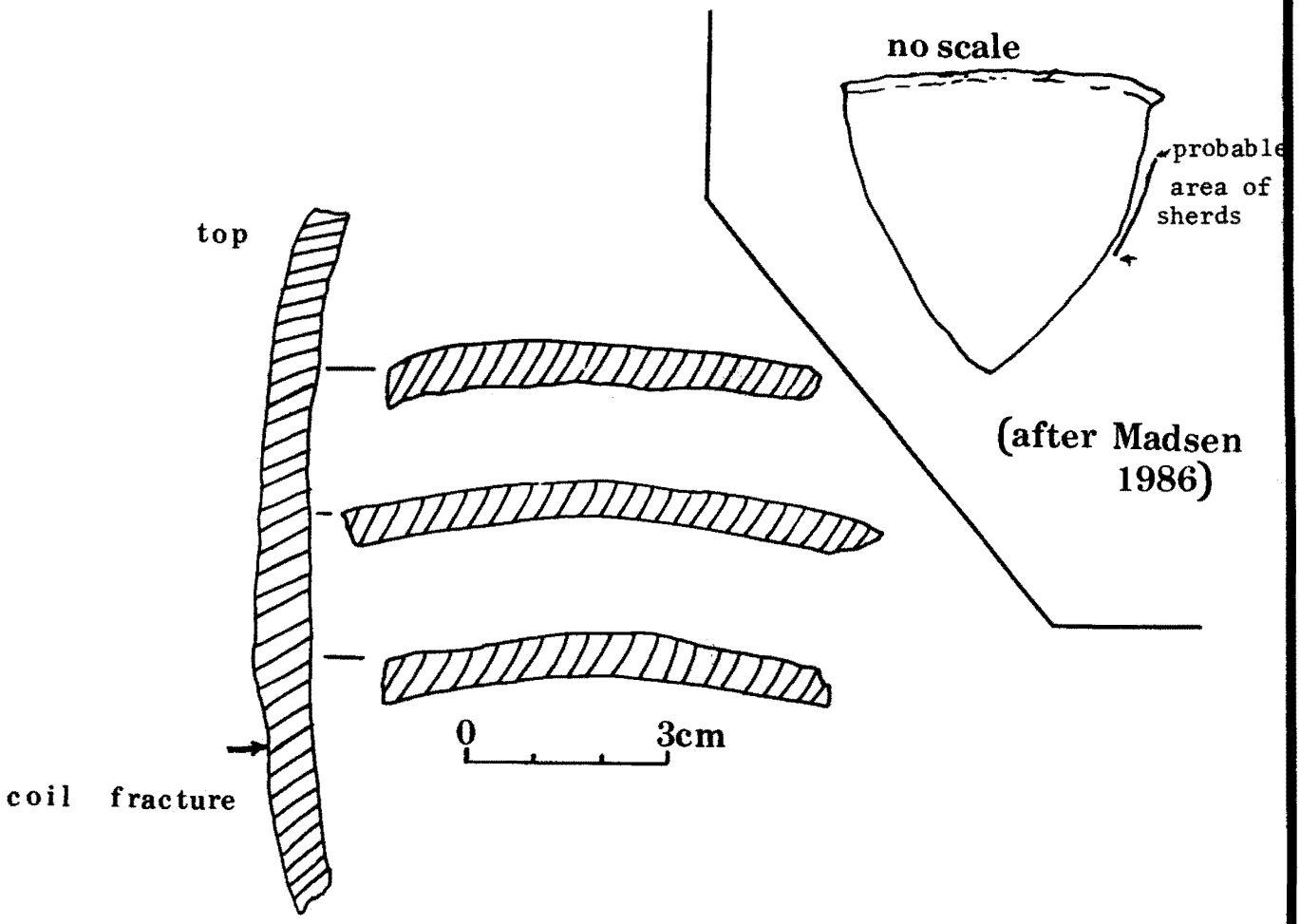


Figure 36: Profile of portion of historic Ute Brownware pottery vessel from Component 1, 5DT271 with suggested original shape indicated.

counting of the temper grains for statistical purposes. However, some information can be gained from the suite of materials present in the ceramic paste.

Several rock types were observed in this sherd. Granite is present containing; quartz, feldspar, microcline, brown biolite and a minor amount of chlorite. The feldspars that are present are untwinned although some zoned examples were also noted. One fragment of the granite was slightly gnessic in character and lacked the zoned feldspars present in the other rock fragments. A single rounded chert pebble was also present in the sherd as was a pyroclastic fragment.

Due to the angular shape of the inclusions in the paste, the materials used as temper and any detrital grains that might have been present in the clay could not be distinguished. Sizes of the inclusions ranged between 710 and 1000 microns. The chert pebble may a natural inclusion in the clay.

The presence of different types mostly of an angular nature within one sherd suggests several possibilities as to their origin. The ceramic temper could have been derived from sand bars close to the outcrops of granitic rocks so that the grains would still retain their angular nature, such as the Black Canyon of the Gunnison (Tweto 1980). Such sand bars would also trap other local rock types such as chert and pyroclastic fragment, that would be included in the temper as well. The temper in the ceramics could also have been derived from hearth stones that have been decomposed through the differential thermal expansion of their constituent minerals. Eventually the rocks would become friable enough to be ground as temper.

Little petrographic analysis of Numic ceramics from Colorado has been undertaken. Consequently, little comparative information about ceramic temper is available. Most of the specimens that have been examined contain granite or gnessic granite (Hill 1988, Hill and Kane 1989, Huscher and Huscher 1940). A single Uncompaghre Brown Ware sherd from Mesa County contained crushed andesitic rock and a large chert pebble (Hill and Kane 1989). None however, resemble the specimen from 5DT271 since none of the other specimens have the range of variation observed in the granite present nor the presence of pyroclastics. (Hill 1988)

BONE ARTIFACTS

One specimen (Figure 35) of worked bone was recovered from Component 1. This is believed to be a hide wedge or hide flesher made from an elk metacarpal. This specimen suffered damage at the time it was discovered. It measures 22.3 cm in length and its working edge is on the posterior side of the diaphysis at mid-shaft. The working edge is intact and is curved with a suggestion of slight use polish along the edges. The tool does not, however, show heavy use. Its use is suspected to be a hide flesher or hide wedge as described by Frison (1979:261).

Interpretive Summary

Evidence has been presented herein which allows for attributing the Component 1 remains to the Sabuagana Ute which both Rivera (Cutter N.D. and Baker 1991) and Escalante (Chavez and Warner 1976) found in this area in 1765 and 1776, respectively. Additionally, dating of the component clearly places it in the historic period probably during the latter part of the Early Contact Phase of the Ute's history (Baker 1988). As outlined in Table 7, which draws upon concepts which must be credited to Eleanor Burk Leacock (Leacock 1971:9-12), this phase would have witnessed development of a contact-traditional cultural profile. As described by Leacock:

> Phase II commences with early contacts, either directly with explorers, missionaries, and traders or indirectly with goods traded through neighboring tribes. The extent to which a reintegration of Indian institutions followed these first contacts has often been underestimated. It has been all too common for anthropologists to assume that the cultural information they were gathering from elders about life styles that stretched back to the beginning of the nineteenth century and even earlier represented pre-Columbian society. Cases in point are the assumptions that individualized patterns of fur trapping in the north woods and the virtually total dependence on the buffalo in the Plains were aboriginal. Indian-white contacts during this phase, which extended over several generations for most Indian societies, were relatively equal and commonly of a mutually beneficial nature. The common Indian preference for contractual relationships with whites - as reflective of interacting but not merging societies - may well stem from this early period. So also may concepts of the "golden age" that Indians still dream of recapturing, with modifications appropriate to modern conditions. (Leacock 1971:11)

For the Sabuagana and perhaps the Taviwach Utes the Early Contact Phase certainly brought different rates and patterns of culture change than it did for the bands which became the Southern Utes for instance. The Phase probably began with indirect contacts as early as the 16th century but would probably not have witnessed significant impacts, other than disease, until late in the 18th century when the Indian slave trade began to escalate. The dates at which the slave trade began to impact the various Ute Peoples is not known, although it seems that Spanish contact did not begin to impact more remote peoples, such as the Southern Paiutes and Chemehuevi until the late 18th and early 19th centuries. While some of the Ute and the Navajo People had been in close contact with the Spanish settlements during the 17th and 18th centuries, this was not necessarily the case for the Sabuagana and Taviwach Utes who, like the Southern Paiutes, lay astride routes of the Old Spanish Trail, although not so far away as the Paiute. The trail did not really open for commerce until the 1830's. Like the Southern Paiutes, the Sabuagana may well have abandoned parts of their territory in order to escape the slave trade which gained impetus in the early 19th century. The actual role of the Sabuagana and Taviwach People in the slave trade is not known, but along with disease, it certainly would have been one of the most serious sources of culture change of the Early Contact Period (Kelly and Fowler 1986:386-387).

Following the Pueblo revolt of 1680 (Simmons 1979:186-187; Sando 1979), Utes who had been slaves among the Spanish, began trading horses to the north along the western edge of the Rockies and were responsible for introducing an equestrian lifestyle to peoples far to the north and west (Stewart 1966, 1987; Opler 1971). It is the reported presence of mounted Sabuagana Utes as documented in 1776 by Dominquez and Escalante which has given rise to the notion that these and the Taviwach people were as deeply involved in an equestrian lifestyle as some of the bands of the Southern Ute (Opler 1971; Smith 1974:17-22; Chavez and Warner 1976:29).

Smith discussed the equestrian impact on the Utes and drew a marked distinction between those who ranged closest to the Spanish Settlements (Moache and Capote) and probably acquired horses early in the 17th Century. In this regard she stated:

> It is not clear that any bands of Utes at any time were fully equestrian, i.e. that they had sufficient horses so that everyone, including women and children, were mounted.
>
> The picture of the Utes as mounted warriors is true only for the Southern Ute bands, and for them, only to a limited degree, as Opler's statement shows. The White River and Uncompahgre bands only ventured on the Plains to hunt buffalo and raid for horses, and then returned to the mountains as fast as possible. They, and the Southern Ute bands, feared attack by the Cheyenne and Arapaho on the Plains. Because little has been known until recently of Northern Ute culture, and because most museum collections consist of typical Plains items gathered from Colorado Utes in the latter part of the 19th Century, it has been possible for some ethnographers to picture the Utes as two different peoples, one horse nomads, the other pedestrian hunters and gatherers. The true picture is that of one people with a basically Basin culture, with a veneer of Plains culture in Colorado, which becomes thinner (and more recent) as you move from the Southern Ute bands to the White River and on over into Utah. As Goss has said (1961, p.2), "A man may put on a new hat, but it doesn't necessarily change the way he thinks."
> (Smith 1974:20-21)

Smith's comments are quite pertinent to gaining some understanding of the Sabuagana's early contact experience. The impacts of the slave trade, probable veneer of an equestrian lifestyle, and new diseases would certainly have led to development of a contact-traditional culture. This is believed to have embodied degrees of acceptance of cultural elements from the Plains and the Spanish Southwest. It may also reasonably be suspected that access to horses and perhaps other particularly scarce and valuable trade goods would have led to intraband status and wealth differences. These in turn could have caused both intra- and inter-band competition. This is a common pattern in the early contact experience of most North American Indian People and was the common ingredient in internecine warfare (Baker 1974; 1975). Such a pattern may well explain the ultimate emergence of the Taviwach Utes as

regional leaders at the end of the Middle Contact Phase when they emerged as political spokesmen for the Ute People (Callaway, Janetski and Stewart 1986:334,355 also Baker 1988). A fortuitous occupation on a major trade route for instance often placed a group in a temporarily dominate position. Often the resulting competition would see such a group destroyed. Another would soon become the "middle man" in the Indian trade and would soon in turn also be destroyed (see Bolton 1950:73). This in turn brought them into the Late Contact Phase with the beginning of administrative stabilization during which the contact-traditional culture rapidly withered away. Inherent in Smith's foregoing comment is that the core of Ute culture was still typical of that of the rest of the Great Basin with its Desert Cultural Tradition as it may have been locally reflected in Buckles' (1971) Uncompahgre Complex. Recently revealed evidence from the 1765 Juan Rivera Expedition into Western Colorado lends further support to this writer's view that the local Utes did not have many horses in the latter 18th Century (Cutter N.D. and Baker 1991).

Consideration of Component 1 at 5DT271 is very relative to the foregoing model of Sabuagana Ute culture change. In dealing with short-term occupations in the historic period it is possible to gauge degrees of culture change for a given people far more readily than for most prehistoric sites. This is because of the ethnohistoric modeling that is possible combined with some precision in dating and a time of rapid and large scale culture change which is often visible in the normal range of archaeological retrievable material culture. It is sometimes possible to go beyond the simple exercise of the "direct historical approach" to a specific Indian people's archaeological identity. In the present study we can contribute in this regard but can also go much further.

The faunal assemblage from Component 1 is particularly useful in allowing us to move into more detailed inquiry and evaluation of Sabuagana settlement analysis and social structure. As demonstrated by Rood (1987) over 45% of the deer elements and 75% of the elk elements consist of lower front quarter bones (radii, ulnae, humeri). This percentage is drawn from a population of 5 deer (3 mature and 2 yearling) and three elk (2 mature males and 1 mature female). One bison is also represented by lower limb bones. Recovered body parts for both deer and elk indicate that lower front quarter, phalanges, some vertebra fragments, and skulls were the only items returned to or deposited at the site. Rood particularly notes the absence of hind quarters and believes it unlikely that these elements were left at the kill or were in some way removed from the site area. Rood and this writer concur that the faunal material strongly suggests a distribution of deer and elk body parts among Ute households. This view is strengthened by the relatively high number of individual kills represented and the consistency in the faunal elements found at the site.

Sharing of meat among relatives or members of a hunting party is documented for the historic Utes and other Great Basin peoples. The general pattern is believed to be consistent with that generally known to be customary among many hunting and gathering peoples from around the world. Smith (1974:55) reports that the White River Ute divided bison

and elk kills among all the participants in communal hunts. In the case of communal antelope hunts, the meat reportedly belonged to whoever killed it (1974:55). In the Great Basin, small game distribution from communal hunts was on an equal basis except that hunt organizers and leaders, or rabbit net owners sometimes received larger shares (Fowler 1986:82). Among the Western Shoshone, relatives frequently collected and shared food (Thomas, Pendleton and Cappannari 1986:277). The Eastern Shoshone are known to have followed a sequence of sharing in distribution of buffalo meat in which hunters had rights to their kill (Shimkin 1986:316-317). In his analysis for Shoshonean sociopolitical groups, Steward commented as follows on the subject of meat distribution:

> Hunting was the complement to harvesting. Game provided not only essential foods but skins for clothing and materials for certain implements. Most hunting was also on a family basis. Small species, such as rodents and insects, were taken by both men and women. Large game was usually taken by men, while women gathered plant foods. A hunter was obligated, however, to share large game with other members of the village. Thus a family was able to provide most of its wants without assistance. But in time of dire need other families came to its aid if possible.
>
> But the family was not always the maximum economic unit in hunting. When taking buffalo, antelope, rabbits, deer, mountain sheep, and, under certain conditions, water fowl, fish and even insects, collective effort increased manyfold what an individual hunter could have procured.
>
> (Steward 1938:231)

In summarizing on Great Basin groups, Steward also addressed the responsibilities, if not strict obligations, to persons outside the household. He points out how related families usually lived in close proximity to one another. These families were usually the households of parents, their married children, brothers and sisters and their spouses, and other close relatives. These related families traveled together and usually camped near one another. He points out that while <u>not</u> "obligatory, food was freely shared" with one's relatives (Steward 1938:240). In discussing personal property, Steward commented as follows:

> Community property was rarely held by groups larger than the household. Women owned their baskets, clothes, and other objects used by them, while men owned hunting equipment and things peculiar to their sex, The household owned the house, foods, and general equipment. All this conforms to the work-use-ownership principle. The outstanding exception is large game. A hunter was entitled to keep the skin and some choice portion of the meat for his family but was obliged to share the remainder with village members, first consideration being given to his relatives. The loan of objects to and sharing of other food with members of the community were acts of courtesy and in no sense were recognition of communal claims.

> Truly communal property was scant. Often many families cooperated in the construction of a deer or antelope corral and divided the game taken. They jointly prepared and used dance grounds and fish weirs. (Steward 1938:253)

Steward further pointed out that in the division of large game among all residents in a Northern Paiute Village, the hunter would keep only one hind quarter for his use (1938:60). Hind quarters, and the tenderloins from the backbone, the choicest portion on most large game animals are exactly what are missing from the Component 1 faunal assemblage at the Roatcap Game Trail Site. In this instance, it is not a matter of parts of a couple or even a few big game animals which are missing. It is a clear case where the hind quarters and the backbones with their tenderloins are absent from nine individual kills represented in the assemblage. Although a statistical test has not been generated for this, it seems very clear that we are dealing with some form of very consistent patterning in the distribution of big game body parts. Elman Service (1966:33) points out that in all societies the means by which interpersonal dealings are patterned are statuses of various kinds and in hunting-gathering societies, "these statuses are nearly exclusively familistic, that is, they are kinship statuses". In discussing the Kung Bushmen of South Africa, Service described the repeated waves of sharing "which accompany meat distribution" (1966:17).

It is suggested that the pattern in the faunal assemblage of Component 1 reflects a consistent pattern in meat distributions among a group of associated Ute households. It is furthermore suggested, in keeping with Service's reference to the familistic statuses involved in meat sharing (1966:17) that the distributions was based on kinship and the relationship of this particular household within a Ute deme, which is a cluster of families that were "usually related through the matriline and resided matrilocally". Demes owned no property and in most cases, individual families, as the basic economic unit in Great Basin societies, occupied separate dwellings and were relatively autonomous. The demes were mobile exogomous year-round residence groups that were "held together by their respect for the deme headsman whose status was usually derived from his hunting and from his skillful direction of the camp's movements (Callaway, Janetski, and Stewart 1986:353; Steward 1938:44; Shapiro 1986:628).

In light of the combined ethnographic and archaeological data it is possible to suggest an explanation for the Component 1 record. The component is believed to reflect one household within a classic Ute deme whose member households were probably clustered close by. The faunal remains indicate that the household was allotted meat from a series of big game kills on the basis of kinship which most likely involved the household's relationship to the deme headman. This is as opposed to meat distribution based on ones role in making the kill. It seems unlikely that a household or one of its members would consistently, on nine occasions, play the same role in making a kill. One other possible explanation must, however, be recognized. That relates to the possibility that the component reflects a primary butchering station from where choice cuts, namely hind quarters and tenderloins were removed and dispatched to a base camp or other point of further

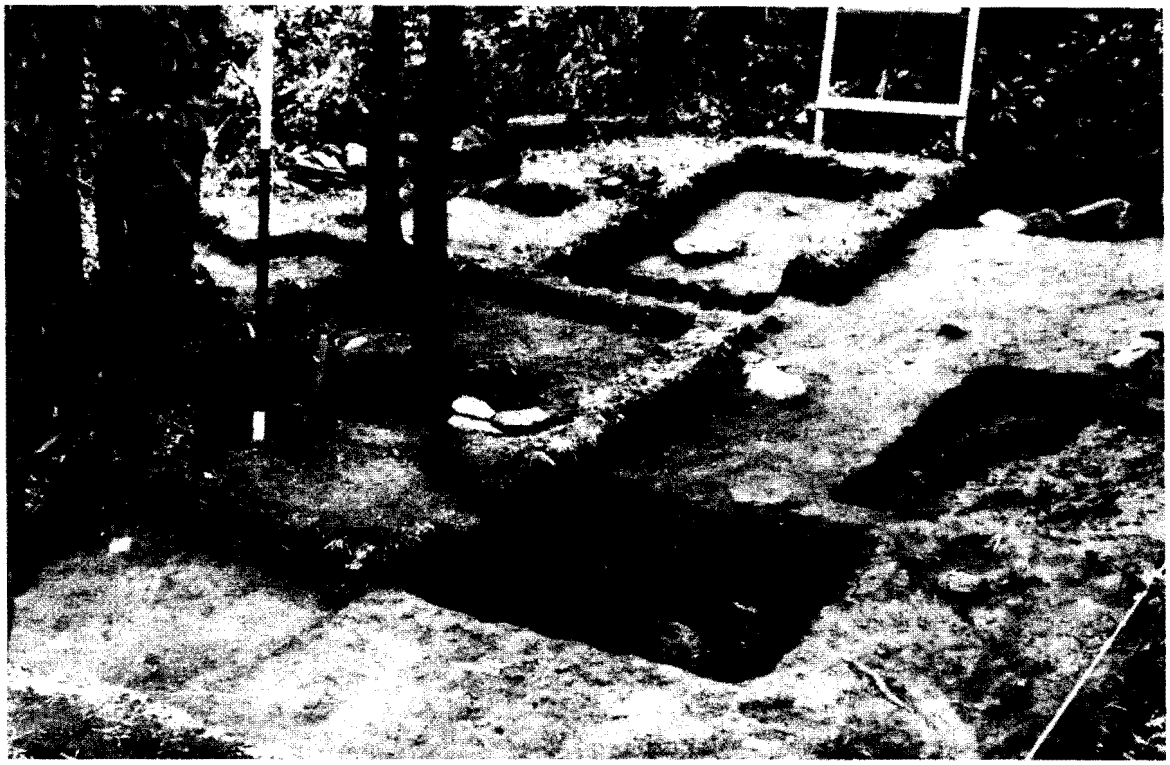


Figure 36a: Post-excavation overview of historic Ute component (Component 1) at 5DT271. View is to west. Vertical scale is in .5 meter increments and is standing in pit of hearth. Millingstone may be seen in situ in Unit 13X immediately in front of screen. Deep Test Unit 13R is at right center of photo. Upper levels of 13R yielded partially articulated elk front quarters and associated butchering tools. August, 1986.

distribution. In such a case, we should at least expect to see more ribs and lower hind quarters. These are generally absent and the explanation is contradictory to what is known of the settlement system and ethnographic methods of meat distribution. Furthermore, it is believed to be highly unlikely that whole animals could have been transported to this location even with the use of horses, which are of limited use in this rugged environment. It is a near certainty that only selected elements were transported to this site.

The presence of lower extremities of one bison (a right calcaneum and a right proximal metacarpal) further supports the kinship distribution theory. The limited bison bone in the site indicates that this species was not commonly taken in the area when compared to deer and elk. In this regard, it may be suggested that on the rare occasion when one was taken, the distribution system finally carried a limited and less than choice portion to this household. This is as compared to what appears to have been a larger part in the more frequent sharing of deer and elk. This interpretation is based on the assumption that we were able to recover most of the faunal remains from the component.

The historic Ute component at 5DT271 allows for a comparatively detailed look into one seasonal household within the settlement system of a Ute deme. In this regard, we are able to discuss the subject of Ute household archaeology in further detail and comment on it's place within the deme's settlement system in the manner advocated by Deetz:

> If households can only be understood in their social context, then it follows that they embody in microcosm many of the dimensions of that context. Not all of a culture's codes might be embodied within the household, but it is a safe bet that few if any aspects of household behavior and thought are at odds with that of the greater society. As the universal minimal group of individuals who interact according to a culture's rules, the household/family is visible, relatively easy to access archaeologically, and abundantly endowed with information. Whether a structural, functional, or evolutionary approach is taken to obtain this information, the household reveals relationships of thought and substance that can aid immensely in understanding the past. Perceiving these relationships on a scale that is manageable might allow us to project beyond the household to the community and the state. We will probably never excavate an entire state, but tens of thousands of households await our attention. (Deetz 1982:724)

In our particular Ute household, the presence of women and their handiwork are, archaeologically speaking, quite visible when compared to the men. In analysis of the site plan and its contents (Figure 29), the role of males is very hard to discuss except in the presence of the big game kills and perhaps in the projectile point which brought them down. The household, or portion of it revealed by our excavations, appears to have been primarily a woman's world. Butchering, food preparation, hide working, pottery manufacture and most of its use all emphasized women's roles within the indigenous Great Basin scheme of life. There, like most hunting and gathering societies, the division of labor was sexual

(Steward 1938:44; Martin and Voorhies 1975:182-183). The regional archaeological literature contains few references to interpretation relating to the sexual division of labor in the households, particularly in regard to open sites as opposed to the structural sites of the Classic Southwest. A recent exception to this may be found in Holmer and Weder's excellent article on projectile points of the Intermountain West (Holmer and Weder 1980:67). In that article, the authors point out how projectile point distributions show little regard for traditional ceramic boundaries. They suggest that an explanation may be in the idea that male hunters are more mobile and are more capable of sharing hunting technology with inhabitants of surrounding areas. In contrast, women were probably more stationary while staying at home and performing household duties. The female-oriented household at 5DT271's Component 1, suggests that within the maternally-oriented society of the late Early Contact Phase of the Sabuagana Utes, a contact-traditional kinship system was still functioning in relation to at least one major aspect of the subsistence economy of a deme as it worked through its seasonal round.

Rood (Appendix I) found indications that the Component 1 household may have been occupied during the summer and early fall months. This opinion was based on limited evidence from epiphyseal closure rates of the deer in the assemblage. Smith (1974:46-52) implies that deer hunting may have been pursued throughout much of the year by the Utes. If accurate, this view may relate to the wide distribution of deer throughout a wider variety of habitats when compared to elk. Elk, however, are reported to have been hunted in the winter when the snow was deep by use of the surround as well as the stalking method but Smith makes no mention of the use of communal drive lines and game traps for elk (1974:54-55). Every Ute group is, however, reported to have used communal drives (Callaway, Janetski and Stewart 1986:34). Bison were reportedly taken outside of the Ute core area, either on the Plains to the east or northward and into Wyoming (Smith 1974:53-54).

Information from the BLM regarding the movement of big game in the North Fork Valley area indicates that today the animals, particularly elk, first move to lower elevations in the upper reaches of the valley as the deep snow comes to the high country. They then tend to move down valley as the winter progresses. This is in contrast to earlier times when the elk would stay high up in the deep snow where they would not be disturbed and could minimize energy losses rather than maximizing intake. When they do move, however, they generally follow the drainages down toward the valley and then move down valley following the slopes of the North Fork Valley itself. The deer usually move down out of the snow well ahead of the elk. The pattern for deer movement is not believed to have changed much in historic times except that they used to come clear down into the main valley. Elk, however, used to stay higher but now retreat lower from the deep snows in order to escape being disturbed by snowmobiles and cross country skiers. The numbers of deer moving to lower elevations would start building over warm month populations about October or November depending on weather. This movement would peak in December. By January the foothills above the North Fork would be full of snow and would offer an inhospitable environment for temporary hunting camps, particularly when the deer had

moved lower into and down the North Fork Valley. Elk, on the other hand, would remain high much longer and optimum hunting would most likely not have developed until late in the fall and early winter, if they moved to lower elevations at all. Weather conditions normally remain reasonable in the foothills into December (Ferguson 1987). If the Ute occupants of 5DT271 were taking optimum advantage of big game movement in the foothills above the North Fork, they were probably there squarely during the fall months, particularly if they were engaged in elk hunting. At the end of August 1776, Escalante's journal records an encounter with a party of 80 mounted Sabuagana Utes in the upper reaches of Hubbard Creek only a few miles to the northeast of 5DT271. They reported they were going hunting. If they were such a mounted hunting party as the Spanish doubted, they may have been after bison. Escalante was served jerkied bison meat (Chavez and Warner 1976:29-31). Since these observations came from about the same time as the occupation of Component 1, Rood's observation about a late summer occupation is supported ethnographically. Locally, both elk and deer tend to congregate in high numbers in the drainage of Roatcap Creek and neighboring Stevens Gulch. In this area, fall populations of deer in 1984 were at least 55 deer or more per square mile (Colorado Division of Wildlife 1984).

We know very little ethnographically about Ute bison hunting in the local area. Archaeological efforts have not provided much information either. Escalante reports the killing of a lone bison some days after leaving the territory of the Sabuaganas. This was apparently in the vicinity of El Burranco in the Coal Oil Basin west of Rangely, Colorado. This region is said to have been a "winter haunt" of bison. Escalante also reports Ute "huts and tiny dwellings" throughout a low, narrow valley with a perennial stream on the north side of Grand Mesa during the late summer. This description is believed to refer to wickiups and brush huts in an environment very similar to that of East Roatcap Creek (Chavez and Warner 1976:35, 41 and 42; Bolton 1950:56). This further supports Rood's interpretation of a late summer and early fall occupation at 5DT271.

The very limited amount of cultural debris at 5DT271 suggests we are dealing with a very limited period of occupation. There is no precise way to formally demonstrate the length or even number of occupations. There was no stratification of the component. As evident in Figure 29, there was also little or no overlapping of butchering areas and there was little or no evidence of repeated hearth clearings. The site plan is neat and crisp. The milling stone could in no way have withstood any repeated or prolonged use. Most importantly, there is also only one item each of the core items of the tool kit (mano, milling stone and pottery vessel). There is little or no debitage from lithic manufacture. There was also no decorative personal items, ceremonial or gaming items as usually found in aboriginal sites evidencing long or repeated occupation. Kvamme's site typology model relies on tool diversity, projected number of flakes and site area indices to categorize sites (Kvamme and Black 1986). Within that model we appear to be dealing with a tool kit site such as represents a kill or butchering site. The small site size further indicates the limited nature of the activities which occurred there.

All evidence suggests that we are dealing with a short-term occupation. It seems reasonable to accept the idea that one household participating in a deme's communal hunting efforts could have shared in the spoils of the nine individual big game kills represented in the faunal assemblage during one seasonal hunting and collecting period of a few or several weeks. Steward (1938) indicated hunting camps of Great Basin groups were generally of very short duration, seldom more than several weeks. Hibbets and his colleagues (1979) pointed out in regard to the Utes:

> It is very rare that a site for a camp is occupied a second time and though they all go again year after year to camp near the same spring or small stream they invariably seek a new site for their bivouacs each time. When they leave a camp, their bivouacs are not destroyed and so on coming to a customary camp place of the Utes, it gives the appearance of having been occupied by a very large tribe...
>
> (Hibbets et. al. 1979:174; quoting Fowler and Fowler 1971:53)

Hibbets and his colleagues (Hibbets et. al. 1979:174) found a marked tendency on Grand Mesa for site clusters to have linear alignments which parallel drainages. They attributed this to repeated short-term occupations as suggested in the above quotation. In this light, Component 1 at 5DT271 is interpreted as the remains of the seasonal residential base of one Ute household which was part of a larger deme cluster of similar households which were in all probability located in the close vicinity of 5DT271. Additional sites including 5DT702, 693 and 694 are located within one mile of 5DT271 and may well be candidates for associated households (Baker 1984) within this deme. Due to the heavy ground cover and rugged terrain it is probable that other such sites may still await discovery in this vicinity. Other investigators who may work in this area of the Grand Mesa need to be alert to the possibility that a large Ute deme settlement system, perhaps associated with a wide scale system of game manipulation strategies, may be present in the distribution of sites. The author's personal knowledge of modern hunting methods in this region, particularly as they involve elk, suggest they are patterned and predictable and that the animal's movements can be manipulated. Successful modern hunters frequently rely upon such knowledge in establishing their own hunting stations during the elk season. This is a form of communal hunting that is illegal but is still frequently used.

The site plan and contents for Component 1 are consistent with the few other reported examples of historic Ute wickiup sites. There are few if any other excavated Ute sites in the region which evidenced as complete or well preserved a cultural assemblage as this one. Buckles (1971) has conducted the most detailed analysis of historic Ute sites. After investigating four historic wickiup sites with extant structures, it was his view that after the structures were gone there would be few indications of the sites other than the fire pits and "the very rare artifacts". Except for the faunal materials and the hearth, Component 1 would easily have been missed entirely. Buckles further indicated that wickiup poles are not set in the ground and do not leave post-hole

impressions and that cedar bark beds leave no trace. As discussed earlier, the "clean areas" within the near vicinity of the slab-lined hearth combined with the scatter of brush shelter poles in this area may be the only indications of the actual wickiup location. Buckles' observations are consistent with the Component 1 findings. Despite a serious search for post holes or anchoring rock alignments, no convincing ones were found. Kevin Black has, however, reported evidence of post holes in a wickiup-like structure near Crested Butte, Colorado (Black 1983). It seems unlikely that anyone would reside long in this environment without need for temporary shelter of some kind. Escalante's comments (Chavez and Warner 1976:35) about Ute huts in the vicinity support this quthor's view that Component 1 probably had a wickiup. Carl Conner apparently excavated the interior of a historic wickiup and found little other than cedar bark and a metal tinkler cone which was a personal decorative item that could expectedly be lost in ones' bed (Connor 1984).

Buckles also stresses the problem of demonstrating comtemporaneity of artifact assemblages with structures in settings where surface cover and other stratigraphy is lacking and other components may exist. We were fortunate at 5DT271 to have a site with good ground cover and preservation. Buckles reported that fire pits were present in structures and were situated in central to eastern peripheral positions. All of the fire pits were unlined and very shallow basin shaped. This is in contrast to 5DT271 where the slab lined fire pit is thought to have been situated outside of any structure. This view is held because of the distribution of faunal materials. If the hearth was in the house, then so was the midden. The possibility that the hearth was within one large wickiup cannot be totally ruled out, no matter how unlikely it may now appear.

Buckles interpretation regarding the high degree of female-oriented activities at wickiup sites is consistent with the interpretation presented herein. Buckles' observations generally support the interpretation that we are dealing with short-term ephemeral occupations at most wickiup sites. Of great importance is Buckles observation that no definite male-oriented activity areas were delimited within or on the peripheries of the structures. General utilitarian artifacts were found in the central areas around fire pits (Buckles 1971:627-651). The literature is unclear in reference to the pattern for placement of milling stones within wickiups as opposed to pit houses where they are frequently found.

Since Buckles' work in the 1960's, other investigators have begun to record and even sample wickiup sites in the region. None, however, are known to have revealed as clear and well preserved a component as that documented at 5DT271. These investigations include those reported by Charles (1985), Martin (1980), Nickens and Associates (1986), Connor (1984), Kite (1987) and Jones (1982, 1986 and 1986a).

Buckles (1971) did not feel that he fully demonstrated the archaeological assemblage for his postulated Escalante Phase of the Uncompahgre Complex. He felt that his definition of the Phase should be "viewed as a theory which needs substantial testing rather than being

viewed as an established fact (1249)." He went on (1250) to emphasize that "if the Escalante Phase is considered as representative of Ute archaeology, only a minute amount of information about Ute archaeology is in actuality available if a realistic assessment is made." Buckles' judgement on his own evidence seems fair and this author has no problem in saying the same for the work on the Ute component at 5DT271. It is believed that a contribution has been made in adding to the data base begun by both Buckles (1971) and the Huschers (1939).

Of primary significance in the data from 5DT271 is the role of utilized flakes in the historic Ute assemblage as it reflects a specialized part of the total material culture inventory of these people in the historic period. It is critical to view this assemblage in terms of the specialized tool assemblage used in the butchering tool kit of women, for we are almost certainly dealing primarily with women. Buckles gave only limited attention to lithic debitage in his report on the Uncompahgre Complex. In reporting on the percentages of formed tools to debitage, he reported a very low frequency of finished tools to debitage. He did not report any evidence of simple utilization of this debitage for the Ute sites (1971:443). The lithics from 5DT271 admittedly require more detailed evaluation in terms of use/wear. The relatively high degree of use evident from low level analysis of the debitage, however, may bear a relationship to the assemblage from the game kill at the game drive suspected at 5DT771 nearby. It is of critical importance to pursue this line of investigation in attempting to more completely define the Historic Ute material cultural assemblage. In this regard, the author's subjective impression in dealing with the historic Ute assemblage is that it is comparatively poor in the sophistication of its presentation when compared to the range of materials which Buckles presents for the Uncompahgre Complex as a whole or when compared to the assemblage from Components 2 and particularly 3 at 5DT271 as discussed in following chapters herein. While keenly aware of the limitations in the limited and specialized assemblage at 5DT271, this author cannot do away with a nagging concern that this assemblage and that from 5DT771 are unusual. This may simply be due to nothing more than the fact that few such ephemeral sites from this region have been looked at as closely as these have been. Are we looking at what are actually very ordinary tool kits with a long established presence in the area? Or are we looking at a material culture inventory which was changed by the disruption of the contact experience as outlined in Table 7? We can't answer this question more fully until we get away from attempting to view the entire historic Ute material culture assemblage within one archaeological unit lasting roughly 300 or 400 years. This is what Buckles has termed the Escalante Phase.

The Escalante Phase was certainly hallmarked, at least in its earlier portions, by the presence of Uncompahgre Brown Ware and Desert Side-Notched points. In more closely evaluating good single components such as Component 1 at 5DT271 we must be more alert to the rapid and drastic changes which occurred within the broader time frame of the Escalante Phase. If we are anywhere close to accurately dating Component 1, we are dealing with a period in Sabuagana Ute History when these people had already faced change and were teetering on the edge of even more drastic changes when their entire contact-traditional culture

was about to be even more heavily battered (Table 7). In this regard, it must be asked if some of these people may have become relatively impoverished within a society where a few may have been riding fine horses and living in teepees while others were walking and still living in wickiups (see Stewart 1966)? The contact experience always brought impoverishment to some and greater wealth for others (Crane 1956; Baker 1974 and 1975). The competitiveness which accompanied differential wealth was almost certainly present among the Ute as well as other groups. Are we seeing evidence of this at Component 1? Had lithic availability and/or technology fallen or were these the optimum tools for the task at hand? The answer can only come with additional analysis of small isolated components representing a wide cross-section of Ute society throughout the contact experience. Such an effort will be difficult and expensive and will take a long time by many investigators. Such work is, however, the very meat of historical archaeology with its potential for closely dating and identifying components. The high percentage of utilized flakes may ultimately prove to be merely a red herring. It also may provide a way to more capably identify historic Ute sites and it may be significant in helping to gauge culture change among the Ute. Buckles (1971:443) and I appear to agree that closer analysis of debitage will be required if archaeology is going to solve problems such as are involved in working with historic Indian Peoples. This author's very recent and extensive work at Formative Stage Ute and Fremont Sites near Rangely in Rio Blanco County, Colorado has confirmed the critical importance of debitage analysis in differentiating between them and effectively dealing with short-term occupations (Baker 1991a).

CHAPTER 5

COMPONENT 2 AT 5DT271
THE ROATCAP GAME TRAIL SITE

Excavation Summary

Like Component 1, Component 2 is also located on the oak brush obscured lower terrace (Figure 17). It stratigraphically underlies Component 1 by more than half a meter (Figures 26 and 37) and its living surface is focused around a simple cobble-ringed hearth. This hearth is 11 meters east of the slab-lined hearth in the historic component (Figure 21). The living surface does not, however, extend under Component 1 except at the extreme west edge of the former and the east of the latter as indicated in Test Pit 14N (Figure 26). Stratigraphic evidence for the deeper component is absent under the main living area of Component 1 as indicated in Test Pit 13R (Figure 27) although one flake of tool stone was found well below Component 1 in this test pit. Component 2 revealed the interior of a wickiup-like structure in contrast to Component 1 which yielded a central activity area presumably outside of a structure.

