University of Montana
Contributions To Anthropology, Number 2

ARCHEOLOGY OF THE LOWER BIGHORN CANYON, MONTANA

By

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Lincoln, Nebraska

1969



Aerial View Southwest, up the Big Horn Canyon.
Photo: Bureau of Reclamation, U.S. Dept. of the Interior.

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4 Artifacts of Bull Elk Site (24BH212).

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11 Artifacts of Dry Head Site (24CB203).

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INTRODUCTION

Archeological field work within the lower Yellowtail Reservoir of the Bighorn Canyon in southeastern Montana was conducted from June 18, 1962 to September 7, 1962 as a part of the Inter-Agency Archeological Salvage program combining the cooperative efforts of the Smithsonian Institution, the National Park Service, the Corps of Engineers, the Bureau of Reclamation, and various state and local agencies.

A preliminary archeological reconnaissance of the Yellowtail Reservoir was made by a crew of two men from the Smithsonian Institution, River Basin Surveys, in August, 1946 (Hughes and Bliss 1947). A second reconnaissance team conducted additional investigation between July 30 and August 19, 1950, and a final probe was undertaken in July, 1951 (Fenenga 1952). Investigations resulted in the location of 41 sites within the Yellowtail Reservoir. Six of these and two additional sites not recorded prior to 1962, are located in the lower end of the reservoir. These eight sites were investigated in 1962 under the direction of the writer with a crew of five men.

The Yellowtail Dam is located on the Bighorn River approximately 42 miles southwest of Hardin, Montana. The reservoir is 71 miles long extending through the canyon and into the Bighorn Basin in northern Wyoming. About nine air miles south of the Montana-Wyoming state boundary the reservoir increases from a width of less than one mile to a maximum width of two miles. The reservoir has a water surface of about 17, 300 acres, and a maximum depth of nearly 500 feet.

A note of appreciation is extended to the following individuals for their cooperation during the field work and for their assistance in the preparation of this manuscript. To Dave Allen, project geologist for the U. S. Bureau of Reclamation, for his aid in locating a guide with pack horses and for his assistance in other matters during the summer. To Stuart Conner and John Schulte of the Billings Archaeological Society for their interest in the project and for providing information regarding sites in the area. To the U. S. Bureau of Reclamation, Billings, Montana for the use of a photograph of Bull Elk Canyon. To Larry Seekins, U. S. Bureau of Reclamation engineer, and his family for their hospitality in opening their home to the crew during the infrequent trips outside the canyon. To Steve Kenny of Hardin, Montana for

the benefit of his skillful services as a guide and his expert knowledge of the canyon terrain. To Alice Kehoe, then of the Saskatchewan Museum of Natural History, and