Component 2 was actually the first to be found on the lower terrace. Early in the excavation program a discretionary test pit, Unit 4, was established at the toe of the slope on the lower terrace (Figure 39a). This was done in order to see if lithic materials from the component originally recorded in 1979 were accumulating at the base of the slope as a result of slope wash. This initial test produced profuse deer bone in the sod and duff. Ron Rood ultimately determined that this deer died a natural death (Rood 1987) and was not related to the faunal material of the historic Ute assemblage of Unit 1. The test did, however, yield a flake of white tool stone and a flake of basalt at about .5 m below ground surface. Its profile (Figure 40) also revealed a thin layer of culturally stained silty colluvium which suggested a buried occupation level. It was during the excavation of this test unit that a crew member accidentally discovered the surface hearth at Component 1. Test Pit 5 (Figure 39a) was subsequently established southeast of No. 4. It revealed a more substantial layer of culturally stained ashy colluvium as well as more flakes of tool stone. The excavation was subsequently expanded and revealed a cobble ringed fire hearth and living surface (Figure 39) with a small assemblage of lithic artifacts.

Component 2 was excavated using a series of operation and suboperation designations for a grid of 1 x 1 meter squares (Figure 39a). An area of about 16 square meters was ultimately excavated. Excavation was generally by shovel and trowel according to the natural stratigraphic levels illustrated in Figures 40 and 42. All soil was passed through ¼ inch mesh screens.

The soil profile revealed a series of rocky layers of colluvium which is believed to be a redeposited till (Figures 26, 40, 42 and 43). It contains a variety of wholly unsorted gravels and rubble of all kinds

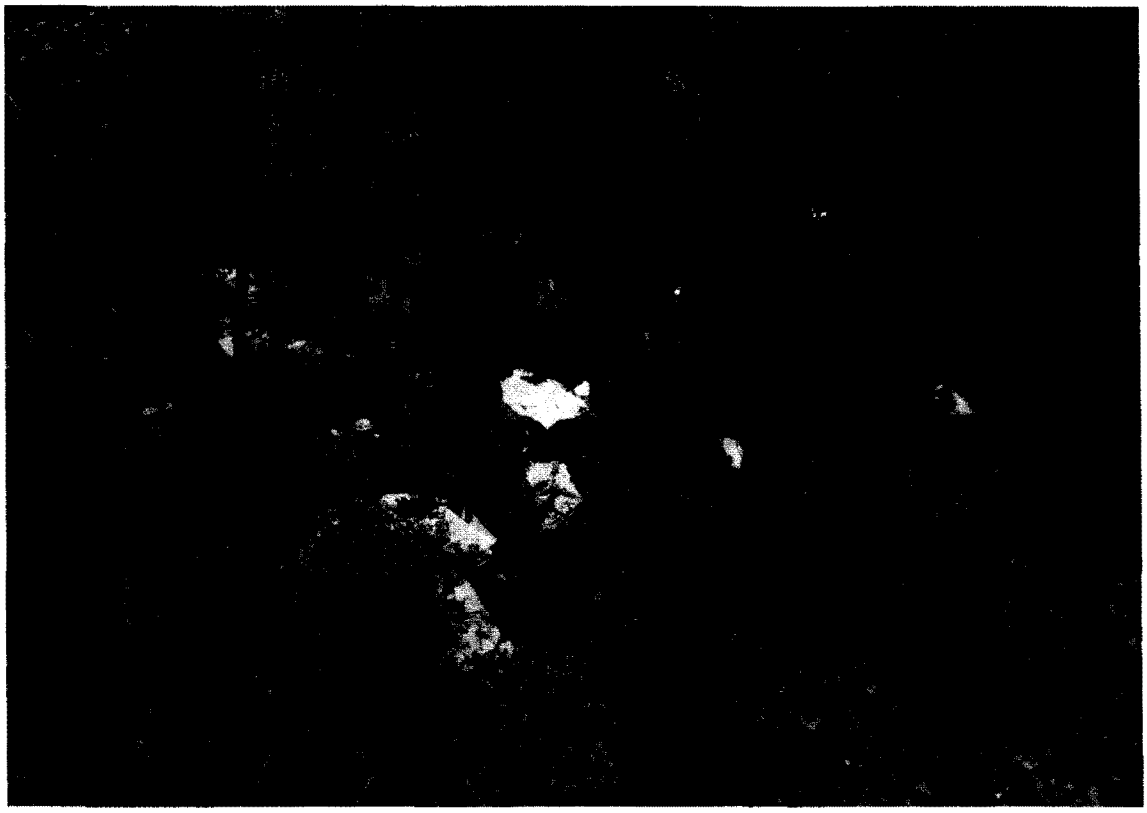


Figure 37: Post-excavation overview of Component 2 excavation area on lower terrace, 5DT271. View is to northeast from hillside across East Roatcap Creek. August, 1986.

of rock. The Component 2 occupation surface was on a silty/sandy colluvium which had inclusions ranging from gravels to boulders. The cultural level itself was a more silty colluvium with small gravels and sands which contained charcoal.

Dating Concerns

A radiocarbon date for the death of the wood burned in the occupation of Component 2 was determined from charcoal in an ash heap on the living floor adjacent to the hearth (Figure 39). The date (Beta 18089) was 1,190 ± 60 B.P. or A.D. 760 ± 60 (Appendix IV). This date was determined from a substantial sample of charcoal and, despite concerns for the "old wood effect" and potential time lag prior to combustion, is considered to be reliable due to its small standard deviation. Although several other samples were taken from the occupation level, budgetary restrictions precluded ordering additional radiocarbon dates. Even though additional dates were desired, the one probably pre-dates the occupation but is believed to be sufficient to generally place this component into the local cultural chronology (Table 1). In this regard, the component would derive from the early Coal Creek Phase or late in the Ironstone and Dry Creek Phases postulated by Buckles (1971). It is clearly a Formative age site within the Fremont (Marwit 1973) or the late Basket Maker periods (Kidder 1927). In terms of Irwin-Williams' (1973) Oshara Tradition, it would fall within the Sky Village and Loma Alto Phases. Buckles' detailed chronology for the Uncompahgre Complex has not yet been fully accepted by archaeologists working in the region. This is primarily due to a lack of supporting empirical data, namely well defined assemblages supported by radiocarbon or other dating methods.

The probability of a post-A.D. 760 date places Component 2 early in the Formative Stage summarized by Reed (1984:3) as follows:

> Formative Stage. Following A.D. 1, there occurred an important shift in the economic adaptations of prehistoric peoples in the northern Colorado Plateau. Cultigens became an important source of food, such as the Anasazi in Southwestern Colorado and the Fremont of Utah and Northwestern Colorado flourished in many areas. In West-Central Colorado, however, there is scattered evidence of cultigens, masonry structures, and ceramics, but these are rather rare, and often evince styles of architecture and types of artifacts discordant with typical Anasazi or Fremont sites. Consequently, the cultural unit describing those few sites with cultigens, masonry structures and ceramics will simply be termed the Formative Stage, making no assumptions as to cultural affiliation. The degree to which the prehistoric peoples of West-Central Colorado conformed to a Formative Stage lifeway is presently not well understood. Present indications are, however, that the transition from an Archaic Stage lifeway to a Formative Stage lifeway may not have been as complete as compared to other contemporary groups of the northern Colorado Plateau. Present data suggests that the Formative Stage dates between A.D. 500 and 1200 in West-Central Colorado. (Reed 1984:3)

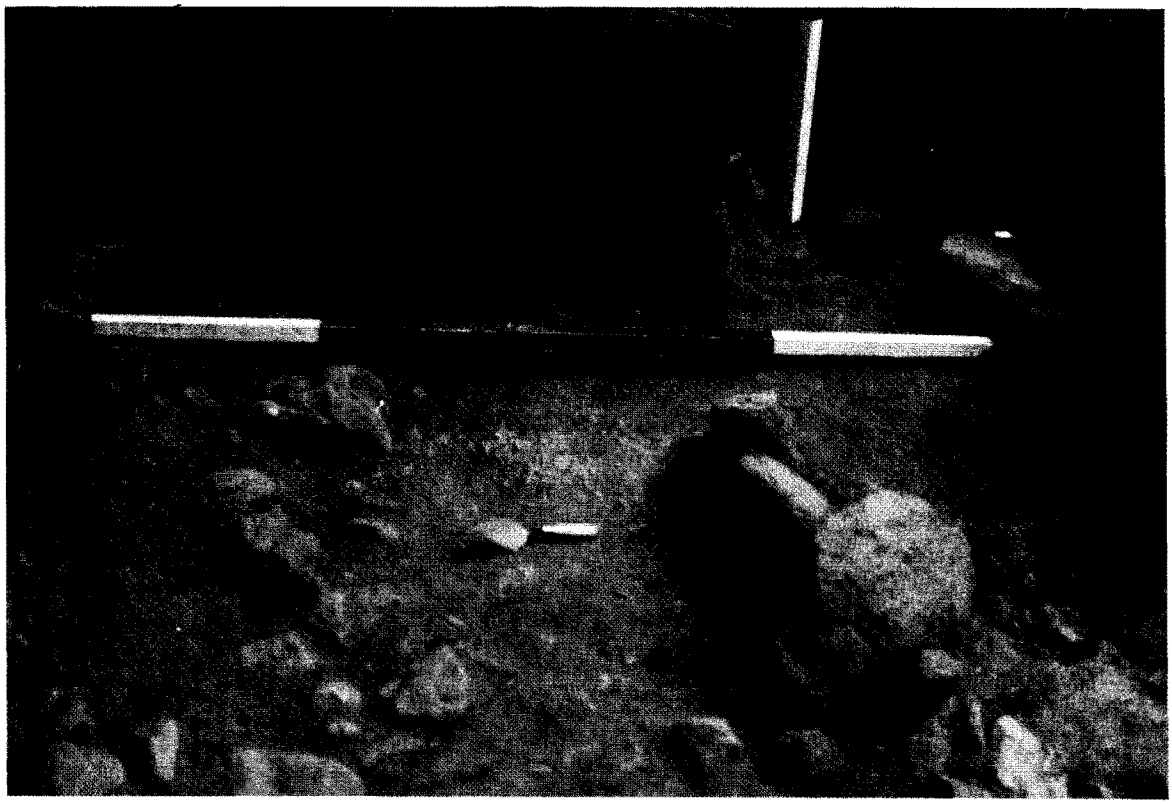


Figure 38: Post-excavation overview of hearth and east portion of living surface in Component 2, 5DT271. Charcoal from adjacent to this hearth yielded a date of 1,190 ± 60 B.P. (Beta 18089) or ca. A.D. 760. The living surface is believed to be the interior floor of a brush structure. A small, corner-notched arrow point and an ovoid chert blank were found on the floor adjacent to the hearth. View is to east. Scales are marked in .5 meter increments. August, 1986.

As indicated in Table 1 and pointed out in the quote from Reed, it is important to note that the period of time was marked by the rise of the Anasazi and Fremont traditions which were characterized by cultigens, ceramics and masonry structures. These traditions were respectively present to the southwest and northwest of the North Fork Valley and may be present in the near region in the "hogans" described by the Huschers (1943).

The team which originally recorded 5DT271 suggested the site dated to the "Late Post-Archaic Period" or about A.D. 950-1500 (Hibbets et. al. 1979). They do not appear to have missed the mark too far, although the issue of cultural affiliation was not addressed. Among the radiocarbon dates from West-Central Colorado, Beta 18089 represents a time period for which we have only a few dates (See Reed 1984:29 and also Gooding and Shields 1986:153). This chronological position also places the component at the very end of the Archaic sequence which Schroedl has proposed for the Colorado Plateau (Schroedl 1976; also see Baker 1980). One of the salient considerations for this period is that arrow points, as opposed to larger dart points, are currently believed to have appeared near the end of the Archaic Stage and, according to Reed (1984:25) are generally uncommon until approximately A.D. 500 during the Formative Stage. Recent data from the Great Basin do, however, suggest that the bow and arrow were in use as much as 1,000 years earlier and long before the first appearance of Fremont peoples in the eastern Great Basin (Webster 1987).

A major consideration relative to this period in time is that it marks the rise of both the nearby Fremont and Anasazi cultural traditions which have been studied in some depth. The local significance of this period is otherwise unknown except in terms of Buckles chronology where he states:

> Coal Creek Phase, A.D. 700 - A.D. 1300
>
> Levels 1 through 4 at the Squint Site, Levels 1 through 4 at the Christmas Rock Shelter, and Levels 3 through 5 at the Carlyle Shelter are all considered to be assemblages of the Coal Creek Phase which derives its name from the stream valley northeast of the Squint Site.
>
> This phase is one of the most securely placed phases, it is believed, relative to its position between the Camel Back and probably the Ironstone Phases. The large number of assemblages of the Coal Creek Phase appear to document an evolution in tools from early Coal Creek Phase tools which are similar stylistically in some respects to Ironstone Phase tools, particularly in the projectile points. The closest resemblances in points to the Ironstone Phase are points of Level 2b through Level 4 at the Squint Site which are small size points but shaped similarly to the larger and earlier Ironstone Phase points. The reduction in sizes of these points in the Coal Creek Phase are believed to be related to the introduction of bows and arrows to the cultural inventory of the Uncompahgre Complex. The Coal Creek Phase Assemblages

> closest resembling Ironstone Phase Assemblages in artifacts other than projectile points are the assemblages of Christmas Rock Shelter. (Buckles 1971:1276-1277)

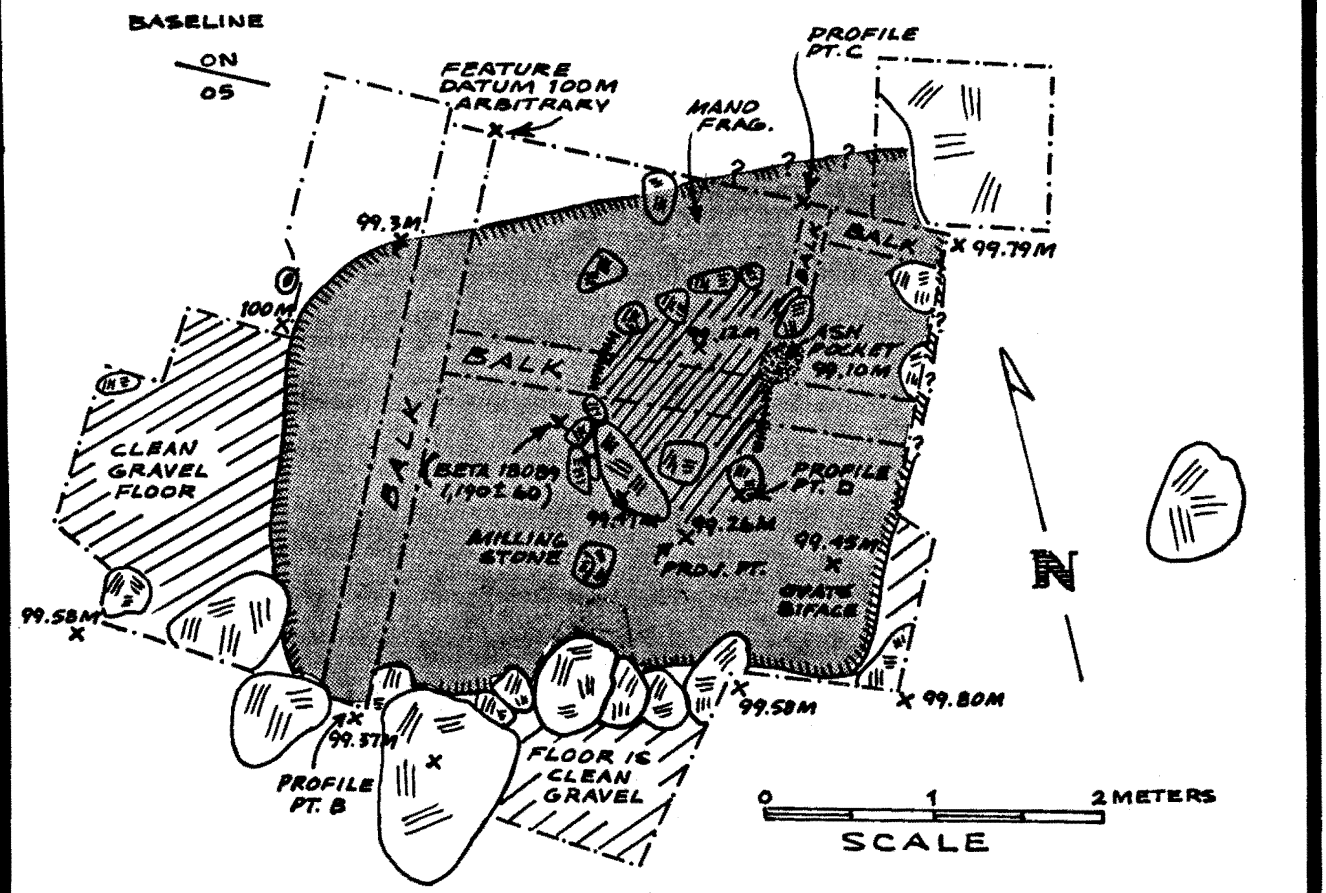
The post-A.D. 760 ± 60 date for Component 2 places it in the Sky Village or Loma Alto Phases of the Oshara Tradition as proposed by Irwin- Williams (1973) for the Anasazi area of Southwestern Colorado. By most measures, the dating for this component places it squarely in the late Basketmaker III or early Pueblo I Periods. On the early side, it would be A.D. 700 or with a two sigma calibration A.D. 640 at the earliest. This is still late in the Basketmaker III Period. The latest dates would be A.D. 820 or, at the two sigma level, A.D. 880. The latter dates would put the occupation in the time frame generally ascribed to Pueblo I of the Anasazi chronology (Eddy, Kane and Nickens 1984:14).

Radiocarbon dating of the Fremont Culture, which is very poorly understood in its Colorado manifestations, suggests that it emerged as a recognizable archaeological entity about A.D. 400 or 500 or earlier and disappeared about A.D. 1300 (Marwitt 1970:151, 1986; Reed 1984:35). The Fremont culture and its relationship to the Formative Stage in West-Central Colorado is fraught with difficulties. Component 2 at 5DT271 would, however, relate to the early to middle period of the Fremont time span. Reed (Reed 1984:30-42) has succinctly discussed the Formative Stage "Lifeway", as he terms it. He pointed out the perhaps erroneous assumption that this stage in West-Central Colorado was representative of either the Anasazi or Fremont Traditions when in fact it may actually be represented by an "in situ development from an Archaic technocomplex." In this regard, Reed states:

> In this scheme, people practicing an Archaic tradition lifestyle adopted a Formative Stage lifestyle as the need to intensify food production arose. Being relatively close to Anasazi and Fremont culture areas, they were able to trade certain items, such as ceramics, and were open to influence for such things as architectural styles. The importance of cultivated foodstuffs relative to collected wild foods may not have been similar to either the Fremont or the Anasazi; perhaps hunting and gathering techniques were still able to meet most of the economic needs. (Reed 1984:39-40)

Dating for well identified local West-Central Colorado manifestations of the Formative lifeway are scarce since much of the work with these sites was done prior to the development of radiocarbon dating. There are suggestions that the lifeway was operating in the area between at least A.D. 580 ± 65 and A.D. 1045 ± 65. This period may have extended longer than either of these two dates (Reed 1984:41). The occupation at Component 2, 5DT271 appears to fall squarely within the time when a Formative lifeway was operating whether it be Anasazi, Fremont or locally inspired and/or represented among Buckles (1971) suggested phases of the Uncompahgre complex.

FIGURE 39



LEGEND:
- = EXCAVATION LIMIT
- = HORIZONTAL SOIL CHANGE AND PROBABLE LIMITS OF BRUSH STRUCTURE
- = UNOBSERVED BUT PROJECTED LIMITS OF BRUSH STRUCTURE
- = CLEAN GRAVELLY COLLUVIUM
- = ZONE OF FIRE REDDENED EARTH
- = CULTURALLY MIXED AREA INSIDE STRUCTURE
- = ASH CONCENTRATION
- = HEARTH AREA.
- — MILLING STONE LOCATION IS APPROX. ONLY

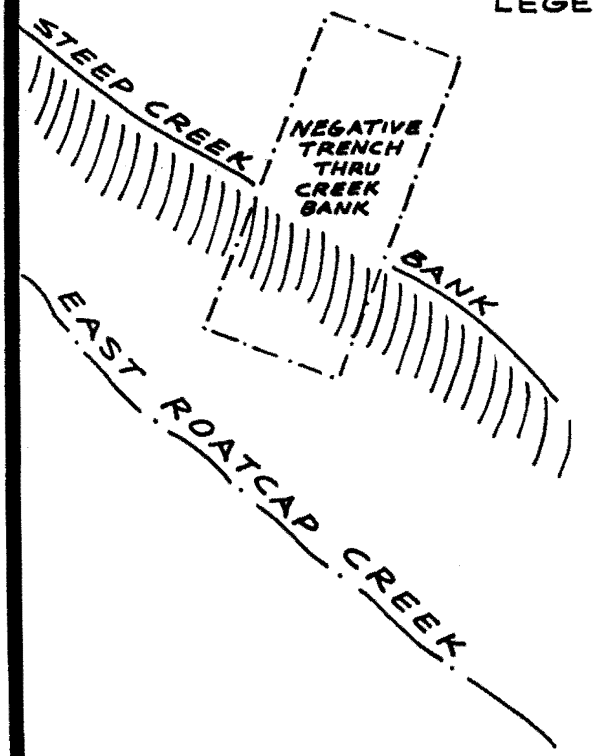


FIGURE 39:
THE ROATCAP GAME TRAIL SITE. (5DT 271)
DELTA COUNTY, COLORADO
ARCHITECTURAL PLAN OF PREHISTORIC FEATURE IN COMPONENT #2

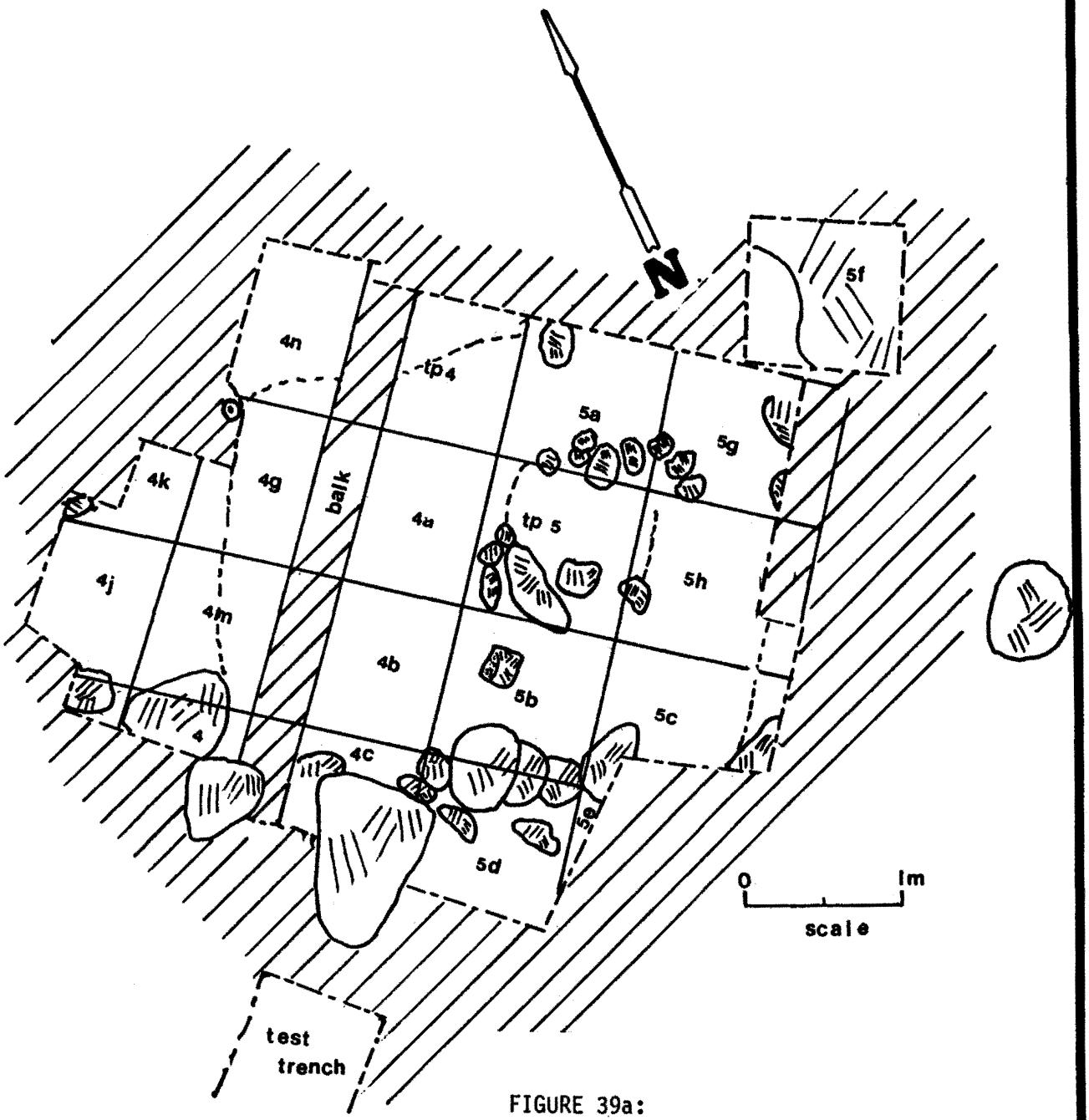
AUG. 28, 1986 (CRI)

Architecture and Use of Space

Excavation of Component 2 (Figure 37) revealed a living surface covered with 10 to 15 cm of culturally mixed fill around a central cobble ringed hearth (Figures 38 and 39). No post molds, excavated pit, burned clay daub, heavy structural members or other direct evidence of a structure were found. The presence of marked horizontal soil changes at the east and west edges of the feature area are, however, interpreted as evidence that some form of walls were present at those locations. This soil change was evident only in the absence of the obvious culturally mixed silty colluvium of the main occupation level (Figures 40, 41, 42 and 43). This stratigraphic unit was quite conspicuous from the time the first test pit was excavated. At the west edge, it abruptly stopped (Figure 39b). The clean undisturbed silty colluvium extended to the west across the floor of Units 4G, 4H and 4M. A similar contact was observed at the extreme east edge of the excavation area (Figure 39).

The south wall of the living surface was bounded by a series of large boulders (Figure 39). The culturally mixed colluvium did not extend south beyond this line of rock and actually began to pinch out on the north side. Areas south of these boulders were excavated and a test trench was cut through the creek bank to the south to further test the idea that the visible occupation surface was confined to the north side of these big boulders. These tests confirmed that belief. The occupation area was bounded on the north east by another and truly massive boulder in Test Pit 5F (Figures 21 and 39). Again, the culturally mixed colluvium thinned out as it approached the boulder. It was, however, clearly present in this unit. At the east side of the excavation area the situation was similar and the cultural mixing ended in a contact with a cleaner sandy colluvium. It is necessary to point out that the rubbly nature of the living surface and overall profile often made it extremely difficult to make observations on fine soil changes. Another outlying unit (Unit 4S) was excavated four meters to the north of the hearth in order to confirm that the culturally mixed level did not extend to the north. This test was negative in regards to the cultural mixing. It did, however, yield one flake of tool stone from the same level as the occupation surface just as Test Pit 13R, revealed a deeply buried artifact but no culturally mixed soil beneath Component 1 10 meters to the west. The stratigraphy of 4S was, however, much simpler and lacked the complexity of the profiles overlying the living surface (Figures 40 - 43). The profile was nearly identical to that noted in Test Pit 13R (Figure 27). It did indicate that some cultural materials were distributed outside the main feature area within a layer of brown clay/silt colluvium with a variety of inclusions ranging from gravels to boulders again suggestive of a redeposited till. Test Pit 14N was excavated as a stratigraphic control four meters to the northwest of the hearth (Figures 21 and 26). This unit revealed a complex profile similar to that overlying the main occupation surface in Component 2. It also showed limited traces of cultural staining at the same level as the rest of the component. This suggested that the general occupation surface of Component 2 did extend outside the confines of the activity area within the presumed structure. Evidence of any cultural mixing thinned out the further away from the structure believed represented in the living surface.

Figure 39a



LEGEND:

- excavation limit
- grid lines
- soil change
- rock
- tree
- unexcavated

FIGURE 39a:

The Roatcap Gametrail Site (5DT271). Provenience Plan Showing Operations and Suboperation Designations for Component 2 Excavation.

-Arabic Numbers are Operations
-Letters are Suboperations

As indicated in Figure 39, it is suggested that a brush structure with a central or slightly off-center hearth existed on the Component 2 living surface. As suggested in Figure 39, this structure would have been roughly 3 x 4 meters across. The lack of evidence for posts is not surprising since there is evidence to suggest brush structures were not anchored with posts (Buckles 1971:1253 citing Huscher 1939). Smith (1974:34-36) has described Ute brush structures of this type. She indicated that the size of the brush shelter was determined by the length of time it was to be occupied. If it was for very temporary use it would be small and not carefully made. Winter shelters were, however, said to be much larger and more carefully made. Ethnographic descriptions of brush shelters were said to vary on some details but were consistent in regard to the basic structure. As reported by Smith, these bear a strong similarity to the archaeological, data from Component 2. In using this ethnographic example from the Utes, there is no attempt to imply that the feature is associated with a Numic speaking people. The description is only offered as a general account from the Great Basin culture area.

As reported by Smith, there appears to be an appreciable similarity between the ethnographically-described Ute winter houses and the architectural data from Component 2. Smith states:

> The winter house was big enough to sleep ten or twelve people. It was about 15 feet in diameter and 10 to 15 feet high. A hole for the fire was dug in the middle, directly under an opening which had been left for a smoke hole. They did not burn juniper in the fireplace because it might pop and set the shelter on fire. Pine was the best firewood. The wood was kept outside the house. Food and water were kept in the house on the right of the doorway as you entered. Water was not kept overnight; a fresh supply was brought in every morning in the basket water jug.

Smith also comments on furnishings of winter houses and states that mats of tules were used to lean against the inside walls and were also used to sit on. Floors were covered with juniper bark, cattails or sagebrush except for the area around the center firepit (Smith 1974:36).

Ethnographic descriptions of wickiups were said to vary as to details among some informants. There was apparent consistency in describing the basic structures. Smith summarized as follows:

> In making a shelter four poles were selected and tied together at the top with a buckskin thong. There was no prescribed way of tying the knot. These were set up, then other poles were leaned against them, making a circular frame. From 12 to 15 poles were used. Then horizontal strips of willow were tied around the frame. There were three of these horizontal strips, and they were tied to each pole with willow withes. Next, brush with the leaves left on was piled against the framework and long tules were laid on top of them. Three horizontal strips of willow, one placed about a foot from the

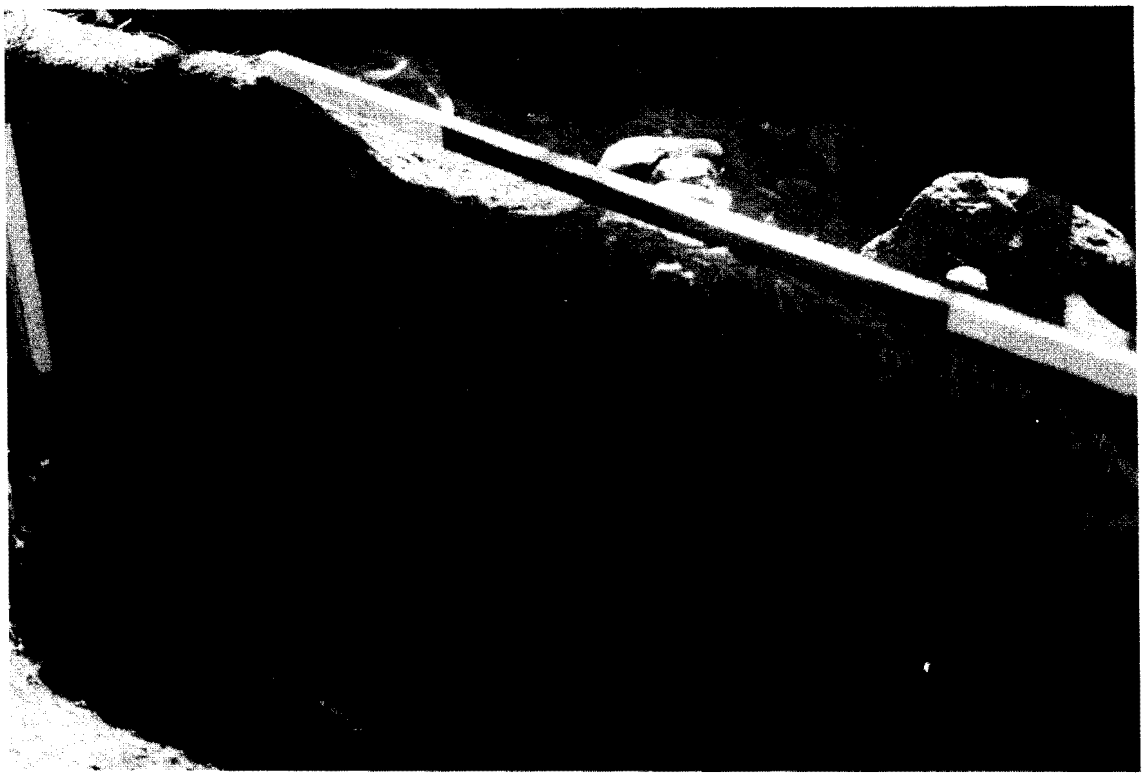
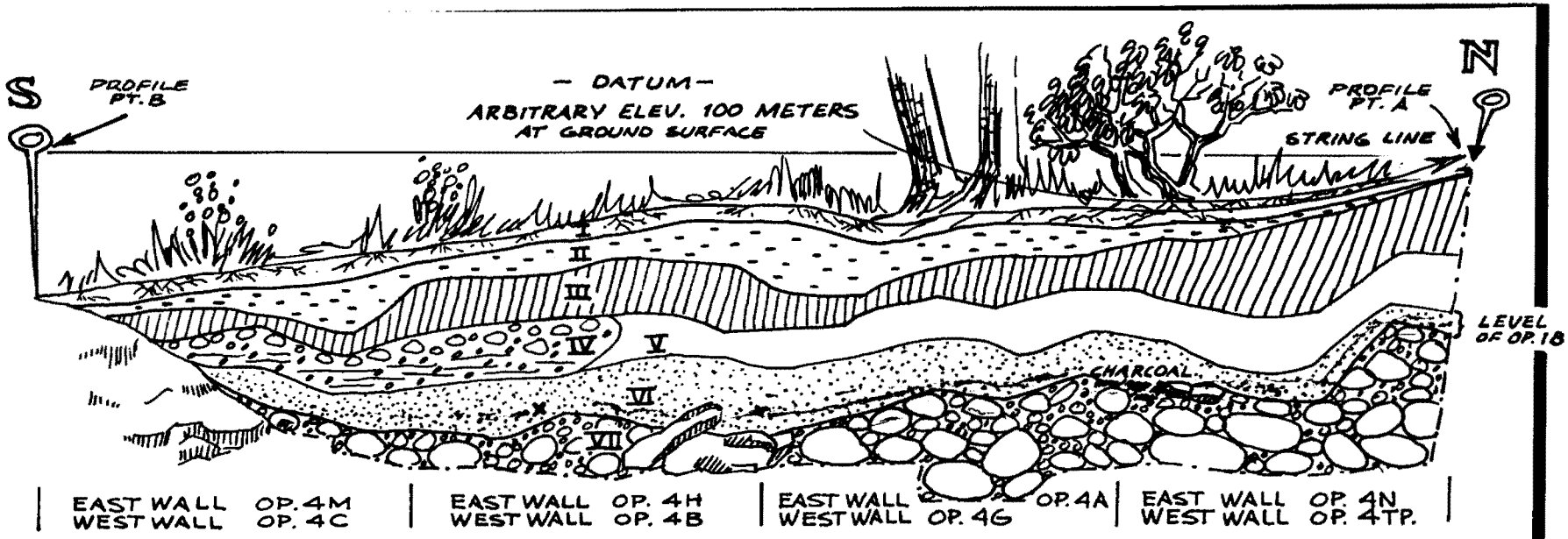


Figure 39b: View to northeast across floor of Units 4H and 4M at Component 2, 5DT271. Balk stands over floor at west edge of living surface and trowel points northward at contact between clean and culturally mixed surface. This horizontal soil break is believed to have resulted from the former presence of a wall of a brush structure. View is to northeast. Scale is in .5 meter increments. August, 1986.

> top, near the middle, and one about two feet above the ground were tied around the shelter to hold the brush and tules in place.
>
> A doorway, facing east, was left open. (Some informants said the door did not necessarily face east, but was placed on the leeward side). A door was made of tules twined with willows into a mat slightly larger than the doorway. The stems of the tules were at the bottom of the mat and they were cut even. The tops, of varying length, were left as they were. The door was tied to the poles at the left side of the doorway (facing the doorway from outside) at the top and bottom of the mat.
>
> Another informant said they picked rushes and twined them into mats, which they leaned against the brush frame of the shelter.
>
> Still another type of covering was described: Sometimes they made houses of cedars (junipers). They laid up the poles and then covered them over with cedar brush. They left an opening at the top for a smoke hole. (Smith 1974:35)

It is suggested that a large wickiup perhaps similar to those described by Smith was located in Component 2. In this regard it is important to note that use of the structural type described as "winter houses" need not be restricted only to winter use but could also be used in warmer months in the mountains. In keeping with the foregoing description, Callaway, Janetski and Stewart (1986:348) indicate all the groups of the Eastern Ute Bands made "tripod or conical houses with a three or four-pole foundation and a circular ground plan some 10-15 feet in diameter with coverings of brush or bark." Brush shelters are generally understood to have been commonly used throughout the Great Basin over a long period of time and formed an integral part of the Desert Archaic cultural assemblage. Good archaeological examples of such structures are, however, rare. They are indicated to have been used by the Fremont of eastern Utah during the Formative Stage (Marwit 1986:170). Bruce Jones (Jones 1986) recently reported on a very similar structural feature from 5GN247, an open site near Blue Mesa Lake on the Lake Fork of the Gunnison River. There he excavated a long dark lens of charcoal and homogeneous stained soil. This contained bone fragments and chipping debitage. His interpretation of this "irregularly oval and charcoal filled feature" was that it was consistent with those produced by firing of a light brush shelter or shade that had been constructed on the ground surface around a shallow natural or excavated depression. This feature measured 2 meters in diameter and like the presumed structure at Component 2, lay adjacent to several large sandstone boulders. Jones' structure contained a partially slab-lined, rock-filled hearth. The artifact assemblage evidenced a small corner-notched projectile point about 2.5 cm long. As will be discussed, this point is similar to that recovered from 5DT271. Jones believed the dark fill represented a single episode of formation. Charcoal from this fill produced a radiocarbon date (Beta 3278) of 3,698 ± 60 B.P. or 1,748 B.C. Although some 1000 years earlier than that from Component 2, the description of the structure from 5GN247 is nearly identical to that



VIEW TO WEST

I = SOD/TOPSOIL, FINE SILT W/CHARCOAL
7.5 YR 4/2 DARK BROWN
(BETA - 18088: 140 ± 50 B.P.)

II = BLOCKY SILTY TOPSOIL COLLUVIUM W/CHARCOAL THROUGHOUT
7.5 YR 4/2 DARK BROWN

III = BLOCKY SILT W/LIGHT GRAVEL AND SAND OF VARIOUS TYPES AND SIZES, GENERALLY CLEAR AND FREE OF CHARCOAL
7.5 YR 4/2 DARK BR. TO STRONG BROWN

IV = COLLUVIUM W/SUGGESTION OF BEDDING IN COARSE SANDS WITH ODD INCLUSIONS TOWARD TOP 7.5 YR 4/4 STRONG BROWN

V = LIGHTER SILTY COLLUVIUM W/GRAVEL SIZED INCLUSIONS OF SANDSTONE & BASALT AND VARIOUS SANDS
7.5 YR 4/4 STRONG BROWN

VI = SILTY COLLUVIUM W/CULTURAL STAINING, CHARCOAL, DIRTY/GREASY W/SMALL GRAVEL & SANDS. A REDEPOSITED AND CULTURALLY REWORKED TILL?
(BETA - 18089: 1,190 ± 60 B.P.)

VII = SILTY SANDY COLLUVIUM (REDEPOSITED TILL?) NOT BEDDED, W/GRAVEL TO BOULDER, SIZED INCLUSIONS OF VARIGATED COLOR & MATERIALS. APPEARS TO BE CLEAR AND FREE OF CHARCOAL EXCEPT AT CONTACT W/VI
7.5 YR 4/2 DARK BROWN

X = START OF OP. 18 FLOOR CLEARING LEVEL
—·— = EXCAVATION LIMITS

0 25 50 75 100 CM

FIGURE 40:
WEST WALL PROFILE
5DT 271, COMPONENT 2
OP. 18 IN ORIGINAL T.P. 4/5 SERIES
AUGUST 27, 1986
CRI

from 5DT271 except that the latter structure does not show evidence of burning, only of charcoal and ash mixing in the living surface. This is believed to have been due to the simple process of living and walking on the floor. Black (1983) has also reported a small wickiup-like structure from near Crested Butte and from an earlier context than that from 5DT271. The centrally placed hearth described by Smith (1974:36) for the Ute winter house is consistent with the plan evidenced in Component 2.

The firepit measured 1 x 1 meter and was centrally placed within the limits of the culturally mixed living surface. The hearth was a simple one. It was constructed with a very shallow pit (Figures 38, 39 and 43) that was excavated not more than 10 centimeters into the gravelly living surface. An oval shaped ring of cobbles and small boulders was then placed around the depression. A line of reddened fire oxidized soil was apparent under this line of cobbles (Figure 39). This, together with abundant ash, indicates substantial use of this hearth. This is further attested to in the way ash and charcoal laden soil filled and actually covered the cobble ring and had spilled over it to the south. In fact, the cobble ring was only discovered after several centimeters of ashy soil were scraped away (see Figure 43). This indicates that the central fire location continued to be used after the hearth basin had filled and eventually obliterated the ring. The fire was simply continued in the same basic location. Instead of a pit, excavations encountered a dome of ashy cultural fill extending above the general cultural level. Only a few of the bigger rocks protruded above this dome and some were removed from the ring before it was realized that they constituted part of a feature. The profile of this hearth is illustrated in Figure 43. The hearth was generally quite clean except for piles of pure ash and some charcoal. Two considerations are evident in this situation and they tend to reinforce the interpretation that a structure was present. The fact that the hearth location never shifted suggests it may have been aligned under a fixed central smokehole such as are known to have been built into wickiups. The fact that ashes do not seem to have been removed and thrown somewhere outside the hearth seems to support a view that the hearth was in a structure. In a wickiup it would seem inappropriate to throw the ashes around the interior. If the hearth were cleaned out, it would be necessary to carry the ashes outside. On an open site, it would be a simple matter to either move the fire or else clean out the hearth and throw the ashes aside. In a structure intended for prolonged residence, it seems doubtful that there would be no effort to clean the hearth and avoid a build up of ash. The mounding of ash over the formal hearth suggests it may have been used for a time, perhaps a season, and then abandoned. While certainly not resolved, this is the general impression held at this time.

The floor of the presumed wickiup was set on the very rocky surface of the heavy colluvium shown in Figures 40 and 42. As further illustrated in Figures 38 and 41, this surface is extremely rocky. It is so rocky in fact that it is somewhat difficult to envision any human willingly sleeping on it. The use of juniper bark, cattails and other plant materials as bedding would seem appropriate (Smith 1974:37) in this instance.

The structure would have incorporated some of the large boulders as a wall on the south edge. This is again consistent with the pattern observed in Western Colorado where other wickiups have been reported as built against rocks (Buckles 1971:1253 citing Huscher 1939; Jones 1986:167-170). The north-south soil profile for Component 2 (Figures 40 and 41) also reveals a gentle depression across the west edge of the living area. This is consistent with the type of proposed structure and that described by Jones (1986) at 5GN247. This depression is interpreted as having resulted from stirring of the floor through occupation rather than from intentional excavation. It is also possible that the occupation was set within a gentle natural depression which was subsequently deepened through simple use as a living surface. Culturally mixed soil was continually stirred up within this area and generally conformed to the contours of the living surface. Eventually reaching a general depth of about 10 to 15 cm and in places, as much as 25 cm.

The architecture of Component 2 minimally reflects a constrained open occupation area of about 4 meters in diameter that was centered around an oval cobble-lined hearth. This living surface was situated among large boulders adjacent to the creek. There is evidence for a wall, perhaps little more than a simple brush bower. It is, however, more probable that a wickiup stood over this entire living area with its smoke hole situated directly above the hearth. In keeping with the observations of Smith (1974:35) the door would have been on the east which is in this case, the leeward side.

In contrast to Component 1, Component 2 (Table 9 and Figure 44) did not reveal much in the way of artifacts, faunal remains or other indications of activity areas within the living area. There were pieces of burned bone and flakes of heat treated chert tool stone, flake tools and finished tools (an arrowpoint and blades or preforms) scattered on the floor of the structure. These were primarily located near the fire on the south side and probably relate to a male-oriented activity area as described by Buckles citing Lowie (1924). In regard to Ute wickiup interiors Buckles stated that women sat by the always east facing door while "her husband sat at the rear of the structure facing the door." Buckles' investigation of Ute wickiups and internal artifact distributions corresponded to Lowie's observation (Buckles 1971:644). The lithics are thought to indicate the presence of male figures in the household. A broken mano (Figure 44) was found on the northeast side of the fireplace. This is believed to be evidence for the presence of a woman in this household in keeping with Buckles (1971:644) comments. An unshaped milling stone of fractured basalt was found adjacent to the hearth on the south side. Only very limited wear on the grinding surface could be discerned on this specimen (Figure 44a). Other than the general culturally mixed layer of soil over the rocky occupation surface, few artifacts were recovered and there is a problem in stratigraphically attributing some of these to the structure, as opposed to the rubbly colluvium which covered the structure's remains. This colluvium is believed to have been derived from the earlier Component 3 which is situated on the bench above Component 2. This colluvium

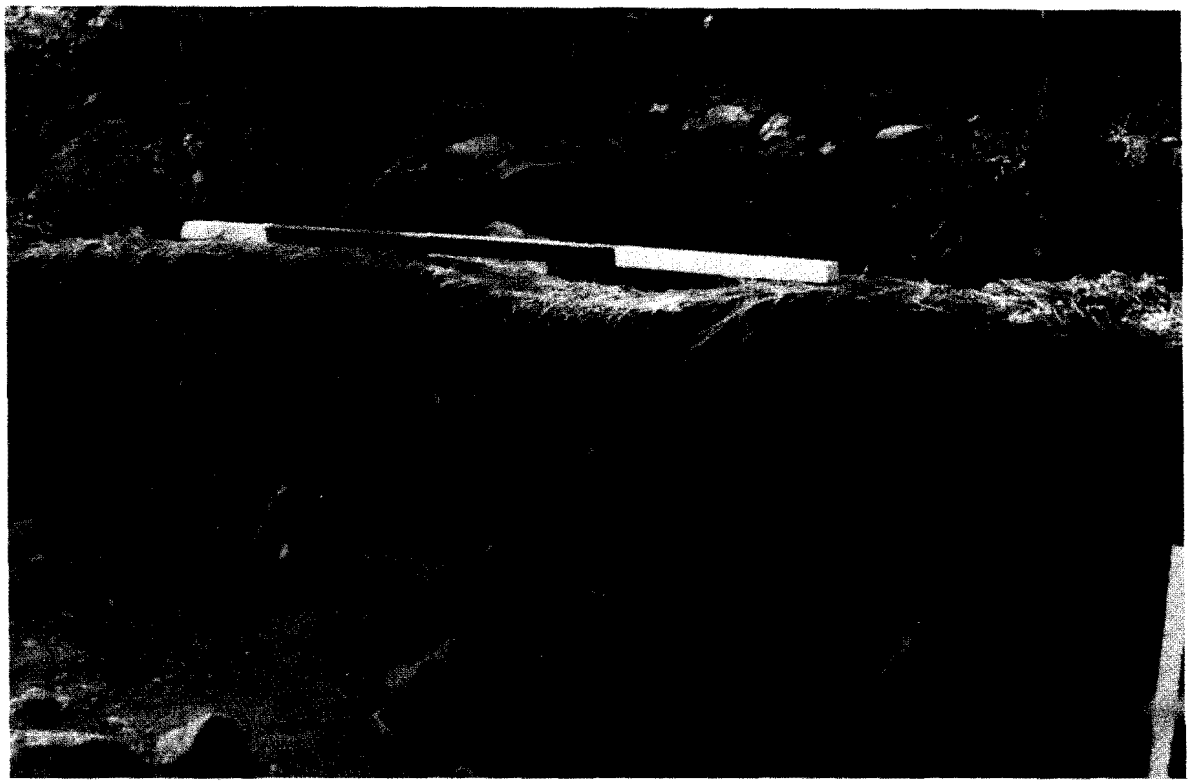


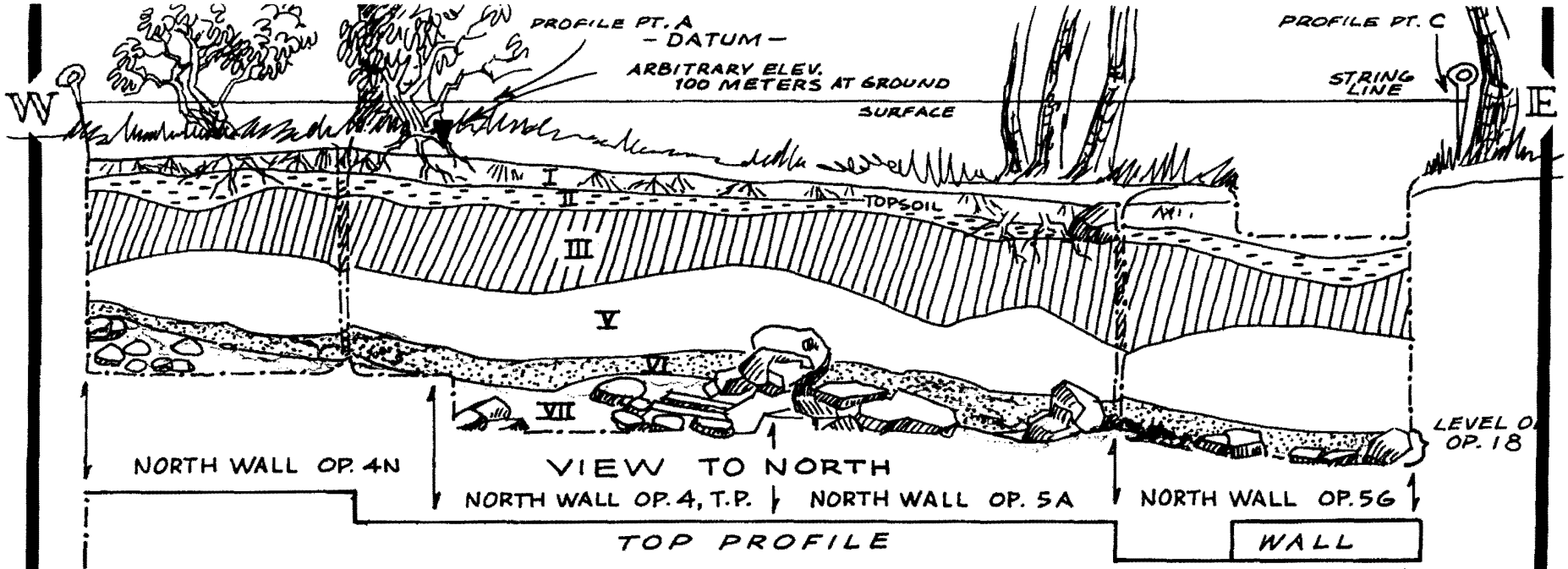
Figure 41: Photo of east wall of north-south profile across west edge of living surface of Component 2, 5DT271. View is to west. Scales are in .5 meter increments. August, 1986.

contains cultural materials as well. Considerable care will thereby be given to proveniencing materials relative to the structure.

The lack of cultural materials from inside a presumed wickiup appears to be consistent with what little comparative archaeological information exists. Buckles (1971:1258) states that midden deposits are not known to be associated with wickiups and trash, as far as he could tell, it "was limited to the fire pits and floors but in very small amounts." He also states that ashes from the fires were not dumped where they were noticeable. He attributes these considerations to short term specialized usages. The evidence from Components 1 and 2 leads this writer to concur with Buckles. Conner (1985) and Hammer (1986) have reported similar findings in regard to a paucity of cultural materials from Ute wickiup sites. Jones (1986) did not find any large quantity of cultural materials at 5GN247 either.

Material Culture

Prior to discussing the material culture of Component 2, it is necessary to discuss a problem relating to the soils in the profile over Component 2. As discussed in Chapter 3, the site soil profile appears to be derived from glacial tills that have moved downslope from ridge tops and canyon walls via mass wasting and sheet wash. As illustrated in Figures 26, 40 and 42, the profile primarily consists of substantial deposits of colluvium. This was confirmed by Mike Ness, a geotechnical engineer working on the west portal development for CWI. He confirmed the view that we were certainly dealing with a till colluvium and that mass wasting may have displaced the original valley floor of East Roatcap Creek. In examination of Test Pit 14N (Figure 26), he expressed the opinion that the basic profile was reworked till with one level of alluvially bedded sand and an in-place topsoil development. He expressed the opinion that the finer grained upper silts and clays with comparatively few inclusions were still colluvially derived (Ness 1986). Nearly all of the colluvial layers overlying Component 2 evidence some suggestions of prehistoric occupation. While the occupation surfaces of Components 1 and 2 were clearly determined and indicated in the site profile (Occupation Zones A and B, Figure 26), it is not known if the intervening soil layers, namely III, IV, V, VI and VII (Figure 26) actually evidences occupations or not. It was determined that most, but not all artifacts came from Components 1 and 2 and that most of the intervening layers had at least some charcoal present. The colluvial fill which overlies the structure floor of Component 2, however, clearly has artifacts in it. Under more typical conditions this would not pose a problem. One would simply remove the fill from the occupation surface. Due to the very heavy rubble in both the fill and the living surface, no such neat separation was possible. This becomes a serious problem due to the presence of Component 3, a presumable earlier component situated on the bench above the lower terrace. While it certainly has not been demonstrated, it appears that upper bench may be the source of the colluvial fill overlying the Component 2 living surface. The upper bench or terrace may itself be a product of mass wasting. No one has yet worked out all of these details, but it is clear that colluvial tills from somewhere covered Component 2. This



I = SOD/TOPSOIL, FINE SILT W/CHARCOAL
7.5 YR 4/2 DARK BROWN
(BETA-18088: 140 ± 50 B.P.)

II = BLOCKY SILTY TOPSOIL COLLUVIUM W/CHARCOAL THROUGHOUT
7.5 YR 4/2 DARK BROWN

III = BLOCKY SILT W/LIGHT GRAVEL AND SAND OF VARIOUS TYPES AND SIZES, GENERALLY CLEAR AND FREE OF CHARCOAL
7.5 YR 4/2 DARK BR. TO STRONG BROWN

V = LIGHTER SILTY COLLUVIUM W/GRAVEL SIZED INCLUSIONS OF SANDSTONE & BASALT AND VARIOUS SANDS
7.5 YR 4/4 STRONG BROWN

VI = SILTY COLLUVIUM W/CULTURAL STAINING, CHARCOAL, DIRTY/GREASY W/SMALL GRAVEL & SANDS. A REDEPOSITED AND CULTURALLY REWORKED TILL?
(BETA – 18089: 1,190 ± 60 B.P.)

VII = SILTY SANDY COLLUVIUM (REDEPOSITED TILL?) NOT BEDDED, W/GRAVEL TO BOULDER SIZED INCLUSIONS OF VARIGATED COLOR & MATERIALS. APPEARS TO BE CLEAR AND FREE OF CHARCOAL EXCEPT AT CONTACT W/VI
7.5 YR 4/2 DARK BROWN

—·— = EXCAVATION LIMITS

0 25 50 75 100 CM

FIGURE 42:
NORTH WALL PROFILE
5DT 271 COMPONENT 2
OP. 18 IN ORIGINAL T.P. 4/5 SERIES
AUGUST 28, 1986

CRI

colluvium also contains artifacts from either an upslope occupation or from an in situ one.

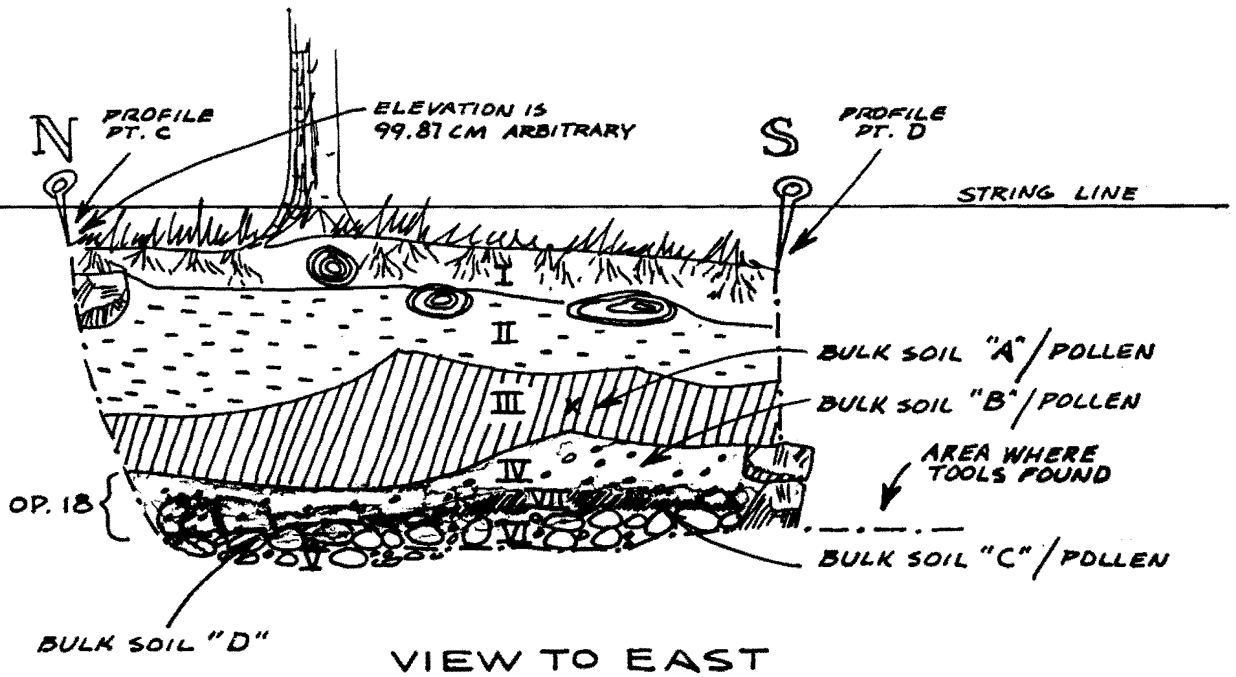
In order to compensate for this situation and protect the integrity of whatever cultural materials were actually associated with the Component 2 living surface, only the most obvious floor materials were assigned to the floor of the structure. This included only those materials which were actually observed within the ashy, culturally mixed floor or in the ash heap and hearth. The floor clearing provenience was designated Operation 18 A,B,C, etc. throughout the various actual grid units. This procedure allows for absolute associations of key artifacts with the structure. It does, however, also allow for questions about the integrity of the assemblage as a whole from Component 3. It was possible to pinpoint proveniences for key artifacts. Thus, in introducing the cultural materials from Component 2 (Table 9), only those bearing Operation Number 18 can with certainty be attributed to the floor context and confidently associated with the radiocarbon date of A.D. 760 ± 60. The remaining artifacts do come from about the same level but should be evaluated in a critical light. All materials designated Operation 18 or "occ" in Table 9 are very reliably associated with the structure. Materials from levels higher in the profile are not considered in Table 9. Most of the lithic materials from the floor also show some evidence of heat alteration. It is uncertain if this was part of the flint knapping technology or being exposed to the hearth.

The layers of heavy colluvial till at floor level and above contained profuse amounts of sandstone of all sizes, shapes and lithologies as well as minerals and all manners of other rock. Finds of fortuitous stones looking like manos, milling stones, mortars, abraders, etc. were quite common. It was often not easy to determine if these were natural or manmade because of the very soft nature of most of the sandstone in the site. Like the milling stone in Component 1, it was usually so soft that the simple act of washing a specimen in order to examine it caused the deterioration of potentially worked surfaces. Overall, we were able to satisfactorily eliminate nearly all the fortuitous sandstone items from the assemblage. No ceramics and very little bone were recovered from this component.

FLAKED STONE

Component 2 yielded a maximum of 74 pieces of flaked stone (Table 9). The assemblage was analyzed according to Kvamme's basic classification (Kvamme and Black 1986) of tool classes. Compared to Component 1, the overall assemblage was conspicuous in its comparative higher percentage of unutilized debitage (68%) and in the percentage of bifacial tools within the total tool count (24%). Utilized flake tools constituted 55% of the total tool count and 18% of the total lithic assemblage. In Component 1, the percentages were 74 and 37 respectively (Table 8). This suggests somewhat less dependence on simple flake utilization in Component 2 and perhaps a wider tool diversity index. In the lithic analysis of Component 2 materials, a conservative position was taken. Unless a flake showed obvious macroscopic deformation of an edge through use/wear, it was not considered to have been utilized even though microscopic examination will almost certainly reveal that an even

FIGURE 43



VIEW TO EAST

| EAST WALL OP. 5A
WEST WALL OP. 5G | EAST WALL OP. 5
WEST WALL OP. 5H |

I = TOPSOIL-SOD/TURF, FINE SILT W/CHARCOAL 7.5 YR 4/2 DARK BRDWN

II = DARK BROWN CLEAN SILTY TOPSOIL 7.5 YR 4/2 DARK BROWN

III = CLEAN SILT W/FEW INCLUSIONS 7.5 YR 5/2 BROWN

IV = DIRTY/SILTY OCCUPATIONAL LEVEL W/CULTURAL STAINING & CHARCOAL SILTY/ COLLUVIUM

V = UNSORTED COLLUVIAL GRAVELS/REDEPOSITED TILL? 7.5 YR 4/2 DK. BROWN

VI = HEARTH/FIREPIT W/ASH & GRAVEL FILL

VII FINE ASHY SILT AT TOP OF FIREPIT

= ROOTS

—·— = EXCAVATION LIMITS

0 25 50 75 100 CM

FIGURE 43:
EAST WALL PROFILE
5DT271
TP5, 5A AND OP. 18
OCCUPATIONAL LEVEL
W/HEARTH

AUGUST 22, 1986

CRI

TABLE 9: Flaked Lithic Tools Excavated From Component 2, 5DT271
(Keys to Figure 44)

	Category	Figure No.	Provenience	Material	Shaped Tool	Edge Wear	Edge Angle	Worked Edge	Original Tool Class
1	Biface C	44A	4Hocc	GRCT	Yes	Yes	O	Yes	Scraper
2	Biface F	44B	4B2	WCH	Yes	Yes	A	Yes	Drill/Knife
3	Biface C	44C	4H3	WQT	Yes	No	A	Yes	Ovoid Preform or Knife?
4	Biface C	44D	18C2	GCT/ha	Yes	No	A	Yes	Ovoid Preform or Knife
5	Biface C	44E	18C2	GCT/ha	Yes	No?	A	Yes	Projectile Point
6	Biface F	44F	4/4A2	BCH	Yes	Yes	A/O	Yes	Ovoid Knife
7	Uniface C	44G	5C2	GCT/ha	Yes	Yes	O	Yes	Scraper/ Spokeshave
8	Uniface C	44H	18C2	GCT/ha	Yes	Yes	O/C	Yes	Flake Scraper/ Knife
9	Uniface C	44I	5C4	GCT/ha	No	Yes	O	No	Flake Scraper
10	Uniface C		18/2	GCT/ha	No	Yes	A	No	Flake Knife
11	Uniface F		5G/H2	GCT/ha	Yes	No	A	Yes	Rejected Ovoid Preform?
12	Uniface C		4K	BCH	No	Yes	O	No	Flake Scraper
13	Uniface F		459	GCT	No	Yes	A	No	Flake Knife

TABLE 9 (Cont'd): Flaked Lithic Tools Excavated From Component 2, 5DT271
(Keys to Figure 44)

	Category	Figure No.	Provenience	Material	Shaped Tool	Edge Wear	Edge Angle	Worked Edge	Original Tool Class
14	Uniface		4QS	BCH	No	Yes	O	No	Flake Scraper
15	Uniface		18/2	BCH	No	Yes	A	No	Flake Knife
16	Uniface	44J	4/4A2	RCH	Yes	Yes	A/o	Yes	Flake Scraper/ Knife/Resharpen Flake
17	Uniface C	44K	5A/6H occ.	YCT	No	Yes	O	No	Flake Spokeshave
18	Uniface C		18C2	RCH/ha	No	Yes	O	No	Flake Scraper
19	Uniface C	44L	18B1	WCH	Yes	Yes	O	Yes	Flake Scraper
20	Uniface C		18/2	WCH	No	Yes?	A	No	Flake Knife
21	Uniface C		4J1	WCH	No	Yes?	A	No	Flake Knife
22	Uniface C		4A6	WCH/ha	No	Yes?	A	No	Flake Knife
23	Uniface	44N	5D5	BGH	Yes	Yes	O	Yes	Flake Scraper
24	Uniface		5F3	GCT	No	Yes	A/O	No	Flake Scraper/ Knife
25	Uniface	44M	5A/G occ.	BST	No	Yes	A	No	Flake Knife

TABLE 9 (Cont'd): Flaked Lithic Tools Excavated From Component 2, 5DT271
(Keys to Figure 44)

Minimum tool count = 25
Total artifacts (including all debitage) - 74

Bifaces		Utilized Flake Tools		Unifacial Tools	
	projectile points = 1		knives = 7		Scraper/knife = 2
	scrapers = 1		scrapers = 4		Scraper = 2
	drill = 1		scraper/knives = 1		Rejected preform = 1
	preforms = 2		spokeshave = 1		Scraper/
	knives - 1		13		spokeshave = 1
	6				6

32% = minimum tools in assemblage (may be higher)
68% = maximum unutilized debitage in assemblage (may be lower)
55% = utilized flake tools in total tool assemblage (may be higher)
18% = utilized flake tools in total assemblage (may be higher)

Lithic Material Key:

	tools	unutilized (?) debitage	totals
GQ = gray quartzite	0	1	1
O = obsidian	0	0	0
YCT = yellow chert	1	0	1
BST = basalt	1	38	39
WCT = white chert	0	0	0
GCT = gray chert	9	9	18
BCT = black chert	0	0	0
WCH = white chalcedony	5	1	6
BCH = brown chalcedony	5	0	5
RCH = Red chalcedony	2	0	2
GRCT = green chert	1	0	1
WQT = white quartzite	1	0	1
HA = heat altered			
	25	49	74

Category/Condition

F = fragment
C = Complete

Edge Angle

A = Acute
O = Obtuse

8% = bifaces to total assemblage
24% = bifaces to total tool assemblage
8% = unifaces to total assemblage
24% = unifaces to total tool assemblage

Provenience
Designation "18" or "occ" are clearly from the floor of structure in Component No. 2.

larger percentage of flakes were utilized. Of the 49 flakes designated as unutilized, only four types of tool stone were recognized (Table 9) in Component 2. These were primarily basalt and a gray chert which may have been heat-treated as part of the flaking technology. A considerably higher number of tool stone types is represented in the tools. This suggests that only a limited amount of tool production occurred within the Component 2 structure. Soil samples and fine mesh screening revealed a few microflakes of grey chert from around and within the hearth fill. This chert is the same material represented in the one projectile point (Figure 44) recovered and in two of three small ovoid preforms or blades. The evidence suggests the production of gray chert preforms and projectile points within the structure. The only other suggestion of lithic manufacture appears in the presence of flakes of basalt. No microflakes of basalt were found. All the flakes are comparatively large and this particular material does not appear suitable for production of small delicate tools such as the projectile point or preforms. The evidence of lithic manufacture suggests the presence of a male work area on the southward side of the hearth in a position similar to that suggested within Ute wickiups by Buckles (1971:644). The only diagnostic potential within the assemblage is offered by the small corner-notched projectile point and possibly its association with small ovoid preforms. These are also the items within the assemblage which can most reliably be associated with the radiocarbon date and occupation of the structure (Figures 39 and 44).

-Bifacial Tools

Within the flaked lithic assemblage generally ascribed to the Component 2 occupation, six bifacial tools are represented (Table 9). Of this number, two are clearly from the floor of the structure as shown in Figure 39D,E.

Projectile Point (Figure 39E). Small, ovoid, deeply corner-notched projectile point with suggestion of expanding item and convex base. Specimen evidences an ovoid as opposed to a triangular outline. Specimen is complete and presents a distinctive protruding tip which suggests use as a drill and/or possible resharpening. A slight hint of crushing on the tip may have resulted from such use. Found amid ashes on the floor of presumed brush structure next to hearth.

Material: gray chert, perhaps heat treated.
Size: length 2.10 cm; width 1.35 cm; length of stem .6 cm; maximum width of stem .6 cm; maximum depth of corner notch .3 cm; thickness .35 cm
Type Designation: Small corner-notched points are fairly common and occur late in time over a wide geographic area. The tendency to an oval outline with deep corner notching and a well executed manufacturing implies a certain distinctiveness which may be culturally important. Similar distinctive points among the general small corner-notched categorization are obvious in the regional literature. Comparatively distinctive small corner-notched points have been reported by: Holmer and Weder (1980) under name Rose Spring Corner Notched as

combined with the Eastgate series and renamed "Rosegate" in 1986 (Holmer 1986:106-107) ca. A.D. 300 - A.D. 1300. Wormington (1955:51-52) refers to these points as Type C from the Turner Ranch. Buckles (1971:119) designates similar points from Delta County as Type 4 within the Uncompahgre Complex. Huscher and Huscher identify similar points with stone structures of Western Colorado (Huscher and Huscher 1943:32-33).

Cultural Affiliations: Rosegate Series is common throughout Fremont space and time in Great Basin and surrounding region and is believed to be associated with the diffusion of the bow and arrow (Holmer and Weder 1980). (Holmer 1986:106-107) (also See Webster 1980). Frison (1978:246) suggests a strong possibility of Shoshonean association for this point style in southern Wyoming.

Time Frame: Late prehistoric, ca. A.D. 300-1300 (Holmer 1986:106-107).

Distribution: Throughout Intermountain West (Holmer 1986:106-107) at least.

Comment: This point is believed to have been made at 5DT271 using technology which involved the use of heat treated ovoid blanks or preforms. Buckles (1971:119) notes the role of ovoid blanks in production of this generalized point style. Huscher and Huscher (1943:32-33) also specifically mention the use of blanks in production of this seemingly distinctive style. This point style may have a Numic and/or Fremont association in some areas.

The one small projectile point from Component 2 does not provide a basis for attributing the occupation to a specific linguistic or ethnic group or even a specific archaeological culture. If, however, it had been associated with Shoshonean ceramics one could make a strong case for such an identity. This particular point style is distinctive even if it is not diagnostic. It is clearly relatively late in time, well within the local Formative Stage (Reed 1984). It is felt that this particular point style is quite distinctive and easily identified within a more generalized small corner-notched category as it appears spatially. As an example, such points seem quite visible in the Fremont associated Turner Ranch assemblage from Utah (Wormington 1955:51-52) in the Huschers (1943:132-140) possible Fremont related stone structural complex from Western Colorado, Buckles' Type 4 point style from the local Delta and Montrose County areas of Western Colorado (1971:119). They appear closer to the Anasazi core area as well (Hogan 1986). An excellent example comes from a Basketmaker pit house at the Tamarron Site at Durango (Reed and Kainer 1978:23-24) where it was identified as a Type 2 drill due to evidence of wear on the tip, just as is suggested for the specimen from 5DT271. The Tamarron Site Specimen is a very close parallel that goes beyond simply being another small corner-notched point. If morphological pattern means anything in projectile point studies, it is certainly consistent in this instance. Northward toward Wyoming, Frison (1978:246) refers to the distinctiveness of such points at the Willow Springs Buffalo Jump and Benedict (1975, 1975a) has identified the same distinctive points from specialized hunting components on the Colorado Front Range where they sometimes evidence

serrated edges. Holmer (1986:106-107) has formally identified the Rosegate Floriut which is thought to have accompanied the introduction of the bow and arrow in the Intermountain West about A.D. 300. The Rosegate series appears to be the closest type name applicable to this point style. The Rosegate Series is replaced at different times in the Intermountain West by small side-notched points. In the Fremont area of the eastern Great Basin, replacement with other point styles is suggested to have occurred by A.D. 900-1000 (Holmer and Weder 1980:60). Irwin-Williams (1973) briefly discusses small corner-notched points from the late En Medio and Trujillo Phases of the Oshara Tradition. Detailed descriptions of these specimens are lacking, however, and a close comparison cannot be made. Gooding and Sheilds (1985:107) discuss Rose Springs (now called Rosegate) points from Sisyphus Shelter on the Colorado River and relate them to the Fremont. Finally, Hurst's early publications (1946, 1948) suggest that such points may be present in the Cottonwood and Tabeguache Pueblos of western Montrose County, Colorado. In summary, it is pretty certain that the point from Component 2 at 5DT271 is a representative artifact of the Formative Stage in West-Central Colorado. There are, furthermore, reasons to suggest that this particular point style may be a distinctive hallmark within the material culture assemblage of the regional Formative Stage as it may have involved association with either the Fremont or Anasazi, or even an in situ development from an Archaic technocomplex (Reed 1984). In dealing with ephemeral Formative Stage sites in Western Colorado, we are not likely to enjoy the luxury of finding pottery in any quantity. It may be suggested that more critical attention to distinctive aspects of the lithic assemblage will be necessary. A better understanding of the temporal and spatial distribution of small, ovoid, corner-notched points may be a good place to start.

The only other bifacial tool that was clearly from a floor context at Component 2 was a small heat treated gray chert blank or preform (Table 9, Item 4; Figure 44D). It is clear from the lithic debitage, including microflakes, that a gray chert was being flaked inside the structure. It is not certain that intentional heat treatment was being applied to the gray chert since all the materials were found within the ash level about the hearth and may have been accidentally heated. There was no evidence for primary lithic reduction. The debitage suggests that previously obtained flakes were brought into the house and near the fire were formed into finished tools or preforms, or simply utilized in other ways.

Two other small blades or preforms were recovered from Component 2. One, Specimen 3 (Table 9) (Figure 44C) was of white quartzite and is consistent in size and has the marginal retouch evident on the previously discussed floor specimen. Specimen 3 cannot, however, unquestionably be related to the floor context. One other small ovoid preform was recovered from Component 2. This is Specimen 11 (Table 9) which is believed to be a rejected preform. It is only partially complete and is made of gray chert that evidences heat alteration. It is worked on only one surface and was apparently discarded before it was complete. The three small blanks all measure 2 cm or less and seem consistent with the size of the projectile point found on the floor as well as noted in the previously discussed comparative literature.

Other bifaces in the assemblage include a small domed or turtle-backed scraper (Buckles 1971) of green chert (Table 9, Specimen 1 and Figure 44A), the ovoid base of a drill which was flaked for use as a knife (Table 9, Specimen 2 and Figure 44B), and a fragment of an ovoid knife made of brown chalcedony (Table 9, Specimen 6 and Figure 44F). All of the bifacial tools show some trace of edge wear except for the blanks/preforms and the projectile point which may have been lightly used as a drill.

-Unifacial Tools

As summarized in Table 9, the Component 2 assemblage contained six unifacially formed tools. These included Specimens 7, 8, 11, 16, 17 and 18. With the exception of the rejected preform previously discussed, these were all restricted to simple retouch of a flake to produce obtuse angles for scraping purposes. Two of these also evidence an acute angle suitable for use as a knife with the steeper angle for scraping. Figure 44H illustrates one such combination tool (Table 9, Specimen 8). Figure 44G is a combination scraper/spokeshave (Specimen 7, Table 9). Other unifacially flaked scraping tools from Table 9 are shown in Figure 44I,J,K,L and N.

-Utilized Flakes

The Component 2 assemblage (Table 9) contains 13 utilized flake tools and constitutes 55% of the total tool assemblage and 18% of the total flaked stone assemblage. This assemblage includes seven flakes used as knives, four as scrapers, one combination scraper/knife and one spokeshave. The assemblage appears to include a higher number of scraping tools then does that from Component 1. The flake knives consist of a variety of flakes with acute edge angles showing some evidence of use/wear. Within this group, one triangular flake of basalt is believed to fall into the triangular meat knife class presented for Component 1 (Table 9, Specimen 25). This specimen shows evidence of dulling and smoothing along two edges as described by Frison (1979:259-268). Bradley (1987) reports that a flake of basalt provides one of the best flake tools available for butchering purposes.

GROUND AND PECKED STONE

Only four pieces of ground or pecked stone were recovered from Component 2. This included a small fragment of a mano (Figure 44,O) formed from a metamorphic cobble. The shape of the fragment suggests the tool was originally ovoid in shape and was similar to that recorded in Component 1 (Figure 33D). There was some limited indication of battering on one end. A milling stone, a flake chopper and a cobble hammerstone were also present and are described as follows:

Millingstone (Figure 44A) complete

Material: basalt
Shape: natural block with slightly smoothed irregular surface within a natural concavity in the surface.

FIGURE 44

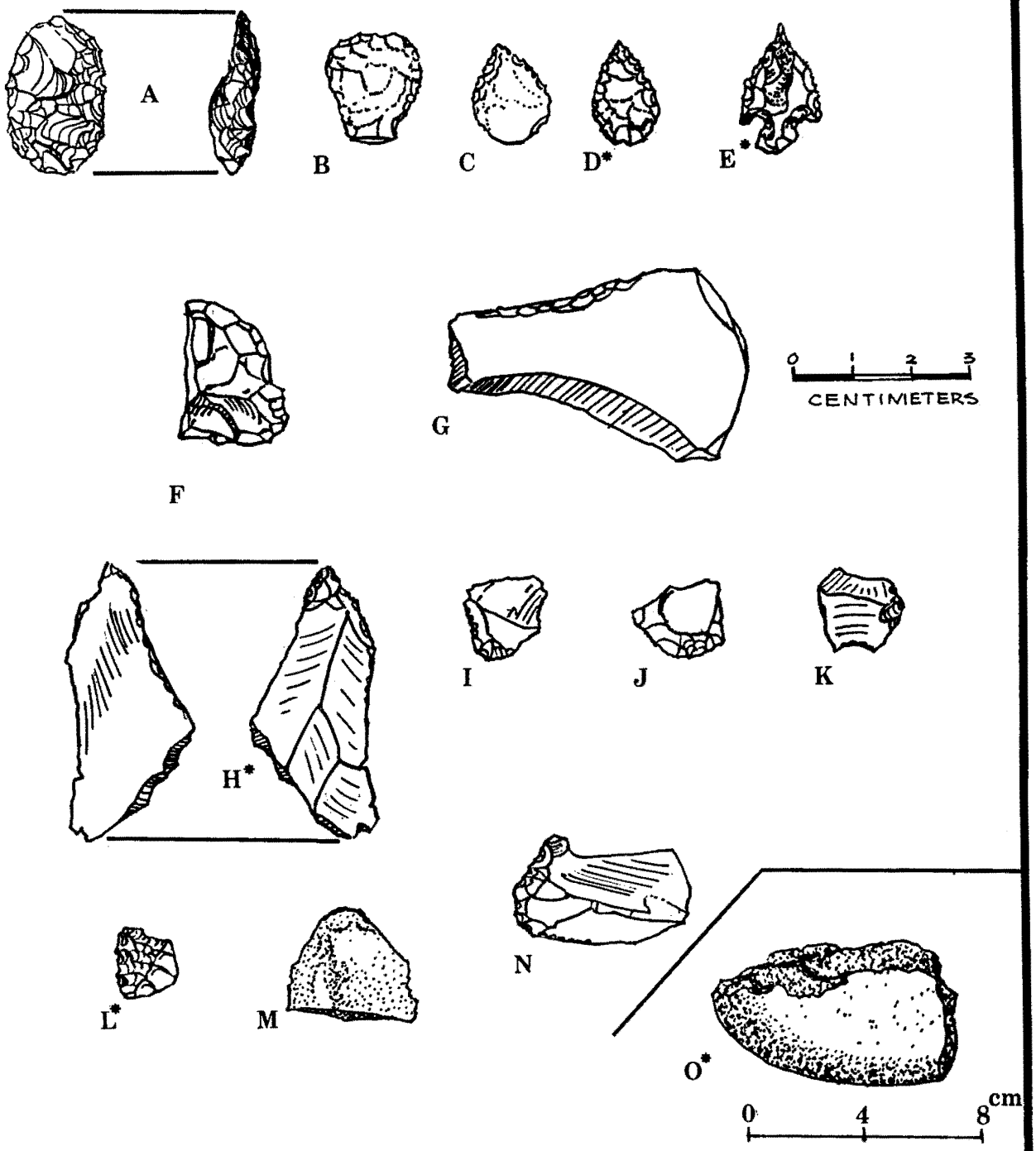


Figure 44: Lithics from Component 2, 5 DT 271. A= Scraper; B= basal fragment of drill/knife; C&D= Ovoid blanks or knives; E= Corner notched arrowpoint; F= Fragment of ovoid knife; G= Scraper/spokeshave; H= Flake scraper/knife; I= Flake Scraper; J= Scraper/knife on resharpening flake; K= Flake spokeshave; L= Scraper on resharpening flake; M=Flake knife; N= Flake scraper; O= Mano fragment.
*= indicates from floor of brush structure.

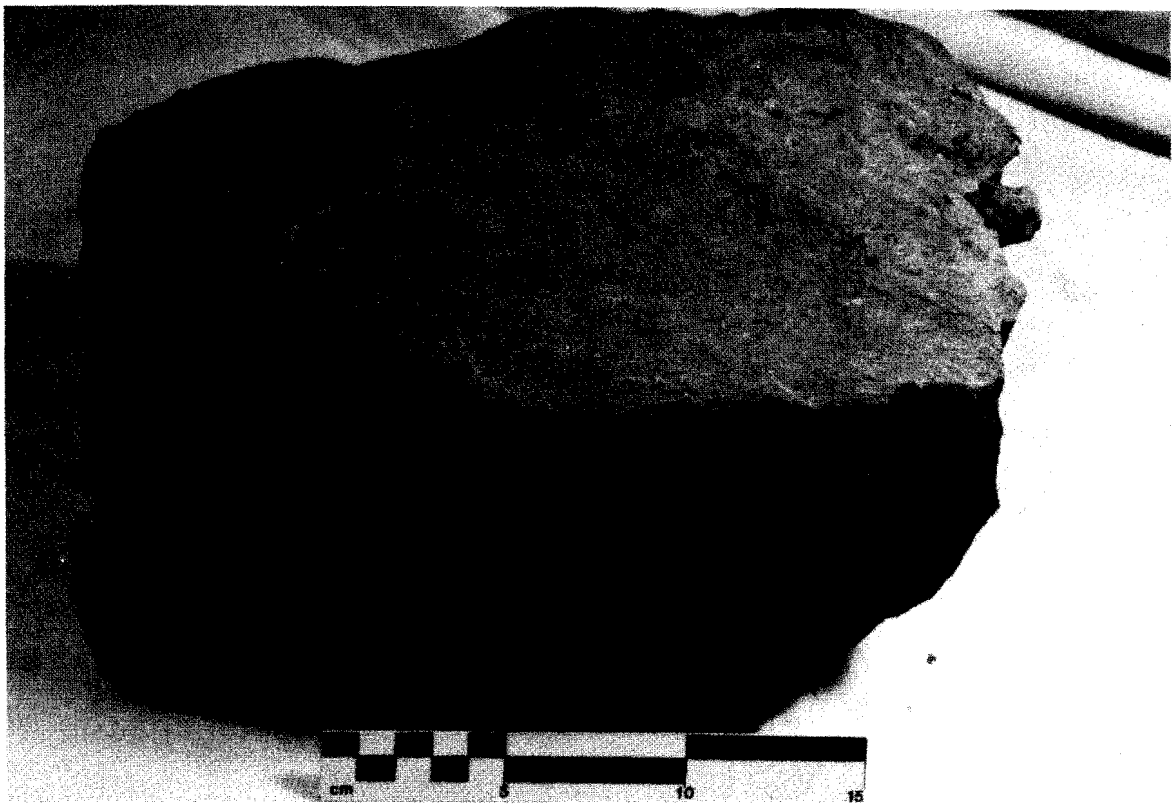


Figure 44a: Grinding surface on basalt millingstone found next to hearth in Component 2, 5DT271.

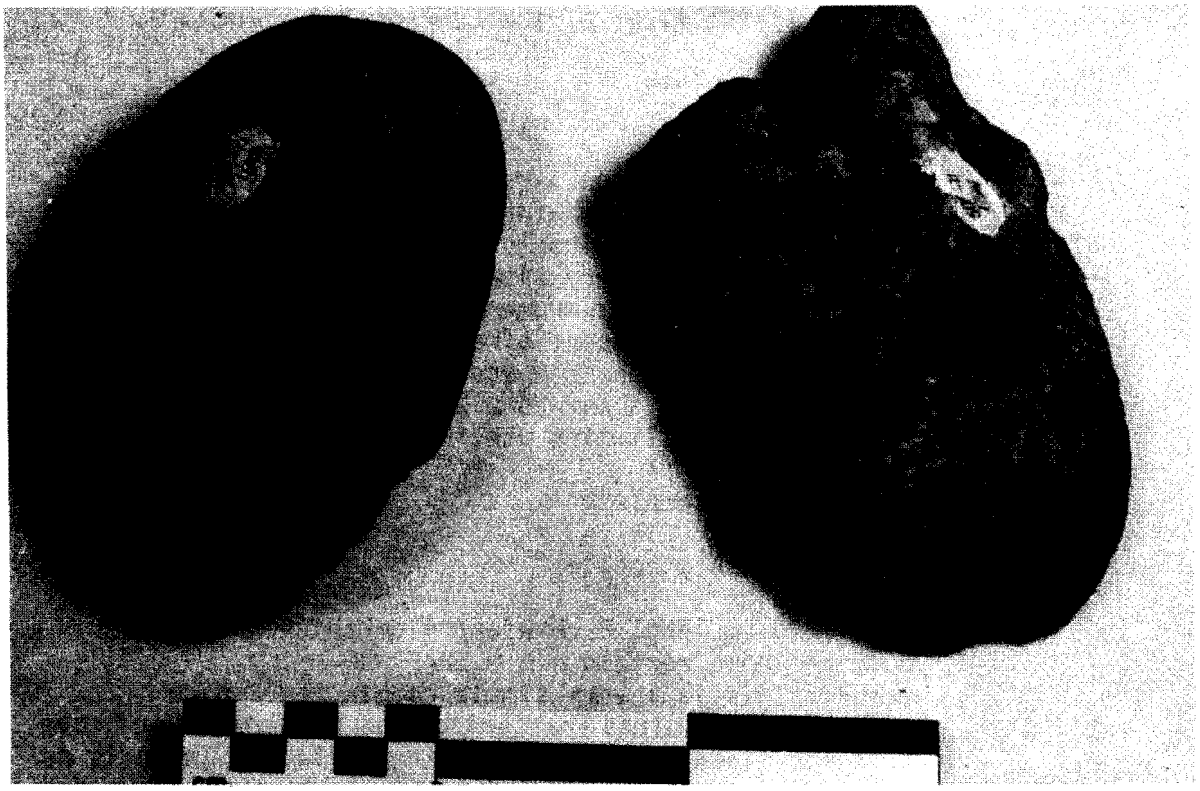


Figure 44b: Object A is a fortuitous basalt flake chopper with battering scars and edge grinding. Object B is a simple cobble hammerstone with very minimal battering and no edge grinding. These objects are interpreted as very simple "probable" ephemeral tools.

Size: 28 cm long; 22 cm wide overall
Size of milling surface: 10 cm by 15 cm
Typology and Distribution: none known
Comments: This stone is quite hard and shows only minimal wear of grinding surface which was not obvious without close examination. This artifact was found adjacent to the hearth and is clearly from the living floor of the Component 2 structure.

Chopper (Figure 44B) complete

Material: basalt
Shape: roughly oval on large natural flake of basalt
Size: 15 cm long; 9 cm wide; 3 cm thick
Typology and Distribution: none certain
Comment: This is a very simple fortuitous flake tool which exhibits numerous battering scars and edge grinding reminiscent of edge ground cobbles. It was found near the hearth and is clearly from the living floor of the Component 2 structure. Implications are for very limited use.

Hammerstone (Figure 44B) complete

Material: basalt cobble
Shape: ovoid
Size: 13.5 cm long; 8 cm wide/ 4 cm thick
Typology: none certain
Comment: This is a very simple cobble tool which exhibits limited battering and detachment of one large flake from the battering surface. There is no evidence of edge grinding. Implications are for very limited use.

Interpretive Summary

It is very difficult to interpret this structure in terms of cultural affiliation within the Formative Stage. It may, however, be suggested that it is part of at least a regional pattern somewhere between the Anasazi and Fremont and may relate to a Formative culture which developed *in situ* in Western Colorado from an Archaic technocomplex (Reed 1984:39-40). The author tends to concur with Reed in his suggestion that hunting and gathering techniques may have been able to meet most of the economic needs of a hunting and gathering people when other groups further south, where there is certainly a longer growing season, had begun to rely more heavily on horticulture. A key concern within this general scenario is that even within a trend where groups began to focus about more permanent settlements during Basket Maker and early Anasazi times, seasonal exploitation of the mountain environments may have remained relatively constant for a long period of time. Changes toward more sedentary village life during part of the year will probably not be discernible in ephemeral sites from such environments. In this regard, Woodbury and Zubrow point out that "high mountain slopes may have been generally shared for game hunting,

whereas a choice locality closer to home was the presence of a single village" (Woodbury and Zubrow 1979:59). These authors point out that the period from about 500 B.C. to A.D. 500 was a time of development with basic changes involving a shift in emphasis from seasonal to more permanent occupations of settlements (59). They reference Talus Village near Durango during Basket Maker II times and suggest that long summer hunting and collecting trips were probably carried out by at least some of the group (1979:58). Cordell points out that horticultural dependence in BMII times may still have been minimal and that hunting and gathering must have remained critical throughout much of the year (Cordell 1979:148). Irwin-Williams' Oshara Tradition (1973) appears to be relative to our West-Central Colorado case in that she points out that a "fully seasonal annual economic and probable socio-economic cycle" emerged in the period B.C. 800 to 600 A.D. during the En Medio and Trujillo phases of the Oshara. She attributes these changes to a "structured broadening of the resource base in response to increased population pressure." She also attributes the semisedentary, agriculturally dependent pattern of the Sky Village and Loma Alto Phases, A.D. 600 - 850 to continuing population growth and environmental crises (1973).

If the general pattern of development outlined in the Oshara Tradition is even close to describing the local situation, where are the semisedentary sites of the local Formative Stage? We are clearly dealing with a specialized seasonal occupation in the Component 2 structure, but no one has yet demonstrated local evidence of more permanent Formative Stage settlement. It is difficult to imagine that no one has yet located such sites from this time period. Science often has a tendency to overlook the obvious contributions of its pioneer practitioners. Such may be the case for West-Central Colorado. The Huschers' (1939 and 1943), Wormington (1955), and C.T. Hurst (1940 and 1948) investigated sites which are the most likely candidates, and the most frequently overlooked ones, for this distinction. Until someone undertakes a thorough reappraisal of the village sites of the region, no meaningful consideration of the Formative Stage in West-Central Colorado will be forthcoming and regional archaeological studies will remain in the unsettled state so well described by Reed (1984).

Cathy Crane (1978) has been one of the few to attempt such a reinvestigation and her work suggests the presence of a regional pattern more dependent on hunting and gathering than for the Anasazi and Fremont areas. In her estimation, there was strong implications for San Rafael Fremont influences in the regional Formative Stage, particularly for the Weimer Ranch people. In her opinion:

> More important than the assigning of cultural labels is the realization that in Western Colorado - Eastern Utah area, there was a continuity of the basic cultural pattern from the Archaic period through the Pueblo II period. This continuity is demonstrated by the same basic systems of social organization, subsistence, and subsistence related technology.
>
> (Crane 1978:9)

Figure 44c: Northern Ute winter (?) brush shelter at Whiterock, Utah. Photo by Edward Sapir, 1909 as reproduced in Smith (1974:Plate 19). It is suggested that a similar type of shelter may have existed at Component 2, 5DT271.

In contrast to the Component 1 feature area which was apparently an activity area from outside a brush structure, the Component 2 feature area certainly revealed the interior of such a structure roughly 1,000 years earlier. Linda Scott's palynological analysis of samples from the floor of the Component 2 structure (Scott 1987) and the outdoor activity area in Component 1, indicates the environment was similar to that of today. Both of the occupations appear to have been set amid the oakbrush vegetation type community. The limited pollen evidence relative to subsistence at Component 2 suggests that "a member of the High-spine Compositae group, such as sunflower, may have been exploited. Alternatively, members of this heliotropic family may have been more common in the environment" (Scott 1987, see Appendix II). Matthews identified charred grass and Chenopodium seeds (goosefoot) from the hearth fill and surrounding floor area. Rood's faunal analysis also produced only limited data on subsistence at Component 2. The occupation surface did produce evidence of mule deer as well as deer-sheep-pronghorn sized elements. Cottontail rabbit, mouse and other unidentifiable mammal bones were also present. There were also a small number of tiny burned bone fragments present on the living surface. Beyond indicating that both hunting and gathering activities involving deer, sunflower and goosefoot focused about Component 2, little more can be stated regarding subsistence activities other than that they appear to have been diverse.

In summary, Component 2 at 5DT271 is dated at about 760 A.D., or perhaps somewhat later, and is interpreted as the remains of a local Formative Stage wickiup style structure, perhaps similar to that illustrated in Figure 44c. It is believed to represent a seasonal residential base probably set within the late summer and fall as ethnographically considered from the later Ute occupation of Component 1 (See Chapter 4). There is little indication that the structure was occupied repeatedly. Activities undertaken within the Component 2 structure appear to have included the final stages of stone implement manufacture as well as food preparation. In this regard, evidence of both male and female activities are suggested within the structure. Activity areas exterior to the structure were not examined but Component 3 (See Chapter 6) sheds some light on the subject. The structure was most likely a part of a kinship based seasonal settlement system as documented for most Great Basin peoples. Woodbury and Zubrow have outlined three basic propositions on which such hunting and gathering economic systems were based. These included: 1) production of food was based on a sexual division of labor where men hunted and women gathered; 2) consumption of food was almost immediate and the consumers were small kin groups; and 3) redistribution of food was based upon kin ties within a group and was closely related to demand (Woodbury and Zubrow 1979:43).

CHAPTER 6

COMPONENT 3 AT 5DT271
THE ROATCAP GAME TRAIL SITE

Excavation Summary

Component 3 includes cultural materials from the area of the site where erosion made it first visible to the inventory team in 1978 (Hibbets et. al. 1979). This component is spatially restricted to the upper bench along the jeep road (Figures 15, 17, 19, 20, 21 and 45). In order to establish a grid and attempt a random sample test program it was necessary to clear the oak and serviceberry from the terrace. A substantial hand brush clearing operation was conducted during the first week of field work. Stratigraphic tests were conducted at Test Pits 1, 2, 3, 4, 5 and 6 while basic reference lines at 5 meter intervals were being established parallel to the baseline (Figures 17 and 45). A sample of 1 x 1 meter test units was then drawn from a table of random numbers at a three percent level. This level of testing was planned on the instructions of CWI with the concurrence of BLM. It was agreed that up to five percent might need to be excavated if the three percent sample failed to give clear information on Register eligibility and mitigation planning data. Specifically, if the three percent sample indicated the site was insignificant and not Register eligible, then two more percent would be excavated in order to further test that impression. If the site did, however, prove to be eligible at or before the three percent level was reached, excavations could be terminated short of the three percent level. A random sample test program was initiated. It was curtailed early in the field work and replaced by a program of intensive examination of feature areas. This was done because it very early became evident that cultural materials were quite restricted on the upper bench and focused about one and possibly two potential feature areas. The original inventory team and CRI's team both incorrectly assumed that this portion of the site was bigger than it was. A series of random as well as discretionary test units east of the road (Figure 45) were negative and confirmed that the site was confined to the area immediately west of the road almost on the game trail which existed before the road. Likewise, a series of tests to the west and north of the road indicated the focus of the site was adjacent to the road and south of the site datum (Figure 45).

This area was first explored via discretionary Test Pit 2 which produced a quartzite side-notched projectile point and a flake of basalt from a level 20 cm below the ground surface which had been stripped of duff and sod (Figures 45, 46 and 54). The soil profile of Test Pit 2 (Figure 46) consisted of a convoluted layer of yellowish brown silty clay with many inclusions. This was both overlain and underlain by a greyish brown silty loam which appeared to be the same basic soil as the sod and topsoil of the site. Some localized disturbances of the natural profile on the terrace was anticipated in conjunction with construction of the jeep road. Surface evidence of such disturbances was evident on the nearby ground surface where it appeared that dirt and boulders had been pushed out into the oak brush. The profile seen in Test Pit 2, however, was ultimately interpreted as a rodent-disturbed version of the

basic natural profile of the site as illustrated in Test Pit 6 (Figure 46). Soil disturbance resulting from road construction was ultimately found in excavation units of Operation 2, a few meters east of Test Pit 2. There (Figure 51), the soil profile showed a buried turf line where topsoil from the road was pushed over the existing ground surface at the west side of the road.

As illustrated in Test Pit 6 (Figure 46), the basic profile of this portion of the site consisted of approximately 20 to 25 cm of a dark greyish brown silty loam (10yr4/2) topsoil and sod cover over a thick layer of till colluvium which is best described as a yellowish brown silty clay (10yr5/4). This silty clay shows a variety of unsorted inclusions ranging in size from gravels to cobbles and boulders. The surface of this layer ultimately proved to be the occupation surface for Component 3. The layer was about 50 to 75 cm thick and was underlain by a more homogeneous layer of reddish yellow clayey silt (7.5yr6/6) which lacked cultural materials and the variety of inclusions of the upper level. This basic profile appeared consistently throughout the component. It only varied in the amount of topsoil over it. On the slope east of the road the topsoil was thinner but the profile remained the same. All cultural materials were ultimately found on top of or just above this level near the interface between the topsoil and level IV. Sod and upper topsoil were generally clear of cultural materials.

Test Pit 2 was ultimately expanded to the east and south by a series of 1 x 1 meter squares (Figure 47). This area was designated as Operation 2 and individual units were given suboperation alphabetical designations (Figure 51). Individual proveniences within each sub-operation were assigned separate lot numbers. The duff and sod were removed by raking the surface and then cutting out and breaking up the sod in screens. Once a clean surface of topsoil had been prepared, excavation proceeded by arbitrary 10 cm levels until the original occupation surface was encountered. The interface of the topsoil and occupation surface was then excavated by shovel skimming as a separate provenience. All soil was screened through one quarter inch hardware cloth.

Early in the expansion of Operation 2 (Figures 47, 49 and 51), a milling stone was found situated on the interface of the topsoil and the colluvial substratum in Unit 2C. A few additional stone tools and another milling stone in 2K were also found. These included a bifacial obsidian cutting tool (Figure 54) and the base of a corner-notched blade or projectile point. This excavation area (Figure 48) eventually opened an area of 18 square meters (Figure 49).

While expansion work was underway in Operation 2, random sample unit 169 was excavated four meters to the south (Figure 45). This 1 x 1 meter unit revealed a cluster of fire-cracked rock and charcoal just below the ground surface. This unit was expanded and revealed a small fire basin (Figures 52 and 53) which had been dug into the colluvial substratum on which the milling stones in Operation 2 were found (Figures 51 and 52). A small flake of obsidian was found in association with this feature. This hinted that the feature areas were culturally associated since obsidian was not found anywhere else in the component. The resulting map (Figure 49) showed a simple living surface marked by

FIGURE 45

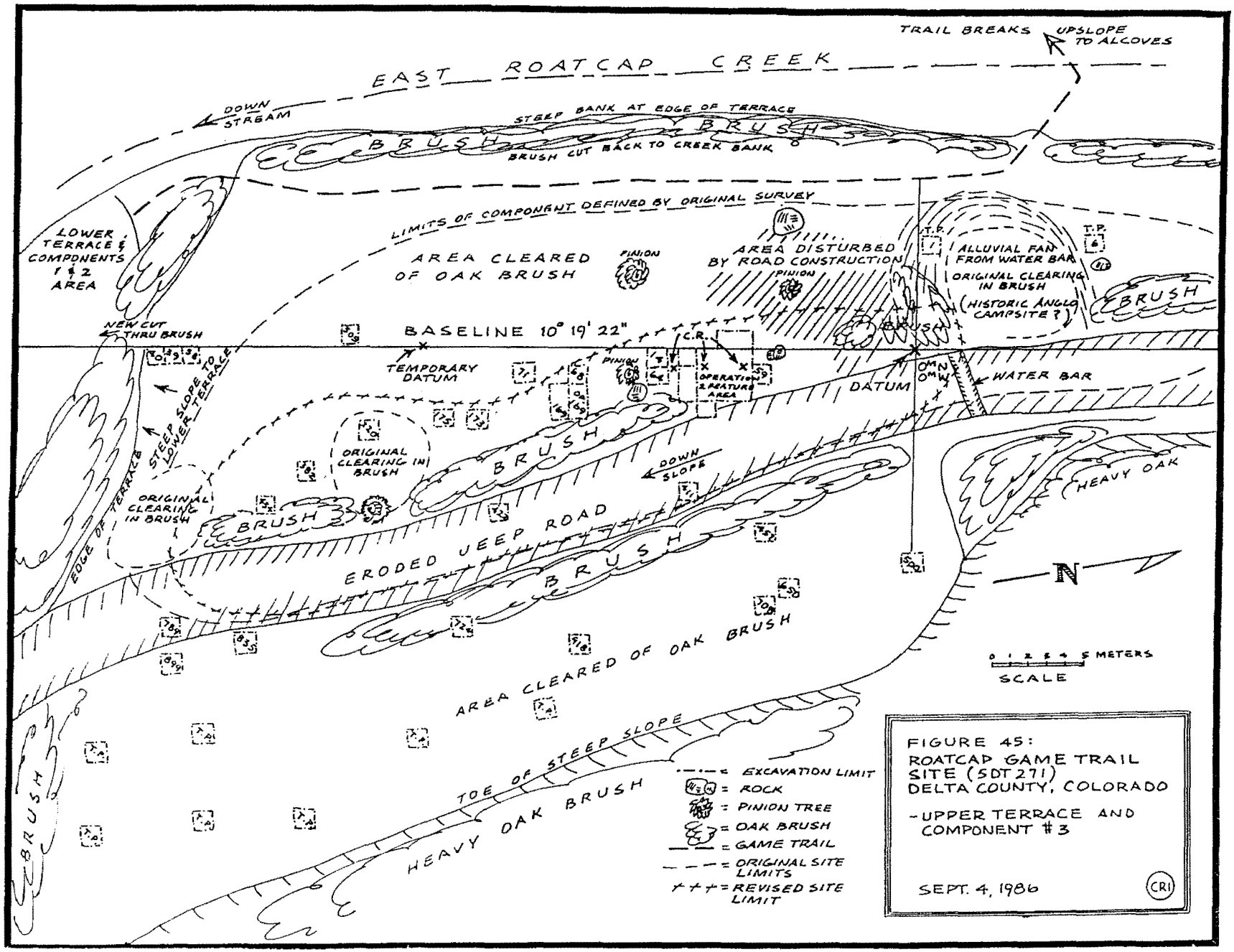


FIGURE 45:
ROATCAP GAME TRAIL SITE (5DT271)
DELTA COUNTY, COLORADO
- UPPER TERRACE AND COMPONENT #3

SEPT. 4, 1986 (CRI)

two milling stones with a small fire basin a few meters to the south. As will be discussed, it is suggested that this component was also a wickiup site.

Dating Concerns

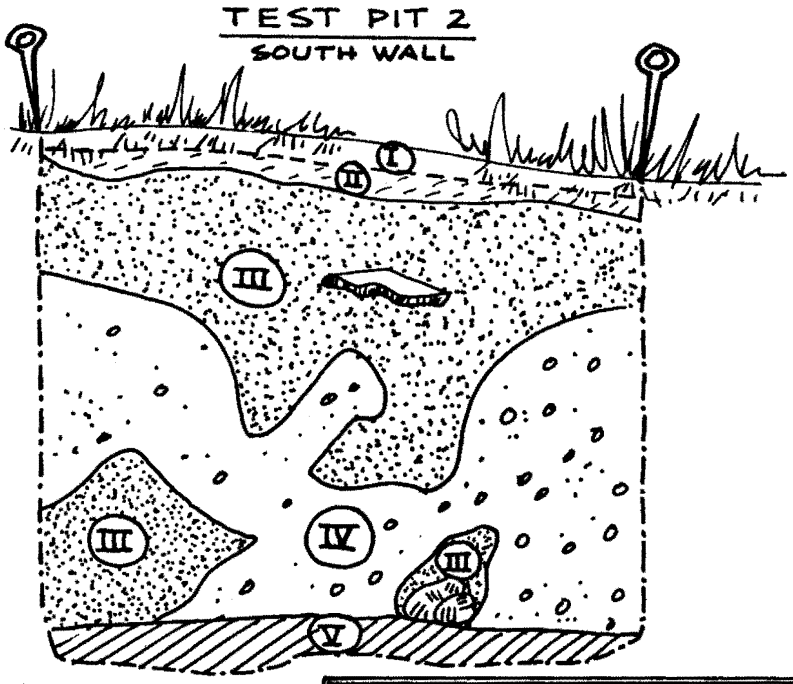
Charcoal was scarce in the eroded hearth in Component 3 but a very small sample was collected from the pit fill beneath the fire-cracked rocks (Figures 49 and 52). This sample was the only measurable charcoal recovered from this component. The one small sample from the hearth was submitted for radiocarbon dating. This sample (Beta 18840) was given extended counting time and yielded a date of 1940 ± 410 B.P. or A.D. 10. The statistical error is higher than hoped for and it is considered to be only a generally reliable date which can be useful in helping to approximate the date of occupation. At a 2 sigma or 95% confidence level this date becomes A.D. 10 ± 820 years. As such it could overlap the Component 2 date of A.D. 760 ± 60.

Two artifacts from Component 3 are believed to be diagnostic in terms of relative chronological position. These (Figure 54) were the base of a corner-notched projectile point or hafted blade and the base of a side-notched point. The corner-notched specimen is within the size and stylistic range of the Elko Series points which persisted in the Great Basin from about 6,000 B.C. to A.D. 1,000 or later (Jennings 1986:117-118; Holmer 1986 and 1979:62). The side-notched point, however, is similar to later Fremont and perhaps Anasazi points ca. A.D. 800-1300 (Holmer 1986; Holmer and Weder 1980). The side-notched point is from a rodent-disturbed context and may be a contaminant.

The chronometric date pretty clearly indicates that this occupation probably dates within a few hundred years of the Time of Christ or within the late Robidoux or early Horse Fly Phases proposed by Buckles (1971) (Table 1) or the very late Archaic or very early Formative Stages outlined by Reed (1984) as they would take in the development of the Anasazi and Fremont culture traditions.

Architecture and Use of Space

Component 3 yielded two milling stones (Figure 55) at the interface of stratigraphic levels III and IV (Figure 46). Milling stones were found at Components 1 and 2 as well as on the surface at 5DT702 (Baker 1984:67) about .5 mile downstream (Figure 3). At the latter site there is evidence of considerable erosion of the sage-covered flat on which it is located. The milling stone is simply flanked by a weak and widely dispersed lithic scatter. In the case of Component 3, the milling stones are again associated with a lithic scatter which appears to originally have been restricted to an arching band along the southwestern margins of the site. This extends about 5 meters east and 15 meters south of the milling stones. Previous erosion appears to have subsequently dispersed the scatter to the west and south and perhaps over the edge of the bench and onto Component 2 on the lower terrace. The general distribution of artifacts is, however, believed to be due to patterning in male and female activity areas in a household setting. The milling stones probably mark the general location of a



I = SOD
II = TOPSOIL
} DARK GREYISH BROWN SILTY LOAM 10 YR 4/2

III = INTRUSIVE FILL OF RODENT BURROW, GREYISH BROWN SILTY LOAM 10YR 4/2

FIGURE 46:
THE ROATCAP GAME TRAIL SITE (5DT 271) DELTA COUNTY, COLO.
- SOIL PROFILES OF TEST PITS 2 AND 6 IN COMPONENT #3 AREA

SEPT. 3, 1986

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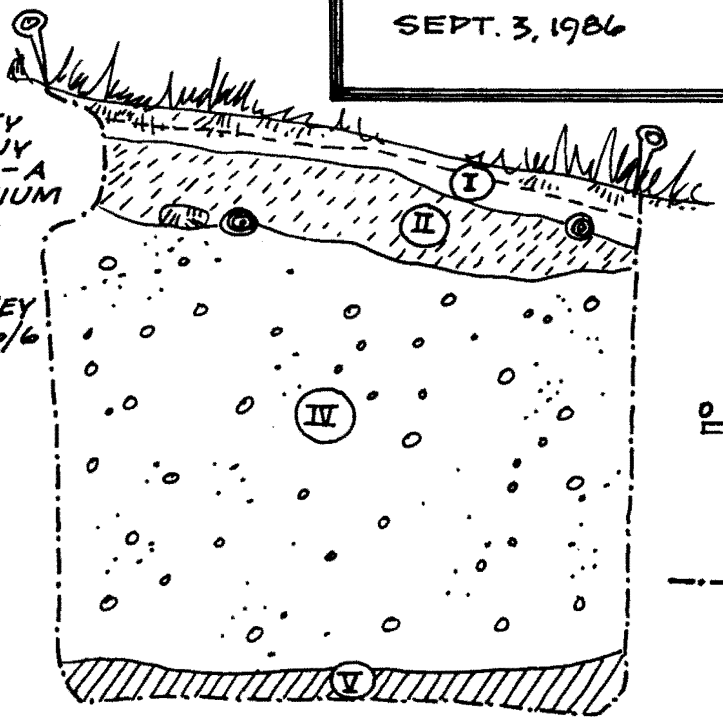
III = YELLOWISH BROWN SILTY CLAY W/MANY INCLUSIONS - A TILL COLLUVIUM 10YR 5/4.

IV = REDDISH YELLOW CLAYEY SILT 7.5YR 6/6



0 25 50 CM
SCALE

—·— = EXCAVATION LIMIT

TEST PIT 6
EAST WALL

"wickiup-like" structure. In contrast, the cultural materials at the presumed wickiup site of Component 1 are still in place and tightly focused around the slab-lined hearth there. Component 3, however, seems similar to the pattern at 5DT702 (Baker 1984:67) as well as at many prehistoric sites on the Uncompahgre Plateau to the west as described by Buckles (1971:627-659) where very old assemblages are often situated on eroded surfaces.

Buckles points out that the only evidence of wickiups which will usually survive in the archaeological record are the fire pits and the rare artifacts. According to Buckles wickiup poles are not set into the ground and will leave no post molds. The cedar bark beds inside the wickiups will, like the structures, decay and leave no evidence. Buckles supports his position with his own observations from the Lee Ranch Wickiup Village and other sites and the account of Davis (1965:32-35) regarding the Kuzediako Paiute of eastern California. Sites believed similar to those investigated by Buckles show little evidence of occupation. Buckles also relies upon Huscher's observations regarding wickiups (Huscher 1939).

Buckles noted that fire pits were in all of the structures at the Lee Ranch Wickiup Village (5MN41) in central to eastern peripheral positions. All were reported to be very shallow basin shaped pits. Component 2 at 5DT271 would appear to have had a similar position in a brush structure. The hearth at Component 3, however, may well be an exterior hearth for a "light summer wickiup type." Buckles cited Harold Huscher's observations on this matter. At these sites a fire pit was 10 to 20 feet from the wickiup door and "pits with many burned rocks" were sometimes as much as 100 feet away. Huscher seems to have felt that the more distant fires were the focus of domestic food production activities, such as seed or nut parching (Buckles 1971:1254).

The description of the more distant fire pits with burned rocks aptly describes the fire pit in Unit 169 (Figures 49 and 52). This feature is about 8 meters south of the focus of activity suggested by the two milling stones in Operation 2. One perplexing question regards the location of milling stones relative to the structure(s) itself. The ethnographic literature appears to be vague on the matter. If a cold weather occupation, one could reasonably expect to find a milling stone in the house. They frequently appear in rock shelters such as at Sisyphus (Gooding and Shields 1985:94) or at the early pit house near State Bridge excavated by Metcalf and Black in 1987 (Metcalf and Black 1991) or at the Kewclaw site in Garfield County (5GF126) which may well have been a winter occupation (Cassells 1983:82). The latter site did not seem to have had direct evidence of a milling stone, although manos were present. A milling stone was found inside the brush structure of Component 2 at 5DT271. Jones (1986:167-170) reports a milling stone from inside a brush structure at 5GN247 on the Lake Fork of the Gunnison.

In a warmer weather occupation, as suggested by Buckles and Huscher, a different lighter shelter type may well have been used. Activity areas also may well have been less focused and outside the shelter as with the distant fire for parching seeds and nuts. The

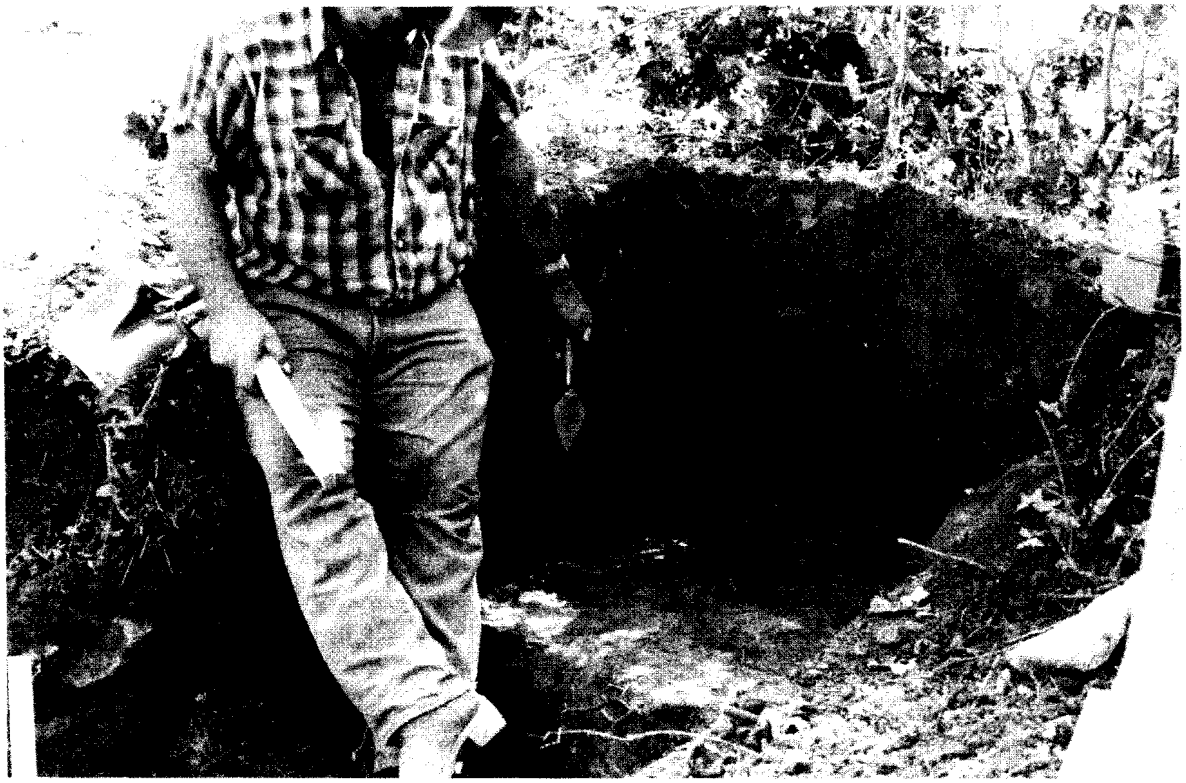


Figure 47: Operation 2C at Component 3, 5DT271. Millingstone shown *in situ* at time of discovery. View is to northeast. George Small points to grinding surface on stone. August, 1986.

distance between the milling stones and the presumed parching area only suggests, but certainly does not prove, that Component 3 may have been a warmer weather occupation. It is relatively clear that the excavations did isolate the main occupation area at this site and that we are dealing with a homogeneous complex of features.

It is suggested that Component 3 probably marks the location of a former wickiup site. The exact location of the structure(s) cannot be determined but were probably close to the milling stones. The hearth for this occupation was not found unless it is represented in the hearth in Unit 169. The Unit 169 hearth yielded obsidian as did the area at the milling stones. This was the only obsidian found and is believed to be evidence for association of the two features. If a warm weather occupation, the milling stones may well have been located outside the wickiup. Neither stone showed much wear and their close proximity may be an indication that two women were present in the household and worked side by side on their grinding slabs (See Martin and Voorhies 1975:182-183; Steward 1938:44).

The hearth in Unit 169 showed some suggestion that it had in part been eroded away. Although there was an intact concentration of rock over part of the fire pit and along its south side, there was only 10 or 15 cm of topsoil overlying it. Most importantly, however, there was no ash or charcoal on top of the yellowish brown clayey silt (Figures 52 and 53) into which the hearth basin was excavated. Except where protected by the overlying fire-cracked rock, the area about the hearth was remarkably clean. The fill of the basin was nearly sterile except for one microflake of gray chert and the limited amount of charcoal used to determine the radiocarbon date of 1940 ± 410 B.P. (Beta 18840). The fill was essentially the same as the subsoil but contained limited flecks of charcoal. There was no stratification of the fill. One small obsidian flake knife and a chert burin (Table 11, Specimens 7 and 13 and Figure 54G and J) were found at the edge of the hearth.

The hearth was a simple basin originally excavated at least 20 cm into the living surface (Figure 52). It was oval in outline and was 50 cm by 50 cm in size. It was covered by a quantity of variously sized fire-cracked sandstone rocks. The fill of the hearth was sampled for ethnobotanical remains. One fragment of an unidentifiable uncharred seed was all the floral material identified by Meredith Matthews (Matthews 1987) (Appendix 3). This hearth feature is of a kind very frequently found archaeologically in the Southwest, Intermountain West and Northwestern Plains (See Frison 1978:355; Irwin-Williams 1973:6; Buckles 1971:1254). Gooding and Shields (1985:53) describe hearths of this type as "cluster of stones basin hearths." Their use is almost certainly connected with food preparation, particularly those derived from floral resources. There is a great need for an ethnoarchaeological synthesis of the role of fire and hearth types in relation to prehistoric features of the region. Baker (1986g) recently reported a series of such simple hearths with fire-cracked rocks in firmly dated contexts of 8,500 to 10,000 B.P. in Northwestern Colorado.

As mentioned, lithic debitage was found to concentrate in an arch south and west of the Operation 2 feature area. It extended to the edge

Figure 48: Progress photo of excavations at Operation 2 feature area at Component 3 on the upper bench at 5DT271. View is to southwest from jeep road. August, 1986.

FIGURE 49

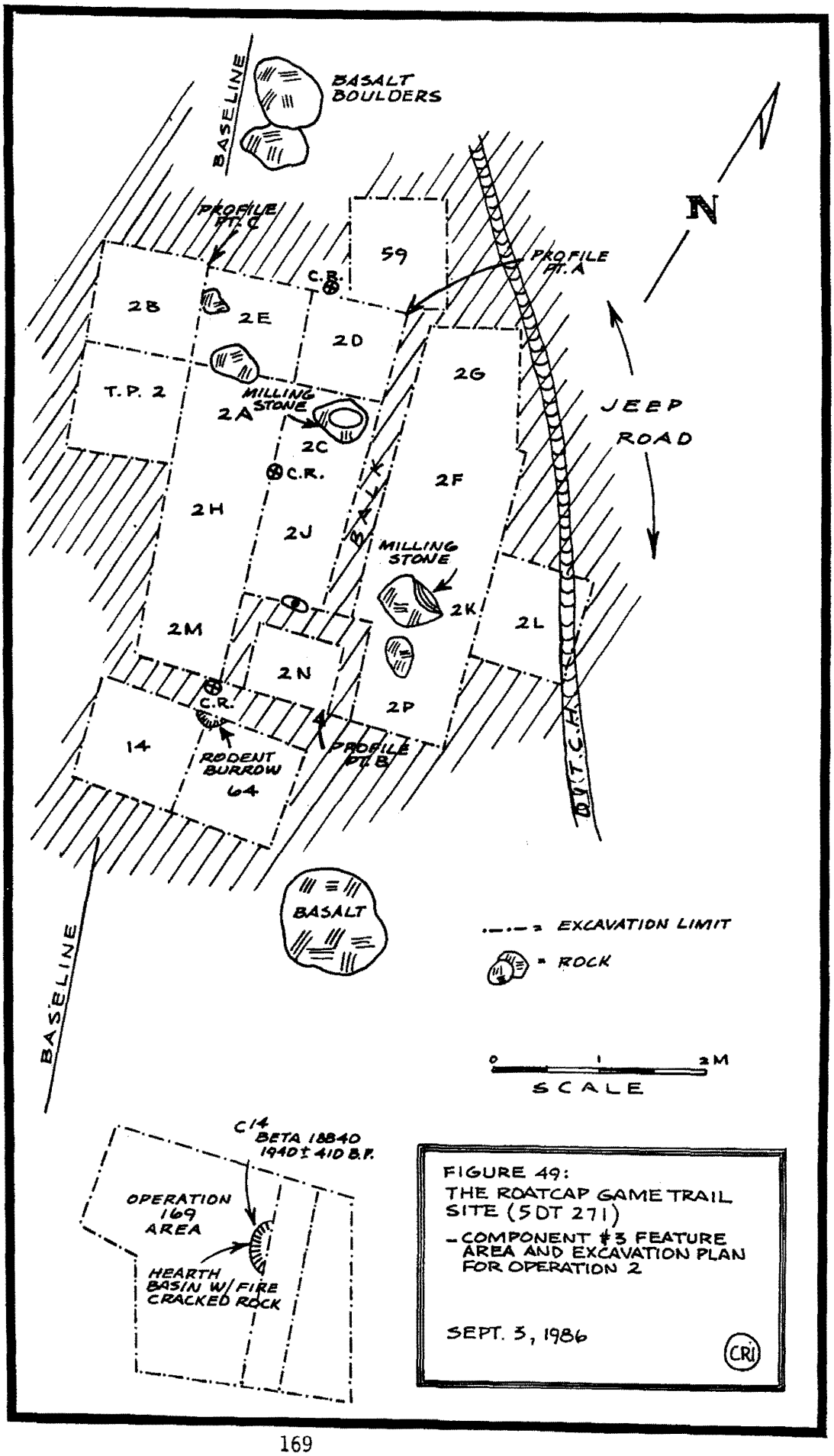


FIGURE 49:
THE ROATCAP GAME TRAIL SITE (5DT 271)
- COMPONENT #3 FEATURE AREA AND EXCAVATION PLAN FOR OPERATION 2

SEPT. 3, 1986

CRI

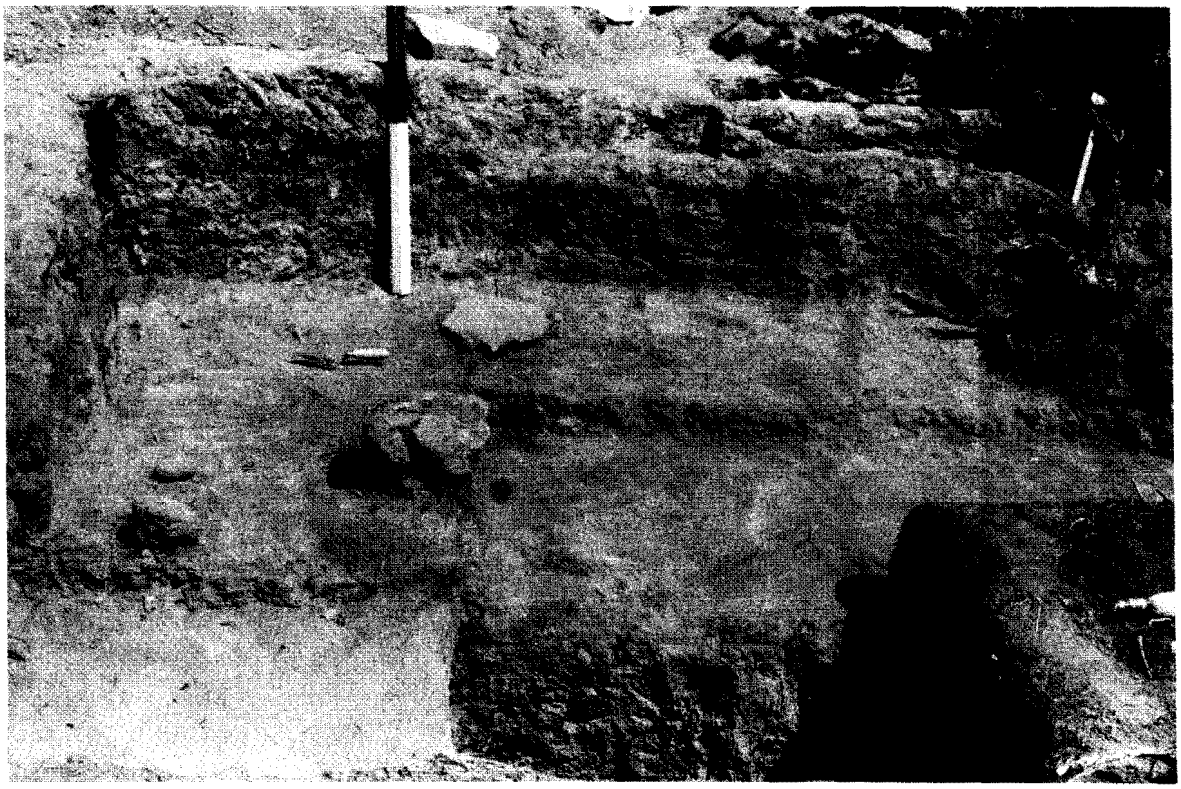
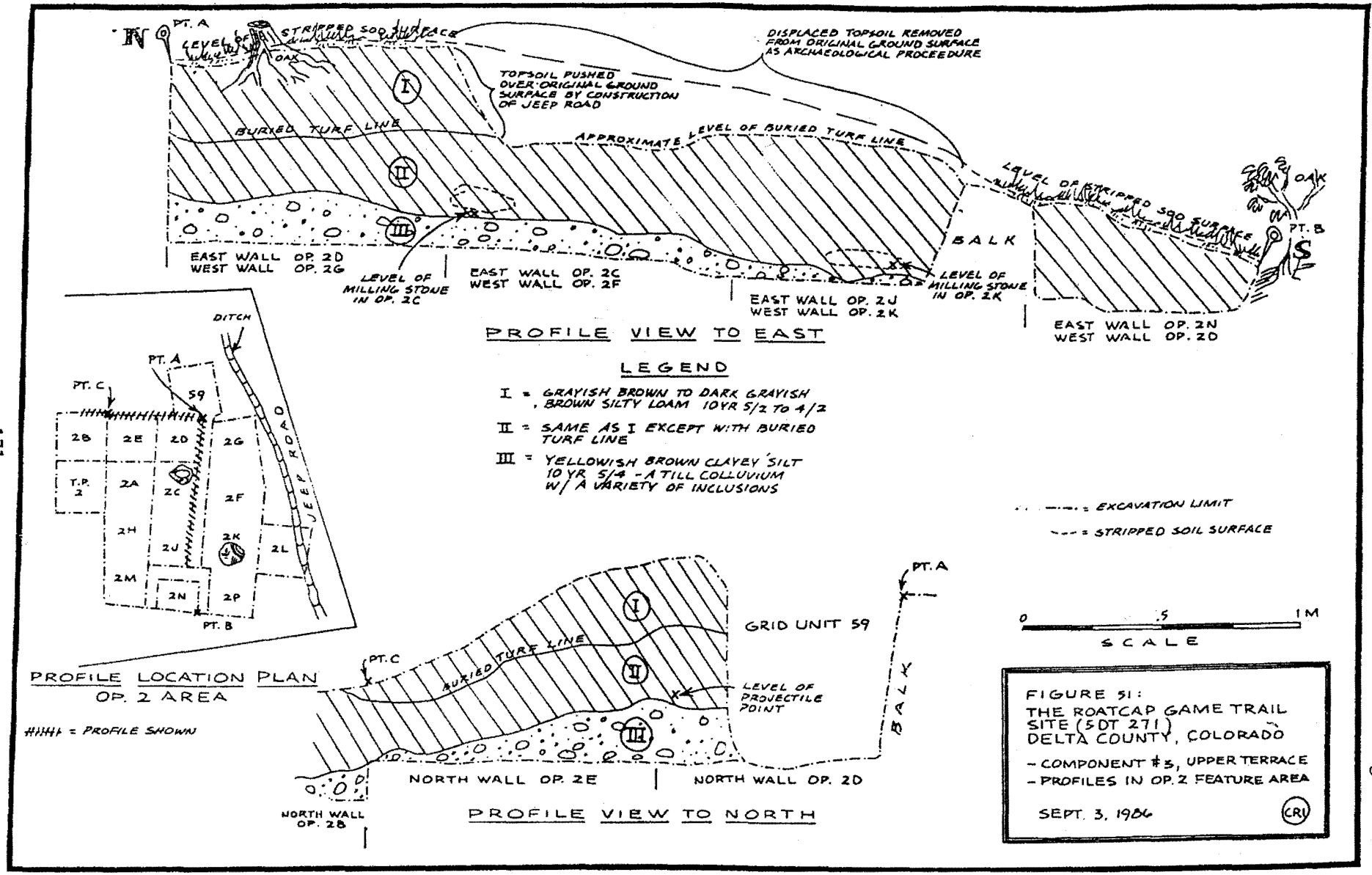


Figure 50: Post-excavation overview of Operation 2 feature area and central profile at Component 3 on the upper bench at 5DT271. View is to east showing original Test Pit No. 2 and millingstone in Unit 2C. Scale is in .5 meter increments. August, 1986.

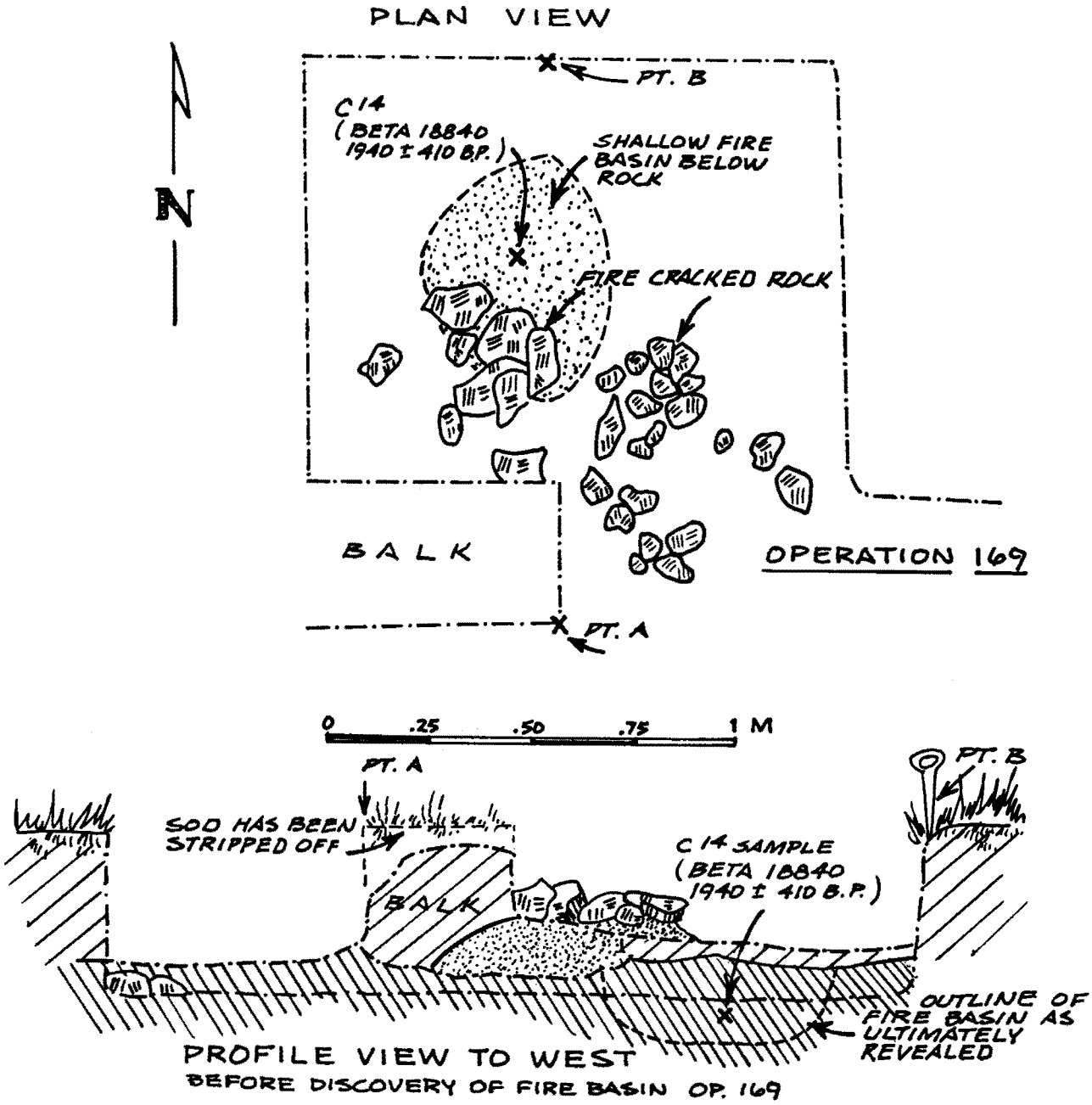

N
PT. A
LEVEL OF STRIPPED SOD SURFACE
OAK
DISPLACED TOPSOIL REMOVED FROM ORIGINAL GROUND SURFACE AS ARCHAEOLOGICAL PROCEEDURE
TOPSOIL PUSHED OVER ORIGINAL GROUND SURFACE BY CONSTRUCTION OF JEEP ROAD
BURIED TURF LINE
APPROXIMATE LEVEL OF BURIED TURF LINE
I
II
III
BALK
PT. B
EAST WALL OP. 2D
WEST WALL OP. 2G
LEVEL OF MILLING STONE IN OP. 2C
EAST WALL OP. 2C
WEST WALL OP. 2F
EAST WALL OP. 2J
WEST WALL OP. 2K
LEVEL OF MILLING STONE IN OP. 2K
EAST WALL OP. 2N
WEST WALL OP. 2O
PROFILE VIEW TO EAST
LEGEND
I = GRAYISH BROWN TO DARK GRAYISH BROWN SILTY LOAM 10YR 5/2 TO 4/2
II = SAME AS I EXCEPT WITH BURIED TURF LINE
III = YELLOWISH BROWN CLAYEY SILT 10 YR 5/4 - A TILL COLLUVIUM W/ A VARIETY OF INCLUSIONS
= EXCAVATION LIMIT
= STRIPPED SOIL SURFACE
DITCH
PT. A
PT. C
59
2B
2E
2D
2G
T.P. 2
2A
2C
2F
2H
2J
2K
2L
2M
2N
2P
PT. B
JEEP ROAD
PROFILE LOCATION PLAN
OP. 2 AREA
= PROFILE SHOWN
PT. A
GRID UNIT 59
PT. C
BURIED TURF LINE
LEVEL OF PROJECTILE POINT
BALK
NORTH WALL OP. 2E
NORTH WALL OP. 2D
NORTH WALL OP. 2B
PROFILE VIEW TO NORTH
0
.5
1M
SCALE
FIGURE 51:
THE ROATCAP GAME TRAIL SITE (5DT 271)
DELTA COUNTY, COLORADO
- COMPONENT #5, UPPER TERRACE
- PROFILES IN OP. 2 FEATURE AREA
SEPT. 3, 1986
CRI

of the upper bench where it breaks downslope to the lower terrace. Colluvium overlying the Component 2 living surface contains lithic debitage similar to that present in Component 3 from the upper terrace. This suggests that erosion and/or mass movement may have impacted the upper terrace, particularly on its south edge above Component 2. While some erosion is believed to have occurred over most of the upper terrace, it seems doubtful that all the debitage could have been moved to the south and west of the feature area marked by the milling stones and hearth. Rather, it is felt that debitage was originally concentrated away from the milling stones and from this location may have been carried downslope over Component 2. This situation could also be taken as evidence that Component 3 postdates Component 2. The radiocarbon date for Component 3, poor as it is, argues against this. The history of soil formation in the area presents ample evidence of heavy colluvial deposition and this could easily have occurred after the occupation of Component 2. The distribution of lithic debitage at Component 3 may indicate the presence of a male oriented activity area well away from a female one around the hearth, milling stones, and probable structural site. Parallels in such activity area patterning are suggested in a recent article by James O'Connell (1987). An interpretive reconstruction of the site plan of Component 3 is presented in Figure 56 and illustrates this interpretation.

Material Culture

Component 3 yielded only 86 artifacts of flaked stone as well as a limited amount of ground and pecked stone from both the surface and excavated contexts. No ceramics and only one fragment of unidentifiable animal bone were recovered. This assemblage was analyzed according to general context, whether surface or excavated (Tables 10 and 11). The greatest emphasis is herein placed on the excavated materials, particularly those which appear to be related to the hearth and milling stone feature areas. Nearly all of the surface materials were collected during the 1978 survey (Table 6). It was possible to demonstrate that much of the surface material was associated with the buried portions of the component. This was done by a simple comparative analysis of lithic materials. In this limited assemblage 11 different descriptive categories were assigned to the lithic materials. Some of these are so individually distinctive within the component that flakes from both components could accurately be matched to the same piece of tool stone on a general descriptive basis. This would probably not be so easily done on a site with higher lithic counts. As an example, it was not possible to attempt such matches with grey quartzite. It was, however, possible to match the lower frequency white and banded chalcedony. Obsidian was found in association with the milling stones in Operation 2. Likewise, obsidian was found in association with the rock filled hearth a few meters south of the milling stones. Both samples were submitted for source analysis but were lost by the laboratory. An obsidian core utilized as a knife was, however, not lost and was submitted for source analysis. The only tie between the hearth and milling stones was on the presence of obsidian in both features. This allowed for at least a tentative association of both features to be made for dating purposes since there was no stratigraphic controls other than that they were both located on the same subsoil level.

FIGURE 52



/// = TOPSOIL - GRAYISH BROWN SILTY LOAM 10YR 5/2

\\\ = YELLOWISH BROWN CLAYEY SILT - A TILL COLLUVIUM 10YR 5/4

= CULTURALLY REWORKED CLAYEY SILT TILL W/CHARCOAL AND FIRE CRACKED ROCK

•—•— = EXCAVATION LIMIT

FIGURE 52:
THE ROATCAP GAME TRAIL SITE (5DT 271)
DELTA COUNTY, COLORADO

- PLAN AND PROFILE OF HEARTH IN COMPONENT # 3, OP. 169
AUG. 22, SEPT. 5, 1986 (CRI)

While the possibility of some contaminants from earlier or later occupations of the general area cannot be ruled out at Component 3, all of the materials from the upper terrace are herein attributed to the single occupation which is believed to have focused about the milling stones and rock filled hearth. The material culture of the component is relatively homogeneous and does not evidence any diagnostic materials which seem to be fully incompatible with the date range and cultural interpretation ventured.

FLAKED STONE

The flaked stone assemblage was subjected to a general analysis in keeping with Kvamme's system of tool classification (Kvamme and Black 1986). In this scheme, three basic classes of tools are recognized in addition to unutilized flakes. All of these have additional categories of artifact designations. As indicated in Tables 10 and 11 the lithics encompass a wide variety of tool stone types, particularly when considered in light of the small number of flakes. About 10 distinct materials are recognized even though it is acknowledged that some may be from the same source. In both surface and excavated contexts, basalt and chalcedony were the most common tool types. The variety of materials attributed to Component 3 is obvious in comparison to Components 1 and 2. It is suspected that this observation has cultural significance although no attempt was made to quantify for this consideration and further test its validity. The overall character of the Component 3 lithics suggests more variety of high quality tool stone was available than in the later components. This included obsidian from the Rio Grande Pleistocene Terrace near Cochiti in southern New Mexico (Montgomery 1987).

The assemblage evidences more variety in tool functions than that of Component 1 where the emphasis appeared to be on cutting tasks as part of the butchering process (Tables 8 and 12). In Component 1 there was also a much higher dependence on utilized flakes and little evidence of lithic reduction. There, utilized flakes constituted 74% of the total tool assemblage and 37% of the total lithic assemblage. In Component 3 utilized flakes constituted a nearly equal high of 66% of the tools and only 28% of the total lithic assemblage. Unutilized debitage constituted 43% of the lithics (Table 12). While not a high number when compared to sites where tool production had a high emphasis, there are enough unutilized flakes present to suggest some limited tool production. Overall, however, the role of tool production appears to have been overshadowed by activities involving use of tools and debitage. In this regard, tools of all kinds constitute 57% or more of the total lithic assemblage (Table 12). The Component 3 assemblage is not directly compared to that of Component 2 because the latter one represents the interior of a structure. Component 1, however, like most of Component 3, represents an activity area(s) exterior to a structure. The Component 2 assemblage (Table 9) shows a much higher percentage of utilized flake tools in the total tool assemblage (55% as opposed to 20%). The percentage of utilized flake tools in the total assemblage is relatively consistent for the two components with No. 2 showing 13% and No. 1 at 18%. The important consideration in this instance may relate to the probable high numbers of women's activities apparent in

TABLE 10: Lithic Tools from Surface of Component 3, 5DT271
(Keys to Figure 54)

Category/ Condition	Figure No.	Material	Shaped Tool	Edge Angle	Edge Wear	Worked Edge	Original Tool Class
1 Biface C	54B	PQ	Yes		No?	Yes	Rejected Side Notched Point
2 Biface C	54A	GQ	Yes		No?	Yes	Side Notched Point
3 Biface F		GQ	Yes		No?	Yes	Serrated Edge Point
4 Biface F		GQ	Yes		Yes?	Yes	Knife or Preform
5 Biface F		GCT	Yes?		Yes?	Yes	Uncertain
6 Biface F		Basalt	Yes		Yes	Yes	Ovate Knife
7 Biface C		Basalt	Yes		Yes	Yes	Ovate Knife
8 Biface C		Basalt	Yes		Yes	Yes	Chopper
9 Uniface		PQ	No	A	Yes	No	Flake Knife
10 Uniface		GQ	No	A	Yes	No	Flake Knife
11 Uniface		GQ	No	A/O	Yes	No	Flake Knife/ Scraper
12 Uniface		YCT	No	A/O	Yes	No	Flake Knife/ Scraper
13 Uniface		GCH	Yes	O	Yes	Yes	Spokeshave/ Scraper
14 Uniface		GCH	No	A	Yes	No	Flake Knife
15 Uniface		BCH	Yes	A/O	Yes	Yes	Scraper/ Knife
16 Uniface		BCH	No	A	Yes	No	Flake Knife
17 Uniface		WCH	No	A	Yes	No	Flake Knife
18 Uniface		WCH	Yes	A/O	Yes	Yes	Knife/ Scraper
19 Uniface		BCH	Yes	O	Yes	Yes	Scraper

TABLE 10 (Cont'd): Lithic Tools from Surface of Component 3, 5DT271

Category/ Condition	Figure No.	Material	Shaped Tool	Edge Angle	Edge Wear	Worked Edge	Original Tool Class
20 Uniface		BCH	No	0	Yes	No	Flake Spokeshave
21 Uniface		RCT	No	0	Yes	No	Flake Scraper
22 Uniface		GCT	No	0	Yes	No	Flake Scraper
23 Uniface		GCT	No	0	Yes	No	Flake Scraper
24 Uniface		GCT	No	0	Yes	No	Flake Scraper
25 Uniface		GCT	No	A	Yes	No	Flake Knife
26 Uniface		GSS					
27 Uniface		BCH	Yes	A	Yes	Yes	Knife
28 Uniface		BCT	No	0	Yes	No	Flake Scraper
29 Uniface		BST	No	0	Yes	No	Flake Scraper
30 Uniface		BST	No	0	Yes	No	Flake Scraper
31 Uniface		BST	No	A	Yes	No	Flake Knife
32 Uniface		BST	Yes	A	Yes	Yes	Knife
33 Uniface		BST	No	A	Yes	No	Flake Knife

Minimum tool count = 33
Total Artifacts = 63 (including all debitage)
53% = minimum number of tools in assemblage (may be higher)
47% = maximum number unutilized debitage in assemblage (may be lower)
58% = utilized flake tools in total tool assemblage (may be higher)
30% = utilized flake tools in total assemblage (may be higher)

Bifaces
Projectile Points = 3
Knives or Preforms = 3
Choppers = 1
Uncertain = 1
Total = 8

Utilized Flake Tools
Knives = 8
Scrapers = 8
Scrapers/Knives = 2
Spokeshaves = 1
Total = 19

Unifacial Tools
Knives = 2
Scrapers = 1
Knives/Scrapers = 2
Spokeshave/Scraper = 1
Total = 6

TABLE 10 (Cont'd): Lithic Tools from Surface of Component 3, 5DT271

Key:

Lithic Materials	Tools	Unutilized Debitage		Totals
PQ = pink quartzite	2	1	3	6
GQ = grey quartzite	5	5	10	20
GCT = grey chert	3	3	6	12
BST = basalt	8	11	19	38
YCT = yellow chert	1	0	1	2
GCH = grey chalcedony	2	3	5	10
BCH = brown chalcedony	5	1	6	12
WCH = white chalcedony	2	1	3	6
RCT = red chert	1	1	2	4
GCT = grey chert	3	4	7	14
BCT = brown chert	1	0	1	2
	33	30	63	126

F = Fragment
C = Complete

A = Acute
O = Obtuse

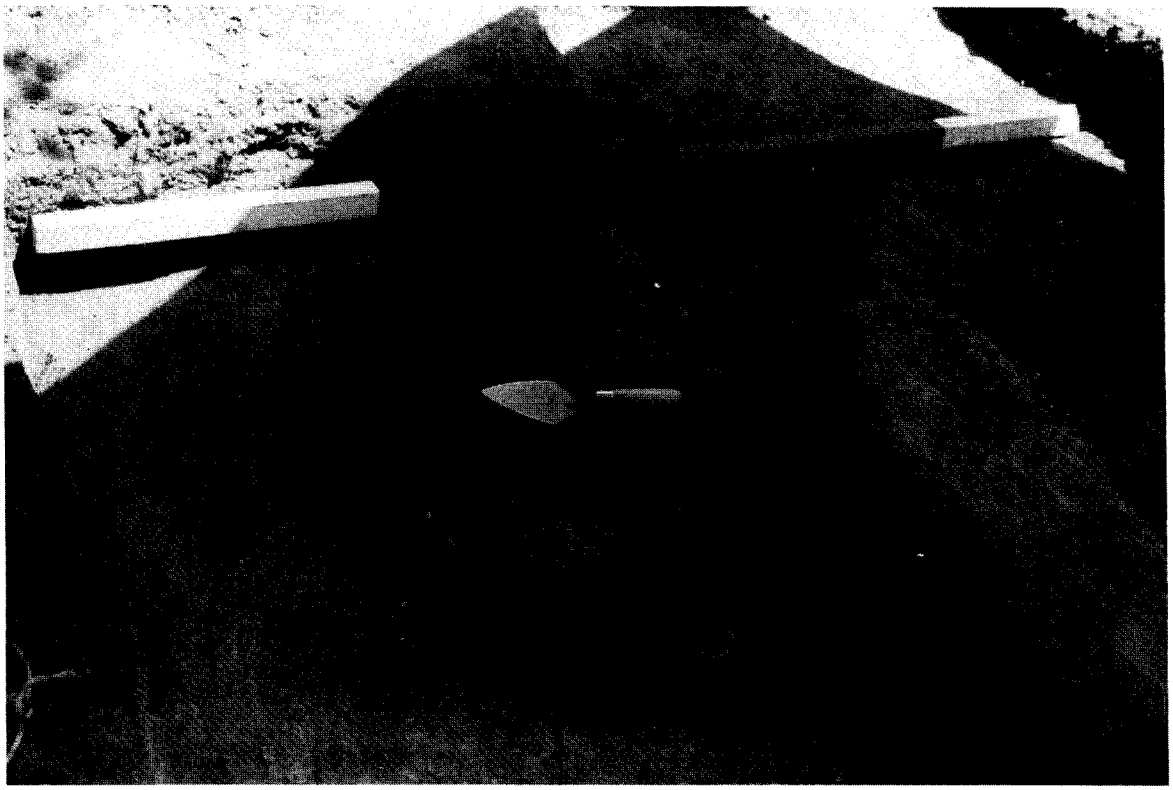


Figure 53: Concentration of fire-cracked rock prior to excavation of shallow basin in Unit 169 at Component 3 on upper bench at 5DT271. This feature area yielded an obsidian flake and a radiocarbon date of 1940 ± 410 B.P. or ca. A.D. 10 (Beta 18840). Trowel points to north and scale is in .5 meter increments. August, 1986.

TABLE 11: Flaked Lithic Tools Excavated From Component 3, 5DT271
(Keys to Figure 54)

	Category	Figure No.	Provenience	Material	Shaped Tool	Edge Wear	Edge Angle	Worked Edge	Original Tool Class
1	Biface F	54C	2A3	GQ	Yes	Yes	A	Yes	Hafted Knife or Dart Point
2	Biface F	54D	TP 2/3	GQ	Yes	?	A	Yes	Arrow Point
3	Biface F	54I	2E2	(lost) O	No	Yes	A	No	Knife
4	Biface F		64/2	YCT	Yes	Yes	A	Yes	Knife or Projectile Point
5	Biface C		2H2	BST	No	Yes	O	Yes	Core Chopper
6	Uniface F		501/1	WCT	Yes	Yes	O	Yes	Burin/ Spokeshave
7	Uniface F	54G	169/2	GCT	Yes	Yes	O	Yes	Burin/ Spokeshave
8	Uniface C	54E	261	BCT	Yes	Yes	A/O	Yes	Scraper/ Knife
9	Uniface F	54H	2D1	WCH	Yes	Yes	A/o	Yes	Scraper/ Knife
10	Uniface F		TP 1/5	BCH	No	Yes	A	No	Flake Knife
11	Uniface F	54F	2K3	RCH	Resharp-ening Flake	Yes	A	Yes	Knife
12	Uniface F	54K	2E2	(lost) O	Yes Resharp-ening Flake	Yes	A	Yes	Knife

TABLE 11 (Cont'd): Flaked Lithic Tools Excavated From Component 3, 5DT271

	Category	Figure No.	Provenience	Material	Shaped Tool	Edge Wear	Edge Angle	Worked Edge	Original Tool Class
13	Uniface F	54J	169/3	(lost) O	No	Yes	A	?	Flake Knife
14	Uniface C		TP 2/1	BST	Yes	Yes	O	Yes	Scraper
15	Uniface C		422/2	BST	No	Yes?	O	No	Flake Knife
16	Uniface C	54L	TP2	BST	No	Yes	A	Yes	Flake Knife (Denticulate)

Minimum Tool Count = 16
Total Artifacts (including all debitage) = 23

70% = minimum number tools in assemblage (may be higher)
30% = maximum number unutilized debitage in assemblage (may be lower)
25% = utilized flake tools in total tool assemblage (may be higher)
18% = utilized flake tools in total assemblage (may be higher)

Bifaces Projectile Points or knives = 4 maximum
Choppers = 1
Total = 5

Unifacial Tools Knives = 2
Scrapers = 1
Burin/Spokeshaves = 2
Scraper/Knives = 2
Total = 7

Utilized Flake Tools

Knives = 4
Total = 4

Lithic Materials	Tools	Unutilized Debitage	Totals
GQ = gray quartzite	2	1	3
O = obsidian	3	0	3
YCT = yellow chert	1	0	1
BST = basalt	3	5	8
WCT = white chert	1	0	1
GCT = gray chert	1	0	1
BCT = black chert	1	0	1
WCH = white chalcedony	1	0	1
BCH = brown chalcedony	1	1	2
RCH = red chalcedony	1	0	1
Heat discolored	1	0	1
	15	8	23

F = Fragment
C = Complete
A = Acute
O = Obtuse
Lost = Specimen lost by consulting obsidian laboratory

Components 1 and 2. At these components, potential activity areas away from the hearths and milling stones were not examined. The respective frequencies of utilized flake tools within the tool assemblages of these components (74% and 55%) and within the total assemblages (37% and 18%) are believed to be attributable to sexual roles within the confined household spaces examined. Component 3, on the other hand, takes in materials from a much wider area that probably included more representation of male related activities such as the lithic reduction suggested for the southwest area of the site away from the women's area about the house. The extensive nature of hunter gatherer households and site structure has been discussed by O'Connell (1987) who points out their frequent extensive spatial plans. At Component 3, we were able to sample a wider household site structure than at Components 1 and 2. This probably constituted our only look at any predominantly male oriented work areas at 5DT271. The reduced percentages of utilized flake tools in the assemblage from Component 3 may indicate that utilized flakes were more frequently found in the women's tool kit than in the men's. Comparative percentages for all three components are presented in Table 13.

-Bifacial Tools

Five bifaces (Table 11) were recovered from the excavation at Component 3. Four of these, a projectile point, a hafted knife, an obsidian knife and a basalt chopper (Figure 54CDI), came from the Operation 2 area in close proximity to the milling stones. The fifth came from unit 64 immediately south of the Operation 2 area. All of these items came from on or just above the colluvial till substratum of the site (Figure 51) and are believed to constitute a portion of the assemblage of this somewhat eroded living surface. The surface near the milling stones also yielded the midsection of a slender serrated edge point during the 1978 survey. A small corner-notched point (Figure 54A and Table 10, Specimen 2) was recovered from the road a few meters to the north of the milling stone. A small hafted knife or rejected side-notched point (Table 10, Specimen 1, Figure 54B) was also found on the road at the south edge of the site. The 1978 survey team (Appendix VII) mentions an Armijo style projectile point from near Operation 2. This could, however, not be found in the 1978 collection unless the reference was to the above mentioned serrated edge midsection that was in that collection. The Armijo Complex is part of the Oshara Tradition of the northern Southwest and dates ca. 1800 B.C. to 800 B.C. (Irwin-Williams 1973:9). Materials of the Armijo Complex are seen as incompatible with the time frame suggested at Component 3 or with the rest of the material culture assemblage. Descriptions of bifaces beyond those presented in Tables 10 and 11 and Figure 54 will be confined to those items offering some further diagnostic or interpretive potentials.

Projectile Point (Figure 54A) (Table 10/2)

Triangular outline; tip is broken. Shallow corner notches poorly defined with slightly expanding stem and flat to slightly concave base. Base width is less than that of body.

Material: grey quartzite
Size: Length, as reconstructed, about 3.3 cm; maximum width 2.9 cm; thickness .5cm

Type Designation: En Medio Phase, Oshara Tradition style (Irwin-Williams 1973); Buckles (1971) Type 6; Magic Mountain Type 20, Irwin-Williams and Irwin (1966:83).

Cultural Associations: Apex complex at Magic Mountain (Irwin-Williams 1966); En Medio Phase, Oshara Tradition (Irwin-Williams 1973); General Basketmaker Period, late Archaic/early Formative.

Time Frame: Oshara Tradition, En Medio Phase ca. 800 B.C. to A.D. 400 (Irwin-Williams 1973); a point of this style was recently recovered from the Indian Creek Site near Grand Mesa in Mesa County, Colorado and dated after 2100 B.P. (150 B.C.) (Horn, Reed and McDonald 1987:31-32).

Distribution: Suggestions are that this point style is widely distributed throughout the northern Southwest at least. Its relationship to point styles of the Great Basin is unclear at this time. The best overall description remains Irwin-Williams (1973).

Comment: This is a surface artifact. It was found in the general vicinity of the milling stones in Component 3 but its place in the Component 3 assemblage is not assured.

Projectile Point/Hafted Knife (Figure 54C) (Table 11/1)

Triangular markedly corner-notched biface. Basal fragment. Well formed diagonal corner notches with convex base and straight to convex edges.

Material: Fine gray quartzite with evidence of heat alteration that was possibly subsequent to manufacture.

Size: reconstructed length ca. 4.3 cm; width of base 1.8 cm; thickness .4 cm

Type Designation: Elko Series corner-notched bordering on side-notched (Holmer 1979:34,55; 1986:101); Buckles (1971) type 28 (?); Magic Mountain Type 23 (Irwin-Williams and Irwin).

Cultural Affiliation: Apex Complex at Magic Mountain (Irwin-Williams and Irwin 1966); En Medio and Trujillo Phases Oshara Tradition? (Irwin-Williams 1973); Gatecliff Floruit (Holmer 1986).

Time Frame: In eastern Great Basin ca. 6,000 B.C. to A.D. 1,000 with hiatuses ca. 4,200-3000 B.C. and 1,400 B.C. - A.D. 200 (Holmer 1986). Late hiatus part of Gatecliff Floruit. Possible En Medio Phase relationships suggest ca. 800 B.C. to A.D. 400 (Irwin-Williams 1973), Late Archaic thru Basketmaker III (?).

Distribution: May have a wide distribution in Great Basin and Intermountain West and at least northern Southwest.

Comment: Time frame suggested in literature is fully compatible with date of 1940 ± 410 B.P. at 5DT271 (Beta 18840). Specimen shows edge-wear and may have

been used as hafted knife or perhaps subjected to rejuvenation (Flenniken and Raymond 1986). This specimen was recovered from the same level as the Component 3 milling stone in Unit 2C and within 1 meter of it. It is considered to be associated with this living surface.

Projectile Point (Figure 54D) (Table 11/2)

Triangular distinctly side-notched point with slightly ovoid shape, convex base and well defined side notches. Basal fragment with tip and one basal corner missing. Size suggests use as an arrowpoint.

Material: granular gray to pink quartzite

Size: reconstructed length ca. 2.9 cm; maximum width 1.4 cm; thickness .4 cm; depth of deepest side notch .3 cm.

Type Designation: This point appears similar to the Nawthis and/or Bear River side-notched points known from Fremont sites in Utah. Very similar or identical to Anasazi point styles (Holmer and Weder 1980). Apparently these points are not often encountered in West-Central Colorado for they are not common in Buckles' (1971) descriptions. Rohn reports similar points from the Anasazi core area and attributes them to the Pueblo III period (Rohn 1977:218). Distinctive side-notched arrow points are, however, conspicuous in their absence not only in Buckles' description (1971), but in those of Huscher and Huscher (1943:32) and Hurst (1946,1948). Wormington (1955:51) does, however, describe similar points from the Turner Ranch Site in Utah which does have Fremont associations.

Time Frame: Small side-notched points (other than Desert Side Notched) are comparatively late in time in Desert West ca. A.D. 800 until A.D. 1200 or 1300 when they are replaced by Desert Side Notched (Holmer 1986:106). Evidence suggests they pertain to latter part of the Formative Stage as represented in both Fremont and Anasazi Traditions. Dating for West-Central Colorado is not well understood.

Distribution: Widespread in many areas of Great Basin and Intermountain West, Northern Plains (?) and northern Southwest (?).

Cultural Affiliation: Formative Stage Cultures

Comments: This point was excavated from a rodent-disturbed context in Test Pit 2 at the west edge of the Operation 2 feature area. Its archaeological context and suggested late date imply it may be a contaminant in the Component 3 assemblage. Within maximum dating assigned to Component 3 at 2 Sigma level (A.D. 10 ± 820 years) its presence is not incompatible with the rest of the assemblage.

Bifacial Knife (Figure 54I) (Table 11/3)

Assymetrical bifacial knife. Edge wear is evident on this small obsidian core from which the specimen is made.

FIGURE 54

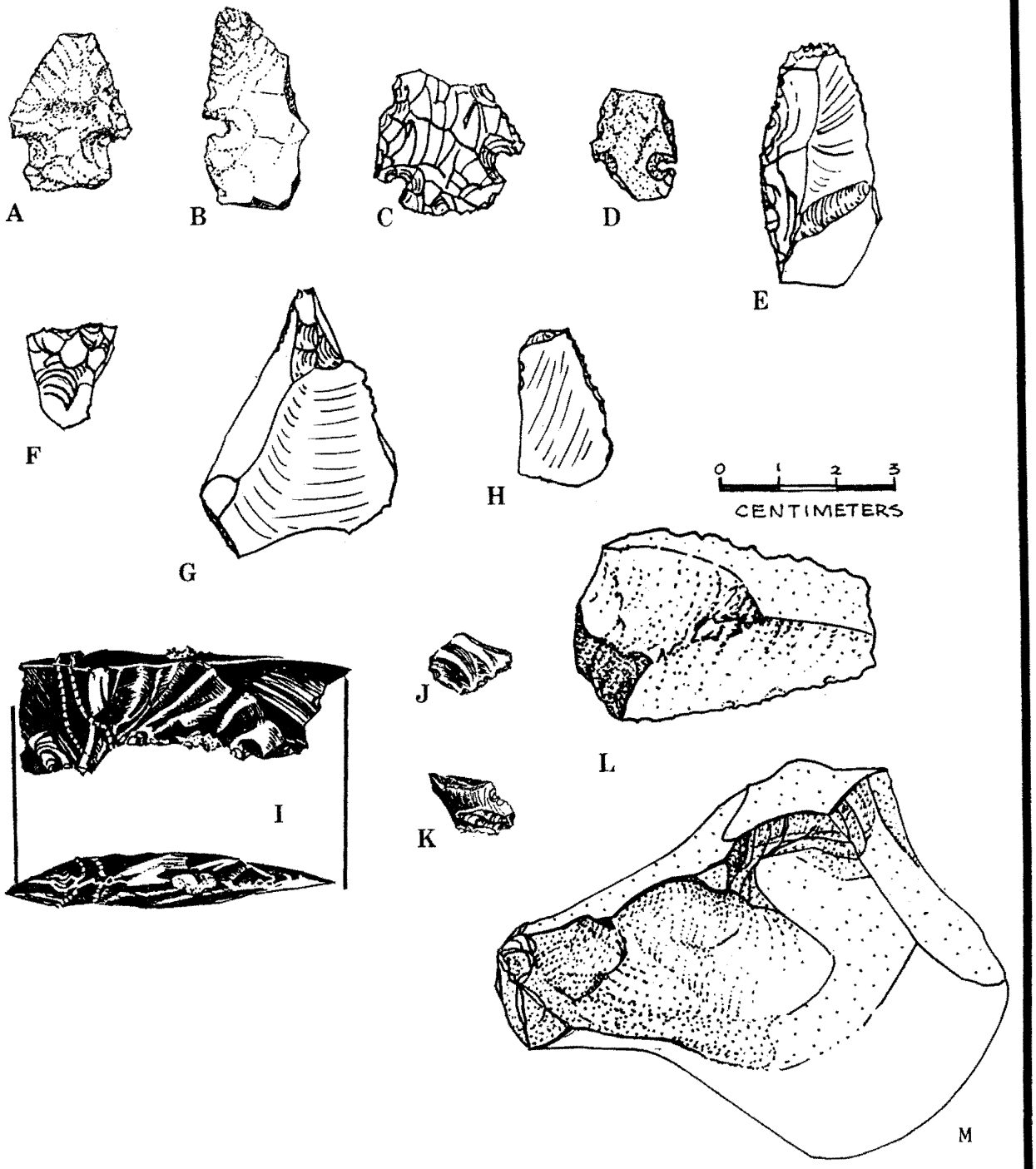


Figure 54: Selected surface and excavated flaked lithics from Component 3, 5DT 271. A= Corner notched projectile point from surface; B= Rejected side notched projectile point or hafted knife from surface; C= Corner notched projectile point or hafted knife; D=Side notched projectile point; E= Unifacial scraper/knife; F =Unifacial knife on resharpening flake; G= Unifacial burin/spoke-shave; H= Unifacial scraper/knife; I= Cochiti obsidian bifacial core utilized as a knife; J= Utilized obsidian flake knive; K= Utilized obsidian flake knive on resharpening flake; L= Denticulate basalt flake knife; M= Basalt core chopper.

Material: Rio Grande Obsidian from Pleistocene Terrace near Cochiti, Southern New Mexico (Appendix VI).
Size: length 5.6 cm; 21 cm wide; .9 cm thick
Type Designation: not known
Cultural Association: not known
Time Frame: not known
Distribution: not known
Comment: This specimen appears to be a multiedged cutting tool. It is simply a utilized irregularly shaped obsidian core with evidence of limited flake removal on two surfaces. It may have been used to produce additional obsidian flake tools found in the Operation 2 area (Figure 54J&K and Table 11/12&13). Portions of this specimen as well as all of the other flake tools believed derived from it were lost by the consulting laboratory where they had been sent for source analysis. (Please see Appendix V for further explanation). This tool is distinctive in that obsidian is very rare in the North Fork area and because of its use as a simple unshaped tool.

The excavated tool assemblage contained one other (Table 11/5) biface. This was a basalt core (Figure 54M) which had been utilized to a very limited extent and evidenced a limited amount of battering on the most pointed portion of the flaked edge.

-Unifacial Tools

In the Component 3 assemblage unifacial tools constituted 35% of the total tool count and 15% of the assemblage. As shown in Table 13, this is a marked increase over both Components 1 and 2. In Component 1, unifaces made up only 20% of the tool assemblage and 10% of the entire assemblage. In Component 2, unifaces made up 25% of the tools and 8% of the assemblage. The increase in unifacial as well as bifacial tools is believed to be due to the decrease in the percentage of utilized flake tools. This in turn may be due to a suspected increase in the visibility of male related activities as obtained in the sampling procedures relative to patterned living areas. As outlined in Table 11, unifaces consisted of about equal percentages of tools related to scraping and cutting functions. The uniface assemblage presented in Tables 11 and 12 and selectively illustrated in Figure 54 is unremarkable except in its percentage role within the assemblage and its implications for sex linked patterning of activity areas.

-Utilized Flake Tools

As shown in Tables 11 and 12, utilized flakes still constitute an important part of the tool assemblage (66%). In Component 1, utilized flakes constituted at least 74% of the tools and in Component 2, the percentage dropped to 55 percent. Triangular flake meat knives are suggested to have been present in both Components 1 and 2 (Figures 33 and 44). These were not, however, noted in Component 3. If we are on the right track in identifying the triangular flake meat knives (Frison 1979), there could be a cultural or temporal implication since they are

believed to be quite obvious among the tools from the other components. As outlined in Table 12, however, acute cutting edges suggestive of knives still appear to constitute a major part of the utilized flake assemblage even though the trianguloid meat knives seem to be absent. Two small flake tools of obsidian were found. Both of these (Figure 54J&K) have acute angles and appear to be knives and could have served in place of the suggestly absent triangular meat knives. Both of these specimens were lost by the lab when sent for source analysis (Montgomery 1987). It is assumed that they are probably also from the Cochiti, New Mexico area as documented for the bifacial knife in Component 3 (Figure 54I). Together with the knife, these two flake tools were the only obsidian found in Component 3. The knife finally had to be sacrificed for source analysis since the flake tools were lost.

GROUND AND PECKED STONE

The Component 3 assemblage contains two simple slab milling stones, one mano, and one pecking/hammerstone.

Slab Millingstone No. 1 (Figure 55A)
From Operation 2C living surface

Material: sandstone
Shape: slab with shallow but well-defined basin and irregular outline. Unmodified shape, fortuitous stone selection? No surface pecking evident.
Size: 55 cm by 25 cm overall; about 10 cm thick
Size of milling surface: 40 by 20 cm
Typology and Distribution: appears similar to others described from West-Central Colorado by Buckles (1971:490-492)

Slab Millingstone No. 2 (Figure 55B)
From Operation 2K living surface within 2 meters of Stone No. 1

Material: sandstone
Shape: slab with shallow basin and tabular irregular outline. Unmodified shape, fortuitous stone selection? No surface pecking evident.
Size: 40 cm by 30 cm; about 10 cm thick
Size of milling surface: 25 cm by 15 cm
Typology and Distribution: appears similar to others described from West-Central Colorado by Buckles (1971:490-492)
Comments: When compared to Stone No. 1 which was found adjacent to it, the milling surface on this stone suggests it was subjected to less use.

Mano (Figure 55C)
From random sample Unit 283, Level 4

Material: hard metamorphic stone cobble
Shape: ovoid
Size: 12 cm long by 9 cm wide; 4 cm thick maximum

FIGURE 55

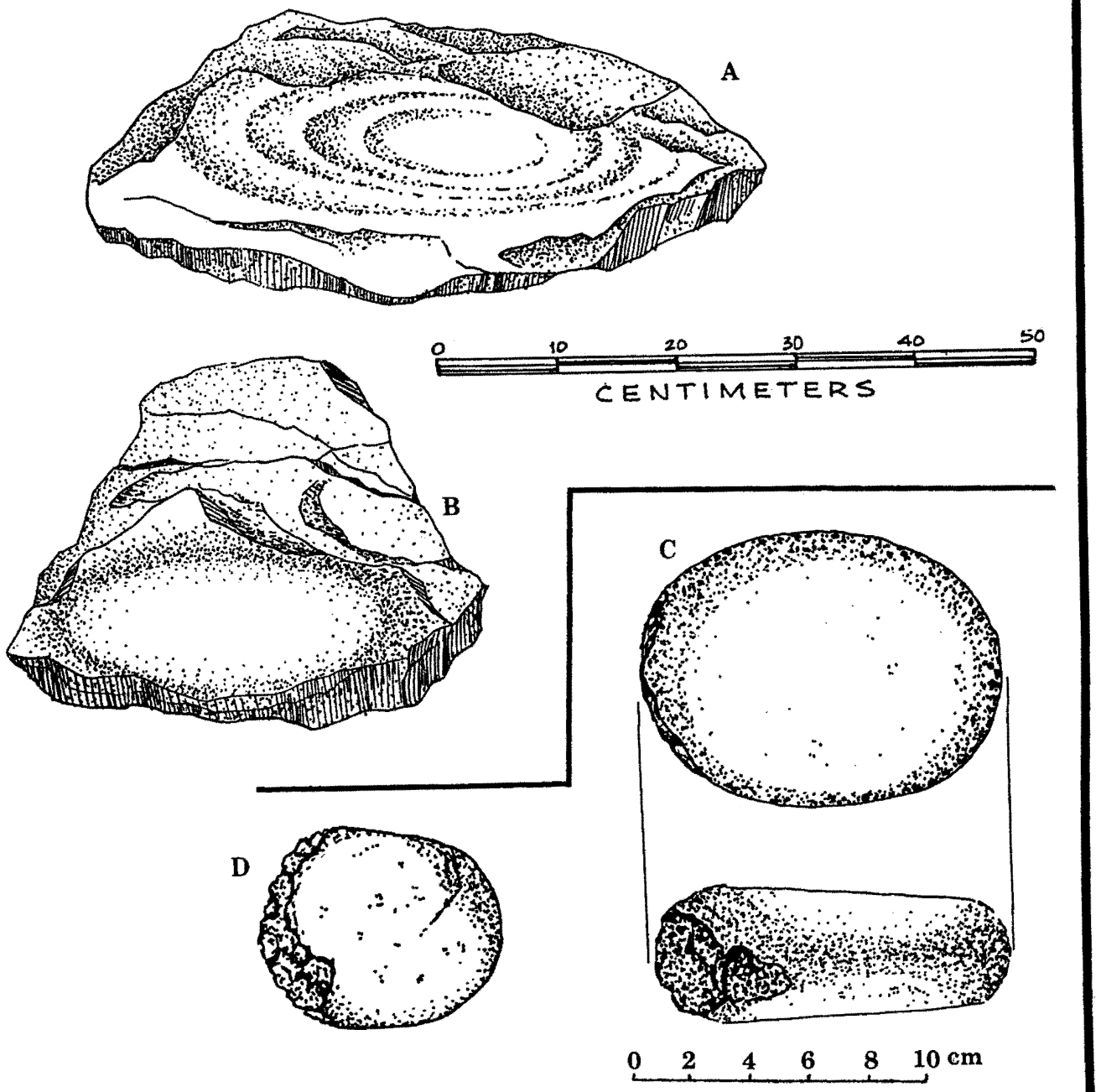


Figure 55: Ground and pecked stone tools excavated from Component 3, 5 DT 271. A= Sandstone slab millingstone from Op. 2C living surface; B= Sandstone slab millingstone from Op. 2K living surface; C= Double surface mano/pecking stone; D= Pecking stone from Operation 2 feature area.

Working surfaces: Both surfaces of this stone show some use. The upper surface shows pitting which suggests it may have served as a pecking stone as well as a mano. The bottom surface is well smoothed by use in grinding. Both ends evidence limited battering and one end is partially broken off.
Typology: No particular type but is believed to be widely distributed. Similar to Buckles Type 2 (Buckles 1971:466).

Pecking/Hammerstone (Figure 55D)
From Operation 2 excavation area back dirt

Material: metamorphic stone cobble
Shape: roughly ovoid
Size: 8 cm long by 6.5 cm wide; 3 cm thick
Evidence of Use: A high degree of deformation from battering is evident on one end. All other surfaces of stone are highly polished, apparently from water smoothing. There is a suggestion that this stone has been further polished on one surface through extensive rubbing, such as in hide working or in ceramic production. It does not evidence actual wear as in a mano. Further comment on this surface polish must await more analysis.
Typology and Distribution: none known
Comments: This stone may be part of a butchering or hide working kit?

Irwin-Williams suggests that shallow basin grinding slabs and simple hand stones made on cobbles were added to the artifact assemblage of the Oshara Tradition during the San Jose Phase, beginning ca. 3,000 B.C. She indicates that pounding stones were also common after this time (Irwin-Williams 1973:8). Overall, the ground stone assemblage is believed typical of late Archaic early Basketmaker assemblages.

Interpretive Summary

It is difficult and probably rather unwise to attempt too much interpretation of Component 3 due to its eroded and near surface nature and its poor radiocarbon date. We are, however, dealing with a component which was occupied within a few hundred years of the time of Christ and at a two sigma basis (or 95% confidence level), probably within the period A.D. 10 ± 820 years. While it is conceivable that the occupation is contemporary with or even post-dates that at Component 2, the author is generally comfortable with the basic date of A.D. 10 ± 410 (Beta 18840). All of the cultural materials, with the exception of the side-notched arrowpoint, comfortably fit within that general time frame as discussed by Irwin-Williams (1973). As a generalized late Archaic or early Basketmaker occupation, the assemblage is believed typical of those reported from other areas of West-Central Colorado. Jones has recently reported on considerably earlier Archaic-like occupations from the Blue Mesa Lake vicinity on the North Fork of the Gunnison River. There he found projectile points suggestive of the San Jose Phase of the

TABLE 12: Summary of Flaked Lithics from Component 3, 5DT271; Surface and Excavated Contexts

Tool Class	Surface	Excavated	Totals	
Bifaces				
- Projectile Points Knives or Preforms	6	4	10	
- Choppers	1	1	2	
Total				12
Unifacial Tools				
- Knives	2	2	4	
- Scrapers	1	1	2	
- Burin/Spokeshaves	0	2	2	
- Scraper/Knives	2	2	4	
- Spokeshave/Scrapers	1	0	1	
Total				13
Utilized Flake Tools				
- Knives	8	4	14	
- Scrapers	8	0	8	
- Scraper/Knives	2	0	2	
- Spokeshaves	1	0	1	
Total				25
Total Artifacts	63	23	86	
Total Tool Count	32	15	38	
Total Unutilized Debitage	31	8	48	

Bifaces to total assemblage = 14%
Unifaces to total assemblage = 15%
Utilized flakes to total assemblage = 29%
Utilized flakes to total tool count = 66%
Unifaces to total tool count = 35%
Bifaces to total tool count = 32%

Unutilized debitage to total assemblage = 56% or less
Tools of all classes to total assemblage = 44% or more

Oshara Tradition (Jones 1987:43) as it may have developed out of a varient of the Picosa Culture (Irwin-Williams 1967). Horn, Reed and McDonald (1987:132-139) point out the lack of a tenable phase sequence for the Archaic Stage of West-Central Colorado. In making this statement they acknowledge their unwillingness to rely on the phase sequence offered by Buckles (1971). They do acknowledge how in a general way the Archaic assemblage from the Indian Creek site appears similar to that of the Uncompahgre Complex (Buckles 1971). In a similar manner they emphasize how even Irwin-William's Oshara Tradition (1973) phase sequence requires more complete description.

Due to the lack of a reliable phase sequence for the Archaic Stage in West-Central Colorado, Horn and his colleagues (Horn, Reed and McDonald 1987) suggest dividing the Archaic into three basic periods and suggests date ranges for each. These are:

Archaic Stage Periods

Early Period	5,550 - 3,550 B.C.
Middle Period	3,500 - 2,050 B.C.
Late Period	2,050 B.C. - A.D. 450

Within this sequence, Horn and his colleagues suggest departing from reference to the Uncompahgre Complex (Wormington and Lister 1956; Buckles 1971) and begin to refer to a more generalized "Uncompahgre Technocomplex" as advocated by Reed (1984) and Gooding and Shields (1985). This seems like an excellent idea, at least until more data are accumulated for this region. A Late Archaic Period in the Uncompahgre Technocomplex is a safe interpretation for Component 3.

In addition to the previously mentioned views on the Archaic Stage as it may relate to West-Central Colorado, is Schroedl's work (1976, 1980) in which he proposes a four phase sequence for the Archaic Tradition of the Northern Colorado Plateau ca. 6300 B.C. to A.D. 400. This sequence culminates within the Dirty Devil Phase ca. 1350 B.C. to A.D. 450. Schroedl (1976) places regional sites such as the Cottonwood, Tabaguache, and Dolores Caves within the Dirty Devil Phase. The phase is hallmarked by Elko series points and later arrow points and contains evidence of reliance on corn and use of the bow and arrow (Schroedl 1976:68-73). It is important to note Schroedl's statement:

> The introduction of the bow and arrow may be taken as convenient markers for the end of the Dirty Devil Phase. There appears, however, to be no other distinctive changes in the cultural assemblages around 1500 B.P. Many artifact traits, including the Gypsum point, appear to continue through time and are found in Fremont sites. The Archaic-Fremont continuity poses a question concerning the origin of the material traits of the Fremont culture.
>
> (Schroedl 1976:73)

Schroedl goes on to suggest that Steward's (1933) early suggestion that the Fremont cultures had their origins in Western Colorado and

extreme Eastern Utah may have merit. He suggests the continuity evident between the terminal Archaic Dirty Devil Phase artifact assemblage and those of the early Fremont sites "are too great to be coincidental." He directly attributes the origin of Fremont culture to the Archaic of eastern and Southeastern Utah. This also takes in West-Central Colorado (Schroedl 1976:72-77). Schroedl also emphasizes that care should be taken to not rely on the Southwestern chronologies as it involves Basketmaker through Anasazi Periods in this region.

In light of the unsettled nature of regional archaeological studies and the lack of any unified efforts to understand it, there is really no larger framework within which to interpret Component 3. It certainly falls within the general time frame of Horn, Reed and McDonald's (1987) Late Period of the Archaic Stage. It is also within the Archaic Dirty Devil Phase of Schroedl (1976) as it may have eventually become Fremont. Irwin-Williams (1973), however, remains the only archaeologist to attempt to synthesize the attributes of the Archaic into a useful interpretive scheme relative to the area. It is possible to rely upon her synthesis without implying overt cultural connections to the greater Southwest. Within her scheme, Component 3 would fall into the En Medio and/or Trujillo Phases of the Oshara Tradition. The En Medio (800 B.C. to A.D. 400) included the earliest recognizable Anasazi-Pueblo materials as embodied in the generalized Basketmaker II assemblage. During the Trujillo Phase ceramics and the bow and arrow are thought to have been introduced but the basic economic system and social structure do not appear to have changed. Thus, during both the En Medio and Trujillo Phases much of the Oshara Tradition attributes remained constant. At Component 3, the exact Phase sequence does not seem to be of too critical concern because we are not dealing with questions of architecture, ceramics or early arrow point styles.

During the En Medio and Trujillo Phases, Irwin-Williams proposes a continued growth of regional population which reached its maximum in the first centuries A.D. This was accompanied by a marked increase in archaeological sites. The tool kit of the En Medio Phase shows much continuity with the preceeding Armijo Phase, although an increase in emphasis was placed on stone tools. Lithic production was improved and projectile points show a variety of stemmed corner-notched forms. Overall the assemblages from Basketmaker II sites from Southwestern Colorado parallel En Medio Phase sites in numerous ways (Irwin-Williams 1973:12-13).

The En Medio and Trujillo Phases indicates "a very strongly seasonal annual economic cycle." This is attributed to continued population increases which may have forced the budding or hiving-off of small groups. Irwin-Williams has made an important point in this regard and one that must be discussed in light of the local West-Central archaeological situation. At the Indian Creek Site (5ME1373) near Grand Mesa, most occupations dated ca. 3,790 - 2,000 B.P. or 1,840 B.C. - A.D. 50. This was seen in a large number of occupations by smaller groups (Horn, Reed and McDonald 1987:32, 139). Likewise, at 5ME4959 investigators noted a period of heavy occupation from ca. 100 B.C. to A.D. 600 and interpreted them as either a cluster of simultaneous usages or a series of short term occupations. This evidence led the

investigators to suggest that the period around the time of Christ may have been locally important in terms of population pressure (Nickens and Associates 1986:94-95). Jone's work at Blue Mesa Lake on the Lake Fork of the Gunnison also lead him to suggest that a time of more intense regional occupation occurred during the period 6,700 - 5,200 B.P. (4,750 - 3,250 B.C.) during the Altithermal Period (Jones 1987). Although Jones sees a much earlier period of intensive occupation, the simple idea of population hiatuses and resultant occupational densities may have much merit. The evidence for such a local hiatus about the time of Christ as pointed out by Nickens and Associates (1986:94-95) is at the same time as postulated by Irwin-Williams (1973) for the En Medio and Trujillo Phases as they may relate to the local scenario of Basketmaker populations. It is suggested that Component 3 may well represent an occupation resulting from increasing population pressures which may have forced a wider spread and more intensive settlement of micro-habitat. Irwin-Williams documented this in the Arroyo Cuervo Region of Northwestern New Mexico and it may be an important consideration in West-Central Colorado as well. It is suggested that further testing of this general idea regarding an increase and/or dispersal of populations during this time period should help to guide local archaeological studies.

The En Medio and Trujillo Phase witnessed development of a new pattern of micro-habitat exploitation that lead to utilization of additional environmental areas via "a very large number of what are considered seasonal sites." Sites are small, between 25 and 15 square meters. Refuse is thin and sparse. Features generally include numerous large shallow storage pits, fire-cracked cobble concentrations, patterned refuse work areas and possible indications of very simple shelters. In the Arroyo Cuervo Region these specialized seasonal sites tend to be situated on dune ridges. The assemblages are dominated by grinding tools and utilized flake cutting tools. Projectile points, choppers and knives are rare or absent. Chenopods, grass seeds and cactus fruit and joints are evident in food remains. The sites suggest the presence of a dispersed mobile population concerned with gathering and processing the specific seasonal plant products available on the dune ridges as part of a very strongly seasonal economic cycle. Irwin-Williams very specifically indicates that similarities exist between this pattern and that of surrounding regions, including the Rio Grande River Valley in northern New Mexico. She particularly mentions similarities for the Armijo Phase of the Oshara for Southwestern and South-Central Colorado (Irwin-Williams 1973:11, 13-15). With some allowance for regional environmental differences, Irwin-William's description of the specialized seasonal sites of the En Medio and Trujillo Phases constitutes the best overall comparative descriptions for Component 3 at 5DT271.

At Component 3, there is a comparatively strong dependence on processing of plant foods as evident in the adjacent milling stones. The variety and abundance of lithic materials is the greatest of all three components. This includes Rio Grande obsidian from Cochiti, New Mexico which suggests at least some connections with groups or regions to the south. There is some patterning in work areas in the plan of the component (Figure 56). Flake cutting tools are conspicuous and

projectile points and other shaped bifacial tools are present but scarce (Table 12). There was probably a structure and there is clearly a fire-cracked cobble concentration, such as characterized the En Medio and Trujillo Phases and which Irwin-Williams suggests were introduced during the Bajada Phase ca. 4800 B.C. to 3200 B.C. (1973:146). The limited diagnostic potentials in the projectile points indicate that both the surface and excavated materials are all consistent within a generalized Armijo/En Medio Complex. This is with the exception of a Bear River/ Nawthis style side-notched point which is from a suspect provenience, suggesting it is either intrusive or that the date range assigned to it may need to be reviewed. It is currently suggested (Holmer and Weder) that such points date ca. A.D. 800 to 1200 or 1300. At Component 3, we could very easily be looking at an occupation date as late as A.D. 600+ for the end of the Trujillo Phase as attributed to it by Irwin-Williams nearly 20 years ago (1973:12). The assemblage at this particular site could very easily date after that date without seeing much evidence in the material assemblage. At Arroyo Cuervo, the Sky Village Phase, which succeeds the Trujillo, lasted from ca. A.D. 600-700 and saw a carryover of many aspects of the old assemblage with most of the changes in ceramics and architecture. Component 3 may conceivably date this late and the presence of a side-notched arrow point cannot automatically be determined incompatible with the rest of the component. This is particularly so in light of the lack of good archaeological data for the area and the fact that we could be dealing with the area in which the Fremont Tradition developed (Schroedl 1976). It is sufficient to say that the point may belong within the assemblage.

Only a limited amount of paleoenvironmental data were recovered from Component 3. The pollen record indicated that the environment may have been warmer and possibly drier than present and that the vegetation was more open. Oak thickets were not as dense and pine and juniper were more scattered. Sagebrush appears to have been dominant locally. Pollen from a sample taken beneath a milling stone in the Operation 2 feature area yielded a high frequency of Cheno-am pollen which suggests that Cheno-am seeds were ground on the stone (Scott 1987). Only one unidentifiable faunal remain was recovered from Component 3 (Rood 1987).

In summary, Component 3 is viewed as a specialized seasonal occupation from late in the Archaic Stage or early in the Formative Stage. It is probably best regarded as representing the Uncompahgre Technocomplex (Reed 1984) as it may be representative of 1) the Archaic of the northern Colorado Plateau (Schroedl 1976) where it would lie at the interface of the Dirty Devil Phase and the Fremont; or 2) the Oshara Tradition's (Irwin-Williams 1973) En Medio and Trujillo Phases.

FIGURE 56

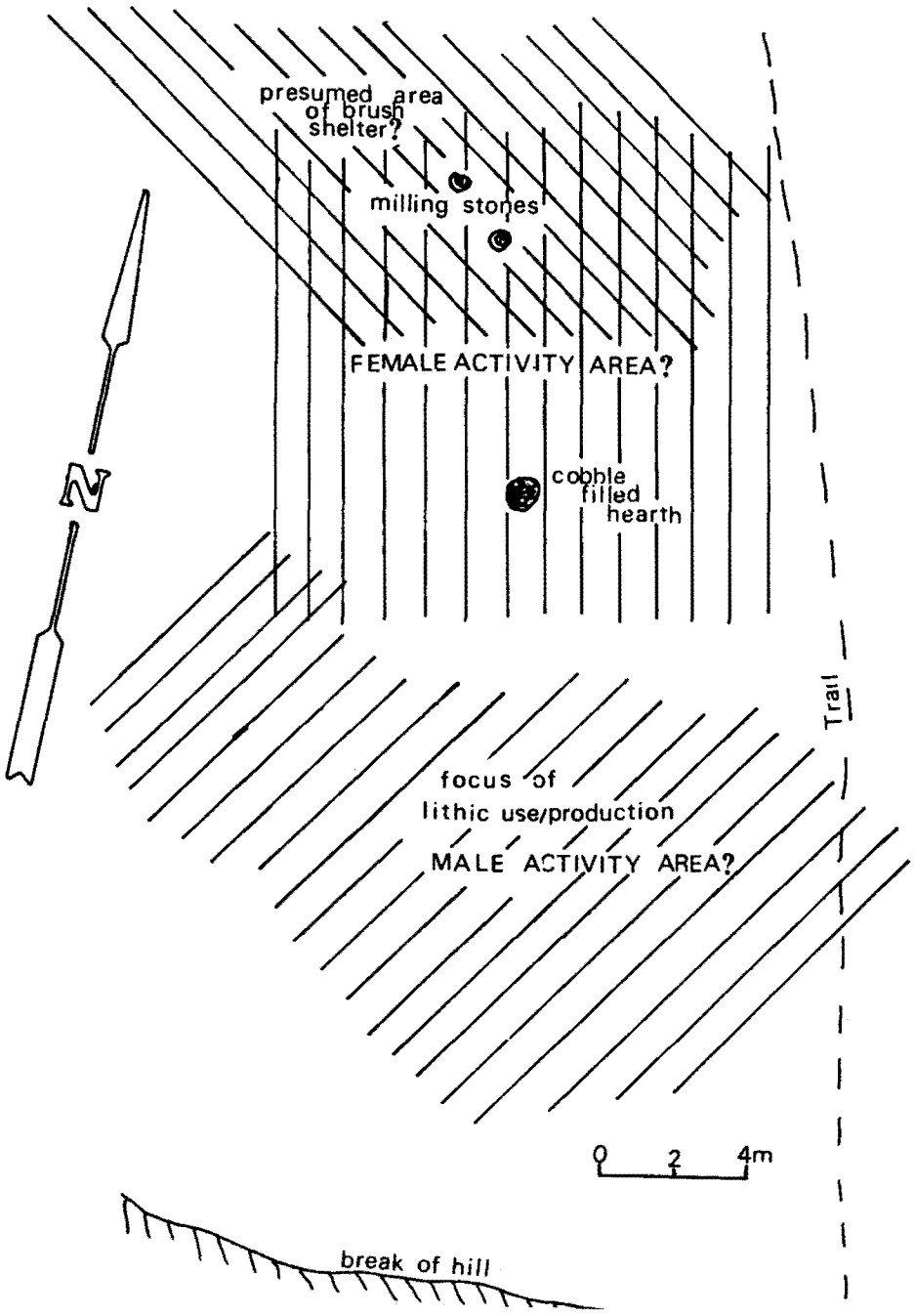


Figure 56:

The Roatcap Gametrail Site (5Dt271)
-Interpretive Plan for Ephemeral Component No. 3, ca. A.D. 10.
-Preliminary Interpretation Designed to be Used as a Model for Further Testing.

CHAPTER 7

DATA SYNTHESIS AND INTEGRATION WITH RESEARCH DESIGN

The research design which guided the cultural resource studies for the Orchard Valley Mine emphasized acquisition and synthesis of quite basic information on the local prehistory. For several years this effort was limited to a simple quest for resources in an area where virtually none had been found previously. After 1984 the resource base expanded enough to allow for wringing some contribution from the ephemeral resources of the project area. The 1986 excavation program provided the first opportunity to obtain any data that could be used to address the most elementary regional research concerns. Prior to 1986 there had not been any test excavations at the seven sites then known to exist in the study area. The entire aboriginal material culture assemblage from the area at that time could easily be held in the palm of one hand. This was with the exception of the undiagnostic lithic collection made by archaeological associates at 5DT271 as presented in Table 6 (Hibbets et. al. 1979). As outlined by Reed (1984), prominent regional research concerns which needed to be addressed included: 1) a dearth of excavation data; 2) cultural chronology; 3) settlement patterns; 4) cultural processes; 5) demography; and 6) site significance. Any contribution to these fundamental concerns were then sorely needed in this region and probably would be for many years to come. As outlined in Chapter 1, the research design for the CWI studies has focused on these elementary concerns in a response to the lack of information acknowledged by archaeologists who had written on the subject (Buckles 1971; Reed 1984; Reed and Scott 1980; Baker 1978b; Hibbets et. al. 1979).

The work on behalf of CWI has produced solid excavation data for ephemeral aspects of the Formative Stage and Historic Ute occupations of West-Central Colorado. The work expands our knowledge beyond the Archaic which chance seems to have associated with most of the regional excavation data obtained to date. It is possible to now consider some of the other basic concerns as they primarily relate to the Formative Stage and Historic Ute occupations of the Grand Mesa vicinity.

Settlement Systems on Grand Mesa

-Site Types

Within the CWI study area the nine confirmed aboriginal sites thus far recorded are all open sites evidencing an obvious lack of complexity. There are no indications of the long occupational sequences which so often characterize the sites which are usually investigated at any substantial level. Such a site was, however, recently reported to the author and is said to be deeply buried in the floodplain of the North Fork Valley near the mouth of Roatcap Creek (Bruce 1987). The regional archaeological literature is replete with such examples from caves and rock shelters in particular. As discussed in this report, the resources, as best understood from 5DT271, consist of limited seasonal occupations by households believed to have been made up of individual families. The nuclear family was the primary economic unit

of the Desert West's hunting and gathering societies. As a basic proposition, the open sites in the study area are believed to be derived from such ephemeral family households. Discussion of the settlement system is subsequently rooted in this proposition and in the idea that these households were part of larger kin-based systems as they are best understood ethnographically in this region in reference to the Ute People. Ute kin units or demes "were mobile exogamous year round residence groups composed of several families that were usually related through the matriline and resided matrilocally" (Callaway, Janetski and Stewart 1986:353; also see Shapiro 1986 or Steward 1938). Mobile Ute demes, in all probability, were responsible for historic settlement systems on Grand Mesa. Similar kin-based groups were also probably responsible for the settlement systems in earlier times as well. Both survey and excavation in the CWI study area and the Uncompahgre Plateau (Buckles 1971) indicated sites and/or components focused about individual households where the focus of activities emphasized the role of women. These are believed to be represented in wickiup-like structures, milling stones, and hearths.

When dealing with ephemeral sites in the Colorado mountains, archaeologists frequently employ the term "base camp" in their writings (as example, Gooding 1981; Jones 1986; Hibbets et. al. 1979). There are, however, usually few, if any, comments ventured as to the meaning of this term within models of settlement systems as Chang, for instance, has considered the concept:

> An archaeological settlement is the physical locale or cluster of locales where the members of a community lived, ensured their subsistence, and pursued their social functions in a delineable time period. (Chang 1968:3)

The "Base Camp" Terminology Problem

Binford (1980) has presented a most thoughtful and often-cited discussion of hunter-gatherer settlement systems in which he differentiates an ordering of site types. These begin with the "residential base" and go on through "location", "field camp", "station" and "cache." While a detailed consideration of site types within models such as Binford's is beyond both the scope and intent of this discussion, it is quite germane to ask what the commonly-referenced term "base camp" means in terms of this model and how the sites within the CWI study area may relate to it. In Binford's model, the primary residental location, to which people repeatedly return, is the "residential base", whether the society is considered forager or collector. The "residential base" is "the hub of subsistence activities, the locus out of which foraging parties originate and where most processing, manufacturing, and maintenance activities take place." Binford goes on to characterize the residential base in contrast to the "location." He describes the latter for foragers as a place "where extractive tasks are exclusively carried out." These are short-term occupations where only limited foods or other materials are procured during any one episode. These are the site types Binford recognizes for foragers. For collectors, which have task groups seeking to procure specific resources in specific contexts, Binford recognizes the field camp, the station and the cache.

> A field camp is a temporary operational center for a task group. It is where a task group sleeps, eats, and otherwise maintains itself while away from the residential base. Field camps may be expected to be further differentiated according to the target resources, so we may expect sheep - hunting field camps, caribou - hunting field camps, fishing field camps, etc. (Binford 1980:10)

The generalized use of the term "base camp" in its implication as either a "residential base" or a "field camp" is not clear in its use by Hibbets and his colleagues (Hibbets et. al. 1979), Jones (1986) and Gooding (1981) and many others for occupations that are pretty clearly seasonal yet probably substantial ones often lasting from at least late summer through the fall. For West-Central Colorado, no one has convincingly demonstrated any form of residential bases other than the warm season ones. This concept is critical in Irwin-Williams discussion of the Oshara Tradition (1973) and its implications for the development of the Anasazi. In a similar fashion, it drives to the heart of the Fremont and leads full circle to the early work at the substantial habitation sites of the region as considered by Wormington (1955), Crane (1978), Hurst (1946, 1948) and the Huschers (1943). Until more critical presentations of the idea of "base camp" are offered in relation to broader models of settlement systems, it seems unwise to apply the term to the small open lithic scatters along the mountain drainages of West-Central Colorado. The term seems to imply a certain permanence of occupation.

At first glance, it might appear that many, if not most, of the reported open sites along the drainages of the flanks of Grand Mesa and other mountaineous areas are seasonal occupations that represent "field camps" as defined by Binford (1980:10). According to Kvamme's model (Kvamme and Black 1986) they seem to represent a cross between "short-term camps" of the multiple activity site class and "tool kit sites" of the Special Activity Site Class. Too few sites have been sampled in CWI's project area for formal application of Kvamme's site typology system. Ethnographic data do, however, support a view that, for the Ute occupation of the area at least, the sites served as seasonal habitation and operational centers directed to a wide variety of collecting tasks. The sites were based on an individual nuclear household centered around wickiups in deme clusters. The regional winter and spring residence patterns have not yet been demonstrated archaeologically and there is as yet limited, if any, evidence of permanent residential bases to which people routinely returned.

Contrasting Models of Seasonal and Permanent Residential Bases

Peterson, using Powell's "grand circuit" idea (Fowler and Fowler 1971) and Goss's "fixing [of] the center of the earth" on a mountain (Goss 1972), has implied that there may have been no actual base camps or permanent "residential bases" in the historic Ute territory of West-Central Colorado. In this regard, a new term, "seasonal residential bases", is believed to be appropriate in specific reference to the historic Utes. The introduction of the horse certainly has strong implications for skewing any ethnographic analogy through time

for the Utes, but the idea is still important. It is herein suggested that the Ute occupation pattern on the flanks of Grand Mesa probably reflected clusters of family households for part of the summer and fall months and that these households were, in effect, the bases from which all operations of the family for that period of time emanated. The degree to which this pattern may have extended into prehistory is not known but there are good reasons to suspect that they may have some time depth. There is no evidence for any permanent winter residential bases among the Utes. All of the available information suggests that they operated out of temporary seasonal residential bases much in the manner of the sterotypical "seasonal round." The term "seasonal residential bases" is herein suggested to represent the primary elements in this type of system.

In contrast to the "seasonal residential base" concept, Irwin-Williams has suggested a strong seasonal dispersal pattern from more permanent base camps for the En Medio and Trujillo Phases of the Oshara Tradition and this could have seen family households in residence for a few months of the year in the deep mountains (Irwin-Williams 1973). If there are some form of permanent winter residential base camps in West-Central Colorado (such as suggested Irwin-Williams as part of the regional settlement system), this fact must be demonstrated. Such inquiry, however, will plunge investigators directly back into the heart of the regional debate over Anasazi and/or Fremont associations, particularly in regard to masonry structural sites. The points made in Kathy Crane's salient article are very important in this regard (Crane 1978).

Crane suggests a Formative Stage settlement system and subsistence model for the San Miguel drainage. This system focused on a year-round occupation of single family rock structures, or at least occupation from late fall through late spring with frequent hunting and gathering trips away from this residential base. These trips are suggested to have resulted in the formation of secondary sites, including temporary campsites, perhaps like the Roatcap Game Trail Site, away from the permanent residential base camps to which people always returned. Crane suggests strong Fremont associations for the Weimer Ranch Site which was occupied from ca. A.D. 700 to 1150. The Weimer Ranch model is similar to that which Binford (1980:10) proposes for collectors. In this regard the idea of base camps and field camps seems to be very appropriate. The model would appear to be quite applicable and testable for the Formative Stage in most of West-Central Colorado. The test of its validity would appear to simply involve showing general contemporaniety and seasonality of occupations between structural sites similar to Weimer Ranch or the Huscher's (1943) hogan sites and well dated ephemeral components in the same general vicinity, such as Component 2 at 5DT271. It will be necessary to attempt tight comparative lithic studies to help in establishing cultural associations in the probable absence of ceramics at the field camp sites.

As previously discussed, a different settlement model may have to be further developed and applied for the Ute people. This presumes that they are not long-standing residents of the area and are not responsible for the region's structural sites such as Weimer Ranch.

This has not yet, however, been demonstrated. An alternate explanation is that the availability of the horse and other new influences of the early 18th Century led these people to abandon any sedentary tendencies which they may once have had. It must be remembered that in 1776, Escalante hinted at Ute-associated stone structures on the Uncompahgre Plateau as well as some in Utah (Chavez and Warner 1976:21,28; Bolton 1950:37,41,154). This reference to Ute-associated stone structural sites is not intended to imply that the Utes were responsible for or utilized such sites. It does imply that we can't say for certain that they were not. Nor can we say that the historically documented Ute seasonal round concept with its suggestion that there may have been no permanent winter residential bases, reflects a pre-Contact Ute pattern (Goss 1972; Peterson 1977). The historic Ute pattern suggested by Peterson could well have developed after arrival of the horse. In fact, the suggested distance involved in the seasonal round did imply this (Peterson 1977). We can provisionally apply Peterson's model to historic Ute occupations such as Component 1 at 5DT271 within the settlement system proposed herein. In doing so, the central consideration is that there are really no permanent residential bases. Wherever the individual household unit resides at any one time was the residential base. The site may appear to be a field camp, which it in fact was, but it was also the only residential base. Except for very temporary special activity sites, these households were the base of all operations. No more, no less than the place where they lived during the winter months unless they did consistently return to permanent winter residences. If so, where were they? If we attempt to imply that these individual seasonal households are secondary to some more permanent bases, we are right back into the region's stone structural site issue.

The concept of true residential base camps as considered by Binford (1980) and suggested locally by Crane (1978) is also in question in regard to pre-Formative Stage occupations of the area. Nearly all of the very few early sites reported on are interpreted as seasonal warm weather occupations that are frequently and uncritically termed base camps. In this temporary context, we still have the problem of demonstrating either true permanent residential bases or short-term seasonal winter occupations. One or the other has to be demonstrated or else many site interpretations regarding summer and fall occupations are wrong. People have to live somewhere and Crane (1978) has provided some of the only regional evidence of winter month occupations. Metcalf and Black (1991) have recently demonstrated such a feature for the Early Archaic Stage in the Colorado Mountains and have helped fill some of the gaps in our knowledge as outlined in Table 14.

In discussing the Oshara Tradition's Jay Phase in the Arroyo Cuervo region, Irwin-Williams (1973) refers to scattered chipping areas and isolated point finds which she feels reflect limited brief special activities by "groups attached to bases at the canyon heads" (1974:5). Other special activity sites include isolated hunting camps and quarry workshop camps. The canyon head or "base" site groups show no functional differentiation and "all seem to represent a full range of activities and seasons." These are apparently Binford's "residential

TABLE 13: Summary of Flaked Lithics from 5DT771 and 5DT271, Components 1, 2 and 3

Tool Class	5DT771	5DT271 Component 1	5DT271 Component 2	5DT271 Component 3	5DT271 All Components	Totals
Bifaces						
-Projectile Points, Knives or Preforms	2	1	4	10	(15)	17
-Choppers	0	0	0	2	(2)	2
-Other	0	0	2	0	0	
TOTAL	2	1	6	12	(19)	21
Unifacial Tools						
-Knives	4	0	0	5	(5)	9
-Scrapers	2	0	2	2	(4)	6
-Burin/Spokeshaves	0	0	0	2	(2)	2
-Scraper/Knives	0	0	2	4	(6)	6
-Spokeshaves/Scrapers	0	0	1	1	(2)	2
-Other	0	2	1			
TOTAL	6	2	6	14	(22)	28
Utilized Flake Tools						
-Knives	9	5	7	13	(25)	34
-Scrapers	0	1	4	8	(13)	13
-Scraper/Knives	1	2	1	2	(5)	6
-Spokeshaves	0	0	1	1	(2)	2
-Uncertain	1	0	0	0	(0)	1
TOTAL	11	8	13	24	(45)	56
TOTAL ARTIFACTS	19	22	74	86	(182)	201
TOTAL TOOL COUNT	18 (or 19)	11	25	38	(74)	92
TOTAL UNUTILIZED DEBITAGE	1(?) maximum	11 maximum	49 maximum	48 maximum	(108)	109
Bifaces to total site assemblage	10%	5%	8%	14%	10%	
Bifaces to total site tool count	12%	9%	24%	32%	26%	
Unifaces to total site assemblage	32%	9%	8%	15%	12%	
Unifaces to total site tool count	33%	18%	24%	35%	30%	
Utilized flakes to total site assemblage	58%	37%	18%	29%	25%	
Utilized flakes to total site tool count	58%+	74%	55%	66%	45%	
Unutilized debitage to total site assemblage	45%?	50%	68%	56%	59%	
Tools of all classes to total site assemblage	55%	50%	32%	44%	41%	

bases." In discussing the Picosa culture which she believes gave rise to the Oshara Tradition, Irwin-Williams (1967) sees an early tendency toward formations of more permanent sites in protected localities which were evidently winter occupations. These would be the residential bases as opposed to the high summer camps. While far from clear on the issue, Irwin-Williams seems to be distinguishing between the canyon head year-round base camps and seasonal field camps. It is important that we again not terminologically confuse winter camp residential bases such as those of the Arroyo Cuervo area with high-altitude seasonal residential bases. Many of these sites most likely are seasonal "field camps" associated with currently unidentified "residential bases" as defined by Binford (1980). It is important to mention the Archaic pit houses recently excavated at the Kew Claw Site on Battlement Mesa in Garfield County just northeast of Grand Mesa (Cassells 1983:82) and near State Bridge in Eagle County (Metcalf and Black 1991). These show promise of being true residential bases occupied during the winter. If they are not, then again the question of where people wintered must be raised. This is particularly critical if it can be shown that people didn't winter in their pit houses and that these structures were only seasonal sites. If people didn't winter in them, where did they go? Woodbury and Zubrow (1979) suggest that the BMII period ca. 100 B.C. to A.D. 400 witnessed long summer hunting and collecting trips by at least some of the occupants of Talus Village near Durango (Morris and Burgh 1954). Establishing residence in high mountain households for a substantial part of the year would appear to be a compatible means of establishing a mountain base from which to carry out a series of collecting and hunting activities. This annual dispersed pattern is also indicated by Cordell (1979) as well as Crane (1978). These are not, however, necessarily very short-term limited forays. All available evidence argues for prolonged seasonal occupations away from the winter camps.

The foregoing discussion is admittedly tedious and difficult but it is believed to be important. If we are going to label a site as part of a settlement system we must try to account for that whole system. The propositions which come to the author from this review are summarized in Table 14. It is suggested that regional archaeology is overlooking much of the resource base and too readily dismissing the pioneering work of the Huschers (Huscher and Huscher 1943) which dealt with a core element of the regional resource base. This has not been seriously reevaluated in nearly 50 years. It is, nevertheless, believed to be critical to any understanding of the regional archaeology.

- Site Locations

The various surveys undertaken for CWI together constitute a wide transect of a portion of the southeast flank of Grand Mesa. As diagrammed in Figure 57, this transect while somewhat irregular, was about five miles wide by four long and extended in elevation from 6,800 feet to about 8,200 feet in the elevation of stream beds as opposed to topographic relief. It is important to make this distinction due to the extremely irregular and rugged topography. While the topography varied from about 6,400 feet to over 9,000 feet, the general fall of

TABLE 14: Summary of Proposed Basic Settlement System Components for the Aboriginal Occupations of Grand Mesa

Component	Cultural Position	Core Settlement Type Represented	Predicted Missing/ Undemonstrated Core Component In Regional Settlement System
5DT271 #1	Historic Ute	Warm Season Residential Base	Cold Season Residential Base
Hypothetical	Late Prehistoric Ute	None	All seasonal bases, permanent residential base(?) (stone structures?)
5DT271 #2	Formative Stage	Warm Season Residential Base	Permanent winter residential base (pit houses or stone structures?)
5DT271 #3	Late Archaic/ Early Formative	Warm Season Residential Base	Permanent winter residential base (pit houses?)

the streams in the four mile transect was roughly half that of the elevational differences of the overall topography. This distinction is relevant in that the reader should not be confused by the great relief and compare the elevation of the transect to generalized views of more uniform mountain slopes where there may be crisp textbook correlation among environmental zones and elevational differences. In this case, we are dealing with an environmental zone which may be described as a prolonged Transitional life zone that does not abruptly give way to the Montane or Canadian life zone. One may penetrate rather deeply into the foothills with their comparatively high relief without getting out of the characteristic oakbrush which tends to dominate the upper reaches of the zone. Pinon and juniper are much less common as one enters into the high bluffs at a stream course elevation of about 7,000 feet. The oakbrush-filled canyons then extend another four or five miles north and rise some 1,000 feet at stream level before the aspen, spruce and fir of the Montane Zone really commence. This results in a broad band of oakbrush-filled canyons extending some four to five more miles back into the bluffs. It is this broad band of oakbrush which is a distinctive feature of this flank of Grand Mesa and which was so frequently mentioned by Escalante in his journey over it in 1776 (Chavez and Warner 1976:28-38). The main pinon and juniper zone lies lower down the valley slope below the high bluffs below 7,000 feet. This broad band of oakbrush is relatively important in considering the local settlement patterns because it prolongs the ecotone between the main pinon/juniper area of the Transitional Zone and the aspen and spruce/fir of the Montane. It also may tend to obscure resources when they are present.

All of the aboriginal resources in the study area were found at one edge or the other of this broad band of oak brush (Figure 57). While oakbrush zones are common in mountain foothill environments, the prolonged nature of that above the North Fork and elsewhere on the flanks of Grand Mesa may account for what appears to be a zone of limited aboriginal occupations. This places them clearly on the ecotones between the oakbrush community of the Transitional Zone and its pinon and juniper community and the oakbrush of the Transitional and the aspen, spruce and fir of the Montane. This is opposed to what might more typically be described as a single linear distribution where the ecotone for the major life zones is not so wide. There is subsequently believed to be a broad zone evidencing limited prehistoric use that may in fact occupy much of Grand Mesa. The CWI study area did not, however, extend far enough down into the valley to allow for a comprehensive appraisal to be made of site density in the main body of the pinon/juniper or up into the aspen, spruce and fir. All that can be said from the study area is that a broad band of relatively empty oakbrush exists and that sites may be found near water on either edge of this band. It must be acknowledged that the oakbrush may also have obscured the ground surface so much that resources may have been missed. Since they were, however, noted at the edges of the broad band of oakbrush where ground visibility is equally as bad, it is likely that the suggested pattern is a reality in the settlement distribution.

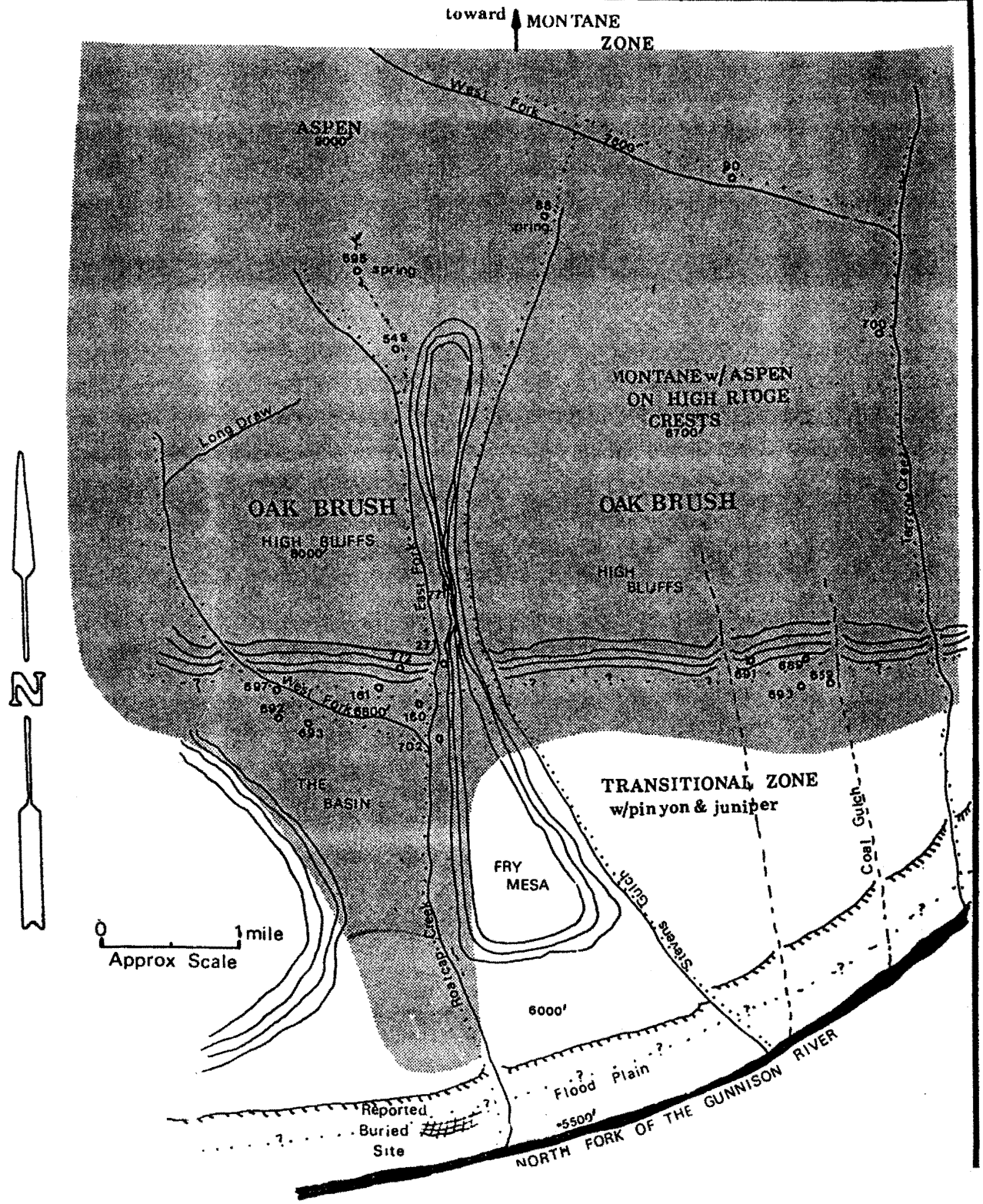
The report of Hibbets and his associates (1979) reports a similar but longer transect from the northwest slope of Grand Mesa. This

transect (No. 7) ranged from the lower juniper covered zones, across the full gradation of the pinon/juniper zone and terminated in a mixed mountain shrubland interspersed with stands of aspen. In the 10.9 square miles of this transect there was a density of 6.5 sites and 9.5 isolated finds per square mile. CWI's study area had lower aboriginal site and isolated find densities of about one and one. The lower density for CWI's study area is believed to be attributed to the fact that the area primarily encompassed the broad band of oakbrush. Escalante does not seem to have found any Utes camped within this zone when he traveled through it on his way up Hubbard Creek to Hubbard Park (Chavez and Warner 1976:28-38). He did find an encampment of Utes above it and also encountered them below it nearer the North Fork. He did find Ute wickiups in an oakbrush environment on the north flank of Grand Mesa.

As shown in Figure 57, the lower edge of the broad oakbrush zone includes distinctive topographic points where the streams of the study area issue from the high bluffs onto the upper benches and terraces above the North Fork. While not all the water courses yielded sites at these points, enough did to suggest some probability of patterning in these locations. The most notable case where resources were suspected, but not discovered, was on Terror Creek at the east boundary of the study area. The rugged topography and heavy oakbrush may simply have hidden the resources where in fact they may exist. Stevens Gulch also did not reveal resources at this location. Resources were found about these points on both East and West Roatcap Creeks and on Coal Gulch. On the north or upper margin of the oakbrush band there was also some evidence of aboriginal occupation. As shown in Figure 57, 5DT88 (The Morrell Cow Camp) yielded a few flakes of toolstone and the West Fork of Terror Creek produced a buried aboriginal component at 5DT90. This latter site shows much promise as a prehistoric resource.

Within the suggested constraints offered by water and the margins of the oakbrush zone, it is suggested that trails were perhaps very important in the settlement pattern. Virtually every aboriginal resource, be it site or isolated find, exists on an established pack trail, and most of the main ones show on the topographic maps. The extremely rugged topography admittedly restricted much of the inventory to the valley floors and/or game and pack trails. These features were also the only places where one could see the ground surface. The potential for bias in the inventory has been considered in light of these facts. It is not, however, believed that the inventory results were very seriously affected by these considerations. On the contrary, the common denominator binding site locations into some pattern is thought to be a very simple one. It was trails. The potential routes of travel are few in this area of Grand Mesa. If anyone wishes to hike, ride a horse, or drive into the hills, they must select from one of only a few basic and seemingly long established routes. Except for the meandering game trails which mark the browse areas of the steep slopes, the main routes of man and beast appear to have been the trails. At 5DT271, for example, the excellent historic Ute resource at Component 1 sat astride the Roatcap Game Trail. If the original survey team had followed the trails, they would probably have found the resource. There is not one aboriginal site that is located very far

FIGURE 57



Legend:

- 0549 = Delta Co. Site No. 5 Dt
- ····· = Known Trail
- -?··?·- = Suspected Trail
- = Oakbrush Dominated Zone

FIGURE 57: SIMPLIFIED INTERPRETIVE SITE LOCATION PLAN FOR PREHISTORIC RESOURCES IN THE COLORADO WESTMORELAND STUDY AREA, DELTA COUNTY, COLORADO.

from a trail. Much of the survey was accomplished from horseback and followed these trails. Extreme efforts were expended to literally "beat a path" by foot through heavy oakbrush to reach small benches with springs and to reach springs on top of the high bluffs. Resources were seldom or ever located by these means. On the contrary, when the natural game trails were followed the resources could be frequently spotted from horseback. It is suggested that travel routes were in the past as limited as they are today and that prehistoric man and big game tended to use the same ones. In historic times, Anglo visitors to the mountains continued to use the same trails. Aboriginal sites are situated on or as near to these trails as topography will allow. Their patterns are believed to be constrained along these routes by the availability of water and flat ground as well as their location relative to ecotones at the margins of the oakbrush zone. Within this broad pattern a seasonal residential pattern is suspected to have operated, particularly in regard to the Numic peoples for whom we have ethnographic accounts. In these cases, the residence of nuclear families would have been dispersed in the near proximity of other members of the deme. If people were residing in more open areas, residences might appear as a cluster. If, however, they were situated in topography that was constrained in a linear manner, the residences will evidence a linear arrangement. This can be seen in the linear manner of site distribution along the trails in Figure 57. Escalante described this pattern for the Sabuaganas after leaving Buzzard Park on Grand Mesa in September of 1776. He stated:

> We turned north-northwest one league, then northwest somewhat more than a league and three-quarters over good and stoneless terrain, although with some hills, passing through rather troublesome forests of spruce and poplar and clumps of scruboak. We turned north-northwest again for a quarter of a league through a low, narrow valley in which enough water flows to fill two middling furrows; and although it does not continue all through the narrow valley, since it disappears completely in some places, running in spots and in others reappearing in waterholes like ponded rainwater, it seems to be perennial because throughout the entire narrow valley there were huts and tiny dwellings, which indicate that is a camping site for these Yutas. Following the box channel of an arroyo in which said water disappears and reappears along the northern side and to the northwest, we went a league and a half and halted in it almost at the foot of a bluff....
>
> (Chavez and Warner 1976:35)

Not enough data exist to speculate on the proximity of households to one another. Suffice it to say that in the late summer and fall the narrow valleys around Grand Mesa probably witnessed numerous clusters of households stretched out in a linear fashion at certain points along the game/Indian trails.

On the northwest flank of Grand Mesa, Hibbets and his colleagues (Hibbets 1979:174) also found a marked tendency for sites to have a linear alignment parallel to drainages. "This can be observed from the

open Lithic Scatter Base Camps in Transect 7. A similar tendency was noted at sites in the Reese River District of the central Great Basin..." These authors cite Powell's observations (Fowler and Fowler 1971) and suggest that linear alignments of habitation sites along drainages might be explained by repeated occupations. Hibbets and his colleagues' thoughts lend support to the interpretations given here in reference to the basic settlement pattern as it emphasized ecotones and optimum resource procurement strategies. This reference to Powell's observations (Fowler and Fowler 1971) on the Ute's preference for new camping places each season is particularly useful in understanding this linear pattern (1979:174). This quote from Powell was presented in Chapter 4.

Cultural Chronology

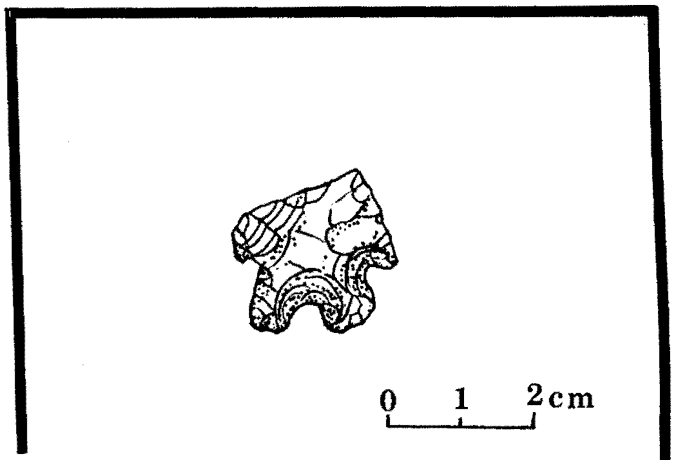


Figure 58: Elko "like" split stem, corner notched projectile point from surface of 5 DT 702 on East Roatcap Creek.

There is limited evidence of late Archaic Stage use of the CWI study area. The surface of 5DT702 on East Roatcap Creek yielded the base of a split stem point (Figure 58) which, according to Holmer's analysis of projectile points from the Intermountain West, would be typed as a Gatecliff Split Stem point from the Gatecliff Floruit, which would date from about 2,000 B.C. to A.D. 500. This would roughly place it within the Armijo or En Medio Phases of Irwin-William's Oshara Tradition (1973:9). This is the earliest discernible occupational evidence from the CWI study area and is believed to be significant in light of the relatively common occurrence of earlier pre-Fremont Stage sites around Grand Mesa and West-Central Colorado (Reed 1984; Buckles 1971; Baker 1980; Jones 1986; Horn et. al. 1987).

Within CWI's limited study area, it may be significant that all of the datable information from surface finds to excavated components indicates occupations beginning no earlier than late Archaic/early Formative times. It is possible that this is a result of increasing populations dispersing and more efficiently utilizing available environments as part of the general trend suggested by Irwin-Williams for the Oshara Tradition developments (1973) in the region. Nickens and Associates (1986:94-95) have noted a regional trend which suggests that the period around the Time of Christ is important locally. They see this in a clustering of occupations ca. 100 B.C. to A.D. 600. This idea also seems to be supported by other survey work in the area (Hibbets et. al. 1979:21). Little more can be said at this point other than that within a substantial Archaic regional occupation, there is at present no evidence that the CWI project area, with its very wide oakbrush zone, was occupied until relatively late in time. Hibbets and colleagues (Hibbets et. al. 1979:171) do not seem to have noted any tendency toward clustering of temporally diagnostic sites by environmental zones. This may have been due to a more crisply defined ecotone between the Transitional and Montane Zones than in the CWI area.

The earliest excavated data comes from 5DT271's Component 3 (A.D. 10 ± 410). This suggests the presence of a more open vegetational community and slightly warmer environment at about the Time of Christ. There are strong but subjective indications from the lithic assemblage that the occupation may have more southerly associations within the En Medio and Trujillo Phases of the Oshara Traditions (Irwin-Williams 1973). The best comparable description and synthesis of the component may be found in regard to the Oshara. This could, however, at least in part be due to a lack of any other synthesis such as for Schroedl's Dirty Devil Phase (Schroedl 1976) or Buckles' (1971) local Horse Fly/Ironstone and Dry Creek Phases. Obsidian from Component 3 has been traced to Cochiti in southern New Mexico which lends at least limited support for southerly connections. The occupation pretty clearly represents a warm season high altitude base of operations and probably was a brush structural location. The degree to which it may or may not reflect an occupational pattern similar to that of Components 1 and 2 is not known.

Component 2 (A.D. 760 ± 60) is probably a summer/fall residential base household with a wickiup-like structure dating to the BMIII/Pueblo I Period of the Formative Stage. The only diagnostic artifact, a small ovoid and distinctively corner-notched arrow point associated with ovoid preforms, is tightly dated in this component and is consistent with those from other assemblages reported from "Fremont-like" sites in the area. Its relationship to typical late Basketmaker and early Anasazi styles is unsettled but they may be different. There is a possibility that the style could have a Numic connection. There are no known directly analogous ephemeral sites reported in the local archaeological literature. This type of site at this point in time is, however, believed to represent a summer/fall seasonal residential base for peoples such as occupied the Weimer Ranch Site (Crane 1978) or perhaps the stone "hogan-like" structures reported by the Huschers (1943). No further comment is now advanced in reference to cultural or linguistic associations. As with Component 3, this component's relationship to

Buckles' (1971) chronology is unclear except in its temporal assignment to his Ironstone/Dry Creek Phases.

Component 1 at 5DT271 as a late 18th or early 19th Century pure historic Ute summer/fall residential base is quite important. It has ethnographic associations to Escalante's observations and reflects a Ute household late in these peoples' Early Contact Phase. This was prior to the time the contact/traditional culture was destroyed and before the Phase of Conflict and Competition had seriously eroded the peoples' self-sufficiency (Table 7). In addition to dating local Numic hallmarks such as a Desert Side-Notched arrowpoint and Uncompahgre Brownware pottery, the component provided a relatively close look into a Ute household's female activity areas and the associated butchering tool kit.

5DT771 (The Ridge Site) is interpreted as a prehistoric game drive and kill system. On the basis of a subjective comparison of lithic source materials represented, it is believed to most likely be associated with Component 3 at 5DT271. The range and types of materials present seems to be most similar to those from Component 3 at 5DT271. If so, this would date at least one use of the game drive system within a few hundred years each side of the Time of Christ. In this regard, the most likely cultural association is with early basketmaker-like people of the En Medio and Trujillo Phases of the Oshara Tradition (Irwin-Williams 1973). The tool kit represented at this site is very typical of those observed at 5DT271 where dominance of female oriented activities is believed to be indicated by a tool kit containing a high percentage of simple utilized lithic debitage. While comparative studies in this regard are ongoing, there are suggestions that lithic assemblages from early Anasazi communities may have a comparatively high percentage of simple utilized flakes (Kane and Gross 1986). Copeland (1986) has recently attempted to develop statistical methods of chronological ordering of sites in the eastern Great Basin which lack traditional temporal indices. His efforts include work with lithic debitage and he has been able to show some potentials for distinguishing between Archaic and Late Prehistoric sites. Continued research on lithic debitage is one of the more pressing needs in the study of cultural chronologies for ephemeral sites in the region.

Cultural Processes

On the basis of the limited data available to date from Grand Mesa, it would seem to be most unwise to attempt processual explanations at this time. For a time yet we may need to be content with our roles in developing the regional cultural history as advocated by Taylor (1948 and 1972) with whom this writer is in total agreement.

Demography

If we have found all the prehistoric resources within the CWI study area, and if the components at 5DT271 accurately reflect the temporal chronology of the other site occupations in the study area, there may have been an expansion of regional occupations into the margins of the wide oakbrush zone which serves as a prolonged ecotone between the Transitional and Montane Zones. This ecotone is believed to

be narrower and more clearly defined in other areas on the flanks of Grand Mesa. The late Archaic/early Formative dates for the occupation lend some support to the observations made by other investigators relative to population increases about the Time of Christ (Nickens and Associates 1986; Hibbets et. al. 1979; also see Horn, Reed and McDonald 1987).

CHAPTER 8

SITE MANAGEMENT SUMMARY AND RECOMMENDATIONS REGARDING EPHEMERAL ARCHAEOLOGY IN THE REGION

The Ridge Site (5DT771)

In the original report on the Ridge Site (Baker 1986b), the resource (Figure 59) was recommended to be not eligible for the National Register. As considered then, and in the updated version herein (See Chapter 3), the justification for this evaluation was as follows:

> Test excavation showed that the lithic scatter consisted of butchering tools and was confined to the surface and sod levels. It was focused in a small area of less than 100 square meters. Even within this area, materials were very sparse and lacked diagnostic potential. The ridge top was found to be highly eroded (Figure 14) with only limited amounts of topsoil. There is, therefore, very little if any further archaeological information which could cost effectively be gleaned from this site. The architectural features are quite limited and nondescript. They are not representative of any particular architectural style and have no buried archaeological components. The site is not believed to be eligible for inclusion on the National Register and the evaluation effort reported on herein is believed to be all the mitigation effort justified at this resource as it is now understood. (Baker 1986b:38)

Due to the rugged topography along the ridge top where the game drive was located, it is possible that additional architectural features or lithic concentrations could still be undetected. Such resources could easily exist and could well be eligible for inclusion on the National Register. It took a great deal of effort to locate 5DT771 in the Class III inventory (Baker 1986a). It had been missed by at least two other inventories. These were CRI's 1984 baseline effort (Baker 1984) and the West Central Coal's E.I.S. inventory (Hibbets et. al. 1979). It is, therefore, quite plausible to believe that surface-disturbing activity along the ridge could reveal additional small ephemeral resources. For these reasons, it was recommended that Colorado Westmoreland be restricted from ground-disturbing activity on the ridge unless an archaeologist was present to monitor such work. The ridge crest is outside CWI's revised area of undertaking for the west portal (Figure 3) and such a stipulation should be of no immediate concern. In the event CWI's plans change or other developers propose ground-disturbing activities on the ridge top, implementation requirements for archaeological monitoring should be triggered. Except for the recommended stipulation, Colorado Westmoreland's portal development posed no threat to 5DT771 and construction of the portal was completed without impact to the ridge top.

Figure 59: Aerial photo of newly-constructed portals for the Orchard Valley West Mine on East Roatcap Creek in relation to sites 5DT271 and 5DT771. 5DT271 is located at arrow in the deep shadows of the narrow valley directly below the portal. 5DT771 is at arrow, on the north end of the narrow stream divide immediately east of the portal. Aerial view is to the northwest. July, 1987.

The Boatcap Game Trail Site (5DT271)

This resource was originally believed to be a good candidate for Register eligibility when it was recorded in 1978 (Hibbets et. al. 1979). During the prefield planning for the evaluation program, a general philosophy and goal orientation was shared by CRI, BLM and CWI. This philosophy was that a Section 106 might not be needed if the site was subjected to a reasonable test effort as part of the evaluation work. It was possible to anticipate such an approach because the site was believed to be considerably smaller than it actually was and was suspected of having only one component and focus of activity. That was Component 3 as originally found on the upper terrace. All parties agreed that it was reasonable to believe that a balanced and comprehensive program of evaluation might draw upon all the site's contribution potential and that it might, therefore, no longer be eligible for the National Register. This philosophy was predicated on the assumption that features would be limited. As an example, one hearth and the immediately surrounding living area might be expediently excavated during evaluation work and thus leave little potential in that component. Such an approach would only work at a small site such as this was anticipated to be. This is as opposed to other sites such as deeply stratified open sites or rock shelters where one test unit might easily confirm Register eligibility. Also on bigger sites, a few simple test units might reveal a series of spatially separated structural components. In such cases a test program might have little impact on the integrity of the resource.

Summary Recommendations

5DT271 (Figure 57) has been carefully examined. The exact site limits outside Components 1, 2 and 3 are not, however, known. There may still be components on the lowest terrace, in the alcoves and within and/or adjacent to those examined. These facts, coupled with the ephemeral nature of the components, the generally excellent preservation and their individual cultural affiliations suggest that 5DT271 may still be capable of yielding information important to our understanding of the prehistory of West-Central Colorado. In keeping with the general research orientation outlined in Chapter 1 and affirmed by the State Historic Preservation Office (Reed 1984) such sites should be considered important cultural resources. In this light, it is recommended that 5DT271 may still be eligible for the National Register and that a suitable management plan should be developed for it, if it is threatened with disturbance.

Concluding Comments

The unanticipated discovery of Components 1 and 2 on the lower terrace at 5DT271 carries an important message for those involved in cultural resource management in Western Colorado. While test excavations have long been used to find sites throughout North America, their use in this region has been largely limited to evaluation of resources already known or suspected to exist. Somewhere along the developmental line of CRM procedures in this area, the role of test excavation in finding sites was overlooked. The procedure, to the best

of this writer's knowledge, has not been a routine part of site inventory. It has primarily been used in evaluation once resources are found.

It is the author's experience in the southeast, Canadian Woodlands and Central Plains areas that likely locations for prehistoric sites are frequently subjected to stratigraphic testing through actual placement of such units on terraces or by profiling cut banks of streams. It is only in the Desert West that we seem to have become complacent and tend to primarily rely on surface evidence to lead us to sites. In areas where soil development and vegetational cover are limited, such as in much of Western Colorado, this may frequently be an adequate form of inventory, particularly when dealing with structural Anasazi or Fremont sites. In West-Central Colorado, however, this usually just leads us to find surface or near surface resources which are all too often eroded with poor preservation and limited contribution potential. As these resources are in turn examined, underlying components are sometimes found. Buried components that present no surface evidence are not, however, being found. The only way these are routinely found is through monitoring of construction impacts or simply by chance.

This situation probably came about via a simple communal oversight on the part of all concerned. This may be a result of overconfidence stemming from great success in learning to inventory Anasazi sites in the dry environments of the Southwest. Regardless, as a profession, regional archaeologists forgot the lessons of inventory gained in diverse environments all over North America. Stratigraphic testing of selective areas, chosen on the basis of either predictive hunches or predictive science, has resulted in finding much of the Nation's archaeological legacy.

The accidental discovery of Components 1 and 2 only came about by way of such stratigraphic testing. In this case it was testing relative to evaluating a resource discovered the easy way, by scrutinizing an eroded ground surface. If, however, a more thorough system had been used initially, all the components might have been found with the excavation of one or two 1 x 1 meter tests on this small terrace. It does not take much science to indicate this small terrace would make a choice campsite. If this writer had been breaking new ground rather than simply following regional precedent, he would automatically have tested this terrace, as well as a whole string of others along East Roatcap Creek. After many years of CRM effort, this author has come to realize how many resources, perhaps some of our best, he and his colleagues have walked over and written off because they didn't test the little terraces where a wickiup of a Ute family or other family centered peoples might have stopped and camped, as at 5DT271. These are exactly the types of sites Buckles (1971) and Reed (1984) have stressed as the key to gaining an understanding of the regional archaeology. It is this author's belief that the slopes and valleys of the mountains hold a much larger resource base than was ever imagined. Recent and rather surprising finds such as Jones' work at Curecanti (Jones 1982; 1986), discovery of the Indian Creek Site (Horn et. al. 1987) at the east end of Grand Mesa, the Kewclaw Site at Parachute (Cassells 1983), the early pit house near State Bridge (Metcalf and Black 1991), this author's

recent finding of Fremont brush houses at Rangely (Baker 1991a), and the so very ephemeral remains at 5DT271 suggest we are only starting to reveal a most important resource base. For these reasons, it is recommended that selective stratigraphic test excavations be incorporated in routine inventory efforts throughout this region whether they be undertaken for compliance with 36CFR800 or not. Such test excavations should result in the conservation of many resources.

Until such testing becomes routine we will continue to walk over resources. A great many of our inventories will be found to have been inadequately done and may well need to be redone. Such testing can only result in more thorough inventories and the discovery of a data base in an excellent state of preservation. This should make much of our present data base pale by comparison.

When dealing with ephemeral archaeological sites such as 5DT271, there are additional hurdles to surmount besides simply finding those which are not already eroded. The nature of such resources precludes any quick or easy inexpensive excavations. Hunter-gatherer sites have been discussed in detail by O'Connell (1987) in relation to Binford's (1980) forager-collector continuum. His assessment is that patterns in site structures will often be apparent only "in exposures of thousands or even tens of thousands of square meters, scales that are one or two orders of magnitude larger than those of the very largest excavation now undertaken" (O'Connell 1987:105,106). In this reference, O'Connell stresses the difficulty of adequately excavating ephemeral sites such as those of the Alyawara. His discussion is very applicable to the ephemeral sites of West-Central Colorado and the Western U.S. in general. In this region the literature is filled with reports of comparatively small scale and relatively feeble excavations at such ephemeral resources. Too much of this literature seems to fall short of contributing much about patterning in site structure and content. This is because the sampling used is inadequate for the type of resource. Usually this sampling is determined by simple business concerns rather than the realities of doing meaningful archaeology of ephemeral resources. It was long ago recognized that the small lithic sites in the Desert West may be important (Tainter 1979; Ward 1978; Talmage 1977) and recent archaeological considerations of ephemeral resources have demonstrated the potentials offered by such work (Kroll and Price 1991; Kent 1987) as well as the difficulties inherent in it (Binford 1987). It is, however, suggested that their importance in this region is usually overlooked and that such resources seldom receive enough scrutiny to draw out their contribution potentials as pointed out by O'Connell (1987). It is believed that the work at 5DT271 probably revealed as much about such ephemeral components as any previously undertaken in the region. The many unanswered questions in this work should serve as salient testimony to the arduousness of accessing this information base, even with a substantial excavation labor force such as was available on the CWI project. If regional archaeology is going to make any meaningful advances, however, new and more rigorous efforts are going to have to become routine in cultural resource management.

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APPENDIX I

FAUNAL REMAINS FROM THE ROATCAP GAME TRAIL SITE 5DT271

by

Ronald J. Rood

Archaeofauna Studies
Montrose, Colorado

February, 1987

Report Prepared For:
Centuries Research, Inc.
Montrose, Colorado

INTRODUCTION

A total of 464 bones and bone fragments were analyzed from 5DT271. Of this total, 186 bones, or 40% of the entire collection was identified to at least the level of genus. Mule deer, elk, cottontail rabbit and bison were the only species identified from the sample. Appendix 1 provides a complete breakdown of the faunal material analyzed in this report.

The faunal material from 5DT271 was derived from two distinct components (Components 1 and 2). In addition, a single unidentifiable mammal bone was recovered from the surface during a 1978 survey of the site (Baker, 1987 personal communication). The two components are dated and are considered to be culturally distinct. The faunal material from these two components will be analyzed separately.

Component 1 produced the bulk of the faunal material from 5DT271. This component was a western and eastern separation and a date of 140 ± 50 B.P. was recovered from the western portion of the site area (Baker, 1987 personal communication). Much of the bone from the eastern end of this component is not of cultural origin and will not be considered further in this analysis. A more detailed explanation of this non-cultural bone will be presented later in this report. For the remainder of this report, unless otherwise specified, reference to the faunal material from Component 1 will be limited to the bone associated with the aboriginal activities at 5DT271.

Component 2 is a buried earlier component which produced a date of 1190 ± 60 (Baker, 1987 personal communication). Very little faunal material was recovered from this component and no conclusions concerning faunal utilization for this earlier component can be made. Although, two mule deer bones, one Sylvilajus sp., and one mouse mandible bone are represented in the small sample from Component 2.

Thus, the faunal material from Component 1, less the non-cultural bone, makes up the bulk of the collection from 5DT271. The late date recovered from this component and the presence of Ute artifacts, namely ceramics, indicates we are dealing with an early historic Ute campsite. It is hoped that this report will offer some data on Ute subsistence patterns for the early 19th century.

METHODOLOGY

The faunal material from 5DT271 was sorted, catalogued, and bagged by Centuries Research, Inc., of Montrose, Colorado. The author then analyzed each bag of faunal material seperatly, sorting those bone which were thought to be identifiable from those which could not be identified. Comparative ahimal skeletons in possession of the author and a Bos skeleton in possession of Centuries Research were used in the analysis. In addition to the comparative materials, identification manuals were consulted (Gilbert 1980; Lawrence 1951; Brown and Gustafson 1979). The terminology used in this analysis for species names follows Burt and Grossenheider (1976) and Armstrong (1972).

Bones which could not be identified to specific levels were placed into categories based upon the "level of identifiability" concept as described by Lyman (1979). In this analysis only two categories were utilized. First, there is a size category, Deer-Sheep-Pronghorn (Lyman 1979). Bone fragments assigned to this category were usually long bone diaphysis fragments and rib fragments. Although in some instances the particular element could be determined, the species could not. Assigning the specimens to a size category denotes that one of these three species is likely represented. A total of 33 bone fragments were assigned to this category.

The other category is simply unidentifiable mammal. Again, most of the bone fragments assigned to this category are just that, small splinters and fragments which cannot be further identified. Based upon the thickness and density of the fragment, it could be determined that mammal bone was represented.

All faunal material was tabulated and recorded on Faunal Analysis Forms used by the author. Identifiable bone was counted per taxa and the minimum number of individuals (MNI) was then calculated. MNI estimates were made by taking the most common element of one side for a particular taxon. In addition, age differences were utilized to arrive at a more realistic count of individuals. Table 1 presents a list of species, bone counts, MNI estimates and percentages for the cultural bone from Component 1.

FAUNAL MATERIAL FROM COMPONENT 1

Non-Cultural Bone

As stated earlier, a portion of the bone recovered from the eastern end of Component 1 was determined to be of natural origin. Faunal material from the upper levels of operations 4 and 5 are considered here to be the remains of a mule deer who died on the site of natural causes. Some 86 identifiable bones representing only one individual were recovered from the surface and/or sod layers of these operations. This bone is typically bleached white, has moss stains, and shows no evidence of any cultural modification. In addition, a near complete skeleton is represented. This is a major difference between the cultural and non-cultural bone recovered from this site. The cultural bone from Component 1 is represented by front quarter elements, a few vertebra, some phalanges and mandible fragments. More will be said about this below.

This mule deer which represents the non-cultural bone from Component 1 was a mature individual and evidence from a partial mandible suggests this individual was suffering from severe dental problems. The molars are well worn and there is an abscess on the horizontal ramus of the mandible. A partial occipital bone compares well with a female mule deer, however, an exact sex determination could not be made.

This material from the upper levels of operations 4 and 5 will not be considered with the remaining bone from Component 1. However, two other bones recovered from deeper contexts will be included in the analysis below.

TABLE 1

FAUNAL REMAINS FROM COMPONENT 1: 5DT271

Category	# of Bones	% of Total	% of ID Bone	MNI
Mule Deer	62	19.9	63.9	5
Elk	29	9.3	30.0	3
Cottontail	4	1.3	4.1	1
Bison	2	.6	2.0	1
Unidentifiable Mammal	182	58.3	-	-
Deer-Sheep-Pronghorn	33	10.6	-	-
TOTAL	312	100.0	100.0	10

Again, for the remainder of this report, unless otherwise specified, when reference is made to the faunal material from Component 1 at 5DT271, only the cultural bone associated with the Ute occupation will be considered.

Cultural Bone

A total of 312 bone fragments were recovered from the portion of Component 1 associated with the Ute occupation. Of these, 97 bones, or 31.1% of the total could be identified to at least the level of genus. Mule deer, elk, cottontail rabbit, and bison are represented in the sample (see table 1).

Mule Deer (Odocoileus hemionus)

Mule deer are common in western Colorado and were an important food animal to the aboriginal occupants of the region. A total of 59 bones were identified as mule deer from Component 1 and this constitutes 63.9% of the identifiable sample from the component. Five individual deer are represented. The MNI estimates are based on 3 completely fused right ulnae and two left distal metatarsals with unfused epiphyses. Following Lewall and Cowan (1963), two age groups of mule deer are present in the sample.

Elk (Cervus canadensis)

Elk remains constitute 30.0% of the identifiable samples from Component 1. A total of 28 elk bones, some found in articulation, were recovered. Again, elk would have been of great economic importance to the aboriginal occupants of the region. Three mature elk are represented in the collection. This is based upon 3 right radii and ulnae recovered from the excavations. One articulated unit consisting of a humerus, radius, and ulna was recovered from one of the excavation units.

Cottontail Rabbit (Sylvilagus sp.)

Armstrong (1972) indicates that both the Desert cottontail, Sylvilagus audubonii, and Nuttalls' cottontail, Sylvilagus nuttalli, are present in the area around 5DT271. Based upon the small sample of rabbit bones from the site (only 4, MNI=1), it would be impossible to determine which species of rabbit is present. Further, it would seem that rabbits did not constitute a large portion of the diet for the occupants of this site, at least during the season of year this site was occupied.

Bison (Bison bison)

Two bison bones, a complete right calcaneum and a right proximal metacarpal, were recovered from 5DT271. Armstrong (1972) citing Brewer (1871) states that bison were abundant in the Colorado mountain until the late 1850's. Bergtold (1929) documented western-slope bison on the Roan Plateau and bison were known to have been killed by Utes in 1884 west of Craig, Colorado (Fegler 1910).

The bison bone from this site is somewhat difficult to explain. The calcaneum is located on the lower rear leg while the metacarpal is on the lower front leg. It is possible to conclude that the Utes brought these bones to this site, and it is further possible that a bison was killed in a fairly close proximity to this site. None of the other faunal material from this collection has the appearance of being bison bone. All of the unidentifiable fragments would fit into a deer-sheep-pronghorn size class. If a bison was killed close to 5DT271, one would expect more bison bone in the site. It is also possible that the bison bone was carried to the site by canids. Both specimens display canid gnawing marks, however, much of the deer and elk bone from Component 1 also display such marks. Clearly, further research is needed on the faunal remains recovered from western Colorado sites to determine if bison were an important food species to the Utes.

Deer-Sheep-Pronghorn Size Category

As stated earlier, 33 bone fragments were assigned to this size category. Since no sheep or pronghorn bones were recovered from this site, it is probably safe to assume that the fragments assigned to this category are deer. However, there is not sufficient data to place these specimens into the identifiable sample from the site.

Unidentifiable Mammal

A total of 181 bone fragments from Component 1 were placed in this category. The majority of these are small splinters and fragments of long bones and ribs. These fragments may be the result of cultural modification to obtain the bone marrow. It is also possible that canid gnawing produced these fragments. However, since roughly 40% of these fragments were burned, some type of cultural activity, possible grease production, is suspected (Leechman 1951).

Faunal Material from Component 2

Very little faunal material was recovered from Component 2 at 5DT271. Mule deer remains include one left Naviculo-Cuboid, and one left Lateral Malleous recovered from Operation 18, Central Balk. In addition, two deer-sheep-pronghorn sized elements, a portion of a cottontail cranium, a mouse mandible and a unidentifiable mammal bone were also recovered from this provience. On additional deer-sheep-pronghorn sized element, and three additional unidentifiable mammal bone fragments were recovered from this component.

A small number of tiny burned bone fragments were also recovered from the area around the hearth in Component 2. None of these tiny fragments could be identified.

Seasonality evidence from the faunal material at 5DT271

Without a good set of artiodactyla mandibles and/or migratory bird bone, determining seasonality based on faunal material can be difficult, if not impossible. However, a basic idea of age composition of an archaeological fauna can be estimated from the epiphyseal closure rate

in the long bones. In this case, the long bones of the mule deer recovered from the site will be analyzed to define the age groups of deer represented in the sample. A table presented in Gilbert (1980), developed by Lewal and Cowan (1963) presents the epiphyseal closure rates for mule deer. Using this table, the mule deer from Component 1 basically fall into two age groups.

A total of 9 elements from Component 1 are suitable from this type of analysis. These include a distal tibia, a distal humerus, 2 distal metacarpals, 3 2nd. phalanges (proximal ends unfused), and 2 1st. phalanges (proximal and unfused). Based on the work of Lewal and Cowan (1963), we are probably looking at deer less than 14 to 15 months in age. The distal tibia fuses at roughly 19 months while the distal humerus fuses at 14 months. The phalanges fuse at 15 months. These estimates are based on a good nutritive status for the individual. Those ages would be pushed back several months for deer raised on poor range.

Based upon the epiphyseal closure rates provided by Lewal and Cowan (1963) were are probably dealing with yearling mule deer and three mature individuals. Since deer are born in June - July (Burt and Grossenheider 1976), the best indication is that 5DT271 was occupied during the summer months, possibly into early fall.

ANIMAL BODY PARTS REPRESENTED AT 5DT271 - COMPONENT 1

The deer and elk recovered from Component 1 at 5DT271 are almost exclusively represented by front leg elements. Table 2 presents a breakdown of the deer body parts recovered and Table 3 presents a summary of the elk body parts recovered from the site.

Recovered body parts for both deer and elk indicate that the lower front quarter, phalanges, some vertebra fragments, and very few mandible and skull fragments were the only items returned to the site. This may have been the result of kill distribution among members of the hunting party. Those elements absent from the collection at 5DT271, namely the hind quarters, may have been distributed to another camp. It would seem unlikely that the hind quarters were left at the kill or that those elements were in some way removed from the site area.

The faunal material from this site strongly suggests a distribution of deer and elk body parts among members of a Ute hunting party.

BUTCHERING PRACTICES

Unfortunately, there is not enough data to fully reconstruct the butchering patterns used at 5DT271. However, some preliminary statements can be made. First, based upon the animal body parts represented at the site, we can conclude that the entire animal was not returned to the site. With this site, we have evidence suggesting only the lower front quarter was returned to this location. Initial butchering, including skinning and quartering likely took place at the kill location, possibly at nearby 5DT771 which has been interpretated to be a tool kit site and a "kill point in a simple communal game drive

TABLE 2

MULE DEER BODY PARTS REPRESENTED AT 5DT271

BODY PART	NUMBER OF BONES	% OF TOTAL
Mandible	2	3.3
Vertebra	9	14.7
Front Leg	27	44.3
Rear Leg	8	13.1
Feet	12	19.7
Undetermined	3	4.9
TOTAL	61	100.0

TABLE 3

ELK BODY PARTS REPRESENTED AT 5DT271

BODY PART	NUMBER OF BONES	% OF TOTAL
Cranium	1	3.4
Vertebra	1	3.4
Front Leg	21	72.5
Rear Leg	0	.0
Feet	6	20.7
TOTAL	29	100.0

system that utilized both man-made and natural topographic features" (Baker 1986:38).

Only one long bone fragment recovered from 5DT271 shows any butchering scars. These were transverse cut marks perpendicular to the long axis of the bone. These cut marks may have been produced while fleshing meat from the bone. It could not be determined if the cut marks were made with stone or metal tools.

The presence of bone fragments, splinters, and evidence of "green" breaks suggests some further processing of the deer and elk bone at the site for marrow and possible grease. However, this is not seen as a major site activity since many of the elk long bones were mostly intact. Several did show breaks suggesting marrow extraction and a number of small burned long bone fragments suggests some level of grease production.

Much of the bone from Component 1 does show evidence of gnawing by canids. Without a doubt, some of the fracturing of bone was the result of canid activity.

SEX AND AGE COMPOSITION OF THE 5DT271 FAUNA

There is no indication of the sex of the mule deer recovered from this site. Of the three elk represented in the sample, at least one female is indicated by a partial cranium recovered from operation 13R1.

Of the five deer represented, two are estimated to be yearlings, likely less than 14 - 15 months in age (see seasonality discussion). This estimate is based upon long bone epiphyseal closure rates provided by Lewal and Cowan (1963). Again, based upon the long bone epiphyseal closure rate, the other three deer represented in the sample are mature individuals, probably aged between three and seven years. These estimates should be considered as tentative since there is no mandibular data to support these assumptions.

All of the epiphyses on the elk bones recovered from 5DT271 were fused. Based upon age information from Knight (1966), these individuals were probably over three years in age. Again, without mandibular data, these estimates are tentative.

BONE TOOL ANALYSIS

One bone tool was recovered from operation 12B, level 2. This tool is made from an elk metacarpal and it is broken into two pieces. It's total length is 22.3 cm. with the working edge being on the posterior side of the diaphysis at about mid-shaft. The proximal end of the bone is intact. The working edge is curved and shows very slight polish along the edges. This bone tool does not show heavy use although its use as a beamer is possible. No other bone tools were recovered from the site.

GASPROPODS

Two snail shells were recovered from the upper levels of Component 1. These are probably of modern origin and were not further identified in this analysis.

CONCLUSIONS

The limited sample of faunal remains from 5DT271 has provided us with some information on Ute faunal procurement, kill distribution, and seasonality. Deer and elk dominate the sample but cottontail rabbit and bison were also identified.

Component 1 produced nearly all of the faunal material used in this analysis. A non-cultural mule deer was recovered from the surface/sod levels in the eastern end of this component. This single deer was not included in the final analysis of faunal material from the site. Component 2 produced very little in the way of faunal material.

A total of three mature deer and two yearling deer were recovered suggesting a summer to fall time of occupation. The three elk recovered from the site were mature individuals and at least one female is represented.

A distribution pattern is indicated by the faunal material from this site. Over 45% of the deer elements and 75% of the elk elements are lower front quarter bones (radii, ulnae, humeri). Kill distribution would seem to be the most plausible explanation for the abundance of front leg elements at this site.

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APPENDIX 1

FAUNAL MATERIAL FROM 5DT271

OPERATION 4

A1/surface - Odocoileus hemionus - 1 r 2nd. phalanx
1 l 2nd. phalanx
1 r 3rd. phalanx
1 l 3rd. phalanx
2 lumbar verts.
1 thorasic vert. spine
1 M2, well worn

A1 - O. hemionus - 2 l rib
3 thorasic verts.
1 thorasic vert. spine
1 sternum frag.
1 l 1st. phalanx
D-S-P - 4 rib midshaft frags.

A1/balk - O. hemionus - 2 l 1st. phalanx
1 r 1st. phalanx
1 l 2nd. phalanx
1 r 2nd. phalanx
1 l 3rd. phalanx
1 r 3rd. phalanx
5 distal sesamoids
1 r lunate
1 r magnum
1 rib head
Unident. mammal - 12 fragments

A4 - Unident. mammal - 1 fragment
B2 - Unident. mammal - 1 frag.
C1 - Unident. mammal - 1 frag.
N1 - O. hemionus - 1 r mandible frag., abscess evident.
1 r maxilla frag.
1 r premaxilla
1 r tibia, distal
1 r calcaneum
1 r astralages
1 l scaphoid
1 thorasic vert. frag.
D-S-P - 5 rib frags.
Unident. mammal - 14 frags.

Q2 - Unident. mammal - 1 frag. Q1 - O. hemionus - 1 sacrum
3 cerv. verts.

OPERATION 5

A1/surface - O. hemionus - 1 r metacarpal
1 cerv. vert.
D-S-P - 6 frags.
O. hemionus - cranium frag., occipital portion

B1 - Unident. mammal - 1 frag.
C1 - O. hemionus - 1 r humerus, proximal
G1/sod - Unident. mammal - 1 frag.
G/H/1 - D-S-P - 1 rib frag.

A4 @ 38cm BGS - O. hemionus - 1 l magnum

TEST PIT 4

Surface of T.P. #4 - O. hemionus - 2 cerv. verts.

Level 1 - O. hemionus - 1 r 1st. phalanx
1 l 1st. phalanx
2 r 2nd. phalanges
1 r magnum
1 r patella
1 l calcaneum
1 l metacarpal, proximal
1 l 2nd. phalanx
1 cerv. vert.
3 r scapula blade frags.
1 l humerus
1 l scapula
1 l radius
1 l ulna
1 r radius
1 r ulna
1 r scapula
1 l femur, distal
1 l femur, proximal
1 atlas
3 sternum frags.
D-S-P - 5 rib frags.
Unident. mammal - 3 frags.

Level 2 - O. hemionus - 1 r carpal cuneiform
1 r scaphoid
1 l unciform
D-S-P - 2 rib frags.

10cm. BGS - Unident. mammal - 1 burned frag.

West of T.P. #4/surface bone
O. hemionus - 1 l tibia
1 l metatarsal
1 r metapodial
1 r humerus, distal
2 thorasic verts.
1 axis
Unident. mammal - 2 frags.

Unit 4/5 floor - O. hemionus - 1 r 1st. phalanx

TEST PIT 5

Surface - Unident. mammal - 1 frag.

NRC #20 - Unident. mammal - 1 frag.

COMPONENT 1

OPERATION 12

A1 - Odocoileus hemoinus - 1 r distal humerus
Unident. mammal - 5 burned frags.
B1 - O. hemionus - 1 r radius
1 r ulna
1 r ulna, diaphysis
Unident. mammal - 8 frags. (4 burned)
Unident. mammal - 18 frags. (8 burned)
B2 - Cervus canadensis - 1 lp metacarpal (bone tool)
Unident. mammal - 9 frags. (3 burned)
A&B - O. hemionus - 2 r 1st. phalanx
1 l 1st. phalanx
1 unident. mammal
Cervus canadensis - 1 l 2nd. phalanx
C3 - Unident. mammal - 1 frag.
C3 - Cervus canadensis - 1 r scaphoid
1 l lunate
O. hemionus - 1 r 2nd. phalanx
1 l 2nd. phalanx

D/E2 - O. hemionus - 1 r metacarpal
1 r magnum
1 r unciform
F1 - Unident. mammal - 1 fragment
F2 - O. hemionus - 1 l metacarpal diaphysis
1 r carpal-cuneiform
F/G3 - O. hemionus - 1 r scaphoid

OPERATION 13

A1 - O. hemionus - 1 r metatarsal diaphysis
Unident. mammal - 11 fragments (2 burned)
A2 - O. hemionus - 1 metapodial (distal)
Unident. mammal - 7 frags.
D-S-P - 3 long bone frags.
F1 - C. canadensis - 1 r radius
1 r ulna
1 r 1st. phalanx
Unident. mammal - 7 frags. (2 burned)
F2 - C. canadensis - 1 l naviculo-cuboid
1 r naviculo-cuboid
Unident. mammal - 1 frag.
L1 - Unident. mammal - 2 frags. both burned
R1 - C. canadensis - 1 l metacarpal
1 r metacarpal
1 r humerus
1 r 1st. phalanx
1 l 1st. phalanx
1 r 2nd. phalanx
1 l 2nd. phalanx
1 l magnum
1 r ulna
1 r radius
1 r humerus
1 l ulna
1 l humerus
1 cranium frag. female
1 l radius, proximal
1 l radius, distal
1 l radius, diaphysis frag.
R1 - Unident. mammal - 57 frags. (26 burned)
S1 - D-S-P - 1 frag.
Unident. mammal - 2 frags.
U1 - C. canadensis - 1 atlas
Unident. mammal - 8 frags. (one with transverse cut marks)
C. canadensis - 1 r radius proximal
1 r ulna
W1 - O. hemionus - 1 l humerus, diatal
Unident. mammal - 6 frags.

OPERATION 14

H3 - D-S-P - 4 frags.
I1 - O. hemionus - 1 l astralagus
D-S-P - 1 rib
N1 - Sylvilagus sp. - 1 r mandible
1 l mandible
1 r mandible frag. same as above
N2 - O. hemionus - 1 l tibia, distal
1 r metacarpal, proximal
N3 - D-S-P - 1 frag.
Unident. mammal - 2 frags.
Q1 - Unident. mammal - 1 rib frag.

OPERATION 15

A1 - Unident. mammal - 1 frag.
C3 - D-S-P - 12 frags.
O. hemionus - 1 l calcaneum
C2 - Bison bison - 1 r calcaneum
1 r metacarpal, proximal
D-S-P - 8 frags.
O. hemionus - 1 r ulna
Sylvilagus sp. - 1 r maxilla frag.

OPERATION 16

C1 - O. hemionus - 1 r metatarsal, proximal
1 r metatarsal, diaphysis
1 r 3rd. phalanx
1 r tibia, distal
C2 - O. hemionus - 1 r 2nd. phalanx
D-S-P - 2 frags.
D1 - O. hemionus - 1 r ulna
1 l ulna
1 l 1st. phalanx
2 l 2nd. phalanges
1 l 1st. phalanx
2 r 3rd. phalanges
2 ? metapodial, diaphysis
1 l scaphoid
1 l unciform
1 l lunate
1 cerv. vert. frag.
1 thorasic vert. frag.
3 vert. epiphysis
Unident. mammal - 24 frags.
D1 - O. hemionus - 1 r humerus, proximal
1 r femur, epiphyses unfused
1 l metacarpal, unfused
1 r mandible frag.
* young individual

1 thorasic vert. frag.
1 l mandible frag.
1 atlas
1 l humerus, proximal
1 l lunate
Unident. mammal - 4 frags.
E1 - O. hemionus - 2 cerv. vert. frags.
L1 - O. hemionus - 1 r lunate
Unident. mammal - 2 frags.
M1 - D-S-P - 1 frag.
Unident. mammal - 3 frags.
N2 - Unident. mammal - 1 frag.
N10 - O. hemionus - 1 l metacarpal, unfused

COMPONENT 2

4N 0-10cm. - D-S-P - 1 frag.
5A/5G-H Occ. level - Unident. mammal - 2 frags.
TP #4 level 8 - Unident. mammal - 1 frag.

OPERATION 18 - Central Balk

O. hemionus - 1 l naviculo - cuboid
1 l lateral malleolous

2 - D-S-P fragments/rib

Sylvilagus sp. - 1 cranium frag.

1 Unident. mammal

APPENDIX II

POLLEN ANALYSIS AT 5DT271, WESTERN COLORADO

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INTRODUCTION

Four pollen samples were analyzed from 5DT271, a multicomponent site located on the North Fork near Paonia, Colorado. This site is located in colluvium, which appears to represent displaced Pleistocene glacial deposits (Baker, personal communication, February 1987). The site exhibits three archaeological components, which have yielded radiocarbon ages of AD 1810, AD 750, and AD 10. Pollen samples were collected to observe the paleoenvironment, and possibly provide data concerning the vegetal portion of the subsistence base.

METHODS

The pollen was extracted from soil samples submitted by Centuries Research, Inc. from western Colorado. A chemical extraction technique based on flotation is the standard preparation technique used in this laboratory for the removal of the pollen from the large volume of sand, silt, and clay with which they are mixed. This particular process was developed for extraction of pollen from soils where preservation has been less than ideal and pollen density is low.

Hydrochloric acid (10%) was used to remove calcium carbonates present in the soil, after which the samples were screened through 150 micron mesh. Zinc bromide (density 2.0) was used for the flotation process. All samples received a short (10 minute) treatment in hot hydrofluoric acid to remove any remaining inorganic particles. The samples were then acetolated for 3 minutes to remove any extraneous organic matter.

A light microscope was used to count the pollen to a total of 100 to 200 pollen grains at a magnification of 430x. Pollen preservation in these samples varied from good to poor. Comparative reference material collected at the Intermountain Herbarium at Utah State University and the University of Colorado Herbarium was used to identify the pollen to the family, genus, and species level, where possible.

DISCUSSION

Site 5DT271 is located along the North Fork near Paonia, Colorado on the western slope. The vegetation in the vicinity of the site may be described as consisting primarily of gambel's oak, sagebrush, pinyon, and juniper. Four pollen samples were submitted for analysis from this site (Table 1), representing three periods of occupation.

The pollen record from this site indicates that during Components 1 and 2 the environment was very similar to that of the present, with large scrub oak communities, scattered pinyon and juniper, and an understory of sagebrush and grasses. The pollen sample from Component 3 (Table 2) contains a significantly smaller quantity of pollen representing the oak, pinyon, and juniper portions of the environment than do the pollen samples from the other two components. This suggests that conditions may have been

TABLE 1
PROVENIENCE OF POLLEN SAMPLES FROM 5DT271

Sample No.	Component	Radiocarbon Age (BP)	Occupation Date (AD)	Provenience	Pollen Counted
1	1	140 ± 50	1810 AD	Ash and food bone layer under sod adjacent to slab-lined hearth	200
2	2	1190 ± 60	750 AD	Hunting bower (?) area adjacent to creek, ashy occupation surface	Insuff
4	2	1190 ± 60	750 AD	Hunting bower (?) area adjacent to creek, ashy occupation surface TP 415	100
3	3	1940 ± 410	10 AD	Presumed wickiup site surface beneath milling stone	100

TABLE 2
POLLEN TYPES OBSERVED IN SAMPLES FROM 5DT271

Scientific Name	Common Name	Pollen Frequencies 1	4	3
ARBOREAL POLLEN:				
Juniperus	Juniper	10	3	1
Picea	Spruce	1	1	
Pi 22	16 5			
Quercus	Oak	19.5	16	12
Salix	Willow		1	
NON-ARBOREAL POLLEN:				
Cheno-ams	Includes amaranth and pigweed family	3.5	3	19
Compositae:	Sunflower family			
Artemisia	Sagebrush	16	17	27
Low-spine	Includes ragweed, cocklebur, etc.	8	5	8
High-spine	Includes aster, rabbitbrush, snakeweed, sunflower, etc.	2	18	10
Liguliflorae	Includes dandelion and chickory	.5		
Cyperaceae	Sedge family	.5		
Ephedra nevadensis-type	Mormon tea	2	1	
Ephedra torreyena-type	Mormon tea	.5		
Eriogonum	Wild buckwheat	.5		
Gramineae	Grass family	6	1	6
Leguminosae	Legume family	.5		
Rhamnaceae	Buckthorn family	.5		1
Rhus	Squawberry	.5		
Rosaceae	Rose family	1		3
Cercocarpus-type	Mountain mahogany	1		
Scrophulariaceae	Figwort family	.5		
Sphaeralcea	Globe mallow		1	
Umbelliferae	Parsley or carrot family		1	
Urtica	Nettle			1
Indeterminate		4	14	7

warmer and/or drier during this period (AD 10). The local vegetation appears to have been dominated by Cheno-ams and sagebrush, and may be described as more open than present. Urtica (nettle) pollen was recovered from this sample, and indicates the presence of nettle along the banks of the North Fork.

Sample 1 was collected in an ash and food bone layer adjacent to a slab-lined hearth. The pollen record does not contain any data that appear to reflect cooking activities involving vegetal resources. Samples 2 and 4, representing Component 2 (AD 750), were collected adjacent to the creek in an ashy occupation surface. Sample 2 did not yield sufficient pollen for analysis, whereas sample 4 did. This sample yielded the largest frequency of High-spine Compositae, a group of plants that includes sunflower, which produces edible seeds. Helianthus (sunflower) seeds are very rich in oil, and may be ground into paste for batter or roasted and eaten. Other members of the Compositae family were used in a variety of ways, including medicinally and as food. Another species of Helianthus (Jerusalem artichoke) produces roots which may be boiled or baked and eaten (Harrington 1967:313-315). Rabbitbrush may be used as fuel. The pollen record is not conclusive in indicating that sunflower may have been exploited, but suggests that this is a possibility.

Pollen sample 3 represents Component 3 (AD 10), which is a presumed wickiup occupation. The sample was collected beneath a milling stone and yielded the largest Cheno-am frequency recovered at this site (19%), which is approximately six times greater than the quantity recovered in either of the other two samples from this site. This greatly elevated quantity of Cheno-am pollen suggests that Cheno-am seeds were ground using this milling stone. Cheno-ams were exploited for both their greens (cooked as a potherb) and seeds. The greens are most tender when young, in the spring, but may be used at any time. The seeds were ground and used to make a variety of mushes and cakes (Chamberlin 1964:366; Gallagher 1977:12-16; Gilmore 1977:26; Harrington 1967:55, 57, 71; Rogers 1980:43, 66). No other evidence of grinding activity was noted in this sample.

SUMMARY AND CONCLUSIONS

The pollen record from four samples representing 5DT271 indicates that during Components 1 and 2 (AD 1810 and AD 750 respectively) the environment was very similar to that of today. Component 3, which yielded a date of AD 10, exhibits pollen evidence that the environment may have been warmer and possibly drier than present, and that the vegetation community was more open. The oak thickets were not as dense as those of today, and the pine and juniper were more scattered. The local vegetation appears to have been dominated by sagebrush during this interval. Full paleoenvironmental interpretations of this area will, of necessity, have to await the opportunity to study a lengthy stratigraphic sequence.

Interpretation of subsistence activities during these three components is scanty from the pollen record. No evidence of the use of vegetal resources was recovered from Component 1. The pollen record representing Component 2 (sample 4) suggests that a member of the High-spine Compositae group, such as sunflower, may have been exploited. Alternatively, members

of this heliotropic family may have been more common in the environment. Component 3, the oldest component, yielded a milling stone, under which pollen sample 3 was collected. This sample yielded by far the largest quantity of Cheno-am pollen, indicating that Cheno-am seeds were ground using this milling stone.

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APPENDIX III

Results of Floral Analysis for 5DT271

by

Meredith Matthews
Montrose, Colorado

P.O. Box 2076
Montrose, CO 81402

Centuries Research Inc.
Box 1869
Montrose, CO 81402

Dear Steve,

Enclosed are tables with the results of identification of the Roatgap Trail Site (5DT 271) botanical remains and potential use of the taxa identified, based upon ethnographic literature. Since you did not require a formalized report, I need to make a few points to you concerning the remains.

In general, the majority of items picked out of the samples by Ron were not actually seeds. Although I did not note these items in the following table, most of the remains consisted of items I call Spherical Bodies. Different analysts use different terms for these items, but all agree that they don't know what these items are. It has been suggested that they're residue from cooking plant remains, maybe some sort of rootlet or rhisomatic nodule or some sort of insect excretment. Regardless, they are not seeds and therefore I did not include them in the results table although I did count them and package them up. The sample from Component 3, T.P.2C consisted of only three Spherical Bodies, so I did not include this sample in the results table.

As you may be aware, noncharred remains from open air sites, especially from sites that are shallow and/or are located in disturbed habitats, are considered to be contaminates and therefore not related to the occupation of the site. It is not possible to determine how old the noncharred seeds are or how they actually came to be associated with the cultural context being sampled. Most of the noncharred remains from your samples still had intact embryos, which tends to imply a fairly recent deposition in the soil bank. Therefore I suggest that you disregard the noncharred remains in your interpretation of the site and either do not discuss them in your descriptions of the various contexts sampled or note them as contaminates.

If an item was described as Indeterminate it was because a positive identification, even to the level of Family,could not be made, usually because of the fragmentary or degraded character of the material. So, as far as charred remains that could be positively identified, there were Chenopodium (goosefoot) and Gramineae (grass) seeds and a single Juniperus (juniper) scale.

As per my conversation with Ron, I am giving you hand written tables so you can have themformated to suit your report. If you have any questions concerning the identifications or the enclosed information, please do not hesitate to contact me at work (249-3411).

Sincerely,

Meredith

Meredith Matthews

TABLE 1

RESULTS OF FLORA ANALYSIS, 5DT271

Provenience	Taxon	Part/Condition	Quantity
Component 1	Compositae	seed/nch	1
OP 12,LII	Compositae	seed/nch	1
Hearth S½			
OP12,D/E III	Chenopodium	seed/nch	1
Pit bottom	Indeterminate	seed/nch	1
OP12,A:B	Chenopodium	seed/nch	1
Top of Pit	cf. Scutallaria	seed/nch,p	1
	Indeterminate	fruit/ch,frg	1
OP 12,A:B	Chenopodium	seed/nch	6
Bottom of pit			
OP13,RII	Gramineae	seed/ch	1
Ash stain			
OP16,H	Chenopodium	seed/nch	1
Surface	Gramineae	seed/ch	1
	Indeterminate cf Leguminosae	seed/ch	1
5A/5G	Gramineae aff. Poa	seed/ch	14
Sample C			
Hearth			
5A/5G,5H	Chenopodium	seed/ch	14
Soil Sample B	Gramineae aff. Poa	seed/ch	13
	Indeterminate	fruit/ch,frg	1
5C			
Occupation Level	Chenopodium	seed/nch	5
Component 2			
OP 18,B2	Gramineae aff. Poa	seed/ch	34
Soil stain	Gramineae	seed/ch	1
OP 18, (5G/H)	Gramineae aff. Poa	seed/ch	14
Feature 1	Indeterminate	seed/ch	1
	Indeterminate	fruit/ch,frg	4
OP 18			
T.P. 4/5	Gramineae aff. Poa	seed/ch	3

Component 3

T.P. 169			
Beneath hearth	Indeterminate	seed/nch,frg	1
T.P. 2K, Beneath milling stone	Juniperus	scale/ch	1
	Rumex	seed/nch	1

Note: nch - noncharred
ch - charred
frg - fragment(s)
aff. - seeds are similar to genus noted but do not exactly match the comparative specimens and therefore the identification is regarded as tentative
p - predated by insects or rodents

TABLE 2

POTENTIAL USES OF TAXA*

Taxum	Plant Part	Use
Chenopodium sp. goosefoot	leaf	Food: greens eaten raw or cooked (H-8, Z-7, GO-2, G-4, G-9)
		Medicinal: greens used for stomach-ache, intestinal worms (Ta-5)
	seed	Food: gathered, eaten raw or ground (Z-7, G-1, G-4, G-9)
Gramineae grass**	seed	Food: seeds eaten, ground into flour, pinole (H-8, N-3, Te-6, Z-7, GO-2, G-1, G-9)
	stalk/whole plant	Ceremonial: attached to prayer sticks, used in ceremonies (N-3, Z-7)
		Other: used for mats, made into brooms, brushes (N-3, Ta-5, Te-6, Z-7)
Juniperus sp. juniper	fruit	Food: eaten fresh, cooked, used for seasoning (H-8, Ta-5, Te-6, G-1, G-4, G-9)
	leaf	Medicinal: Laxative, child birth, bruises, sprains, (H-8, Te-6, Z-7)
	wood	Fuel: used for (H-8, N-3, Te-6, Z-7)

Note: *Only taxa recovered in a charred condition are included
**potential uses derived from ethnographic descriptions of specific genera

Table 2
H - Hopi
N - Navajo
GO - Gosiute
Ta - Turahumar
Te - Tewa
Z - Zuni
G - general or broad description for west-southwestern Native American Groups

Sources:
1 - Castetter 1935
2 - Chamberlin 1911
3 - Elmore 1944
4 - Harrington 1967
5 - Pennington 1963
6 - Robbins et al. 1916
7 - Stevenson 1915
8 - Whiting 1936
9 - Yanovsky 1936

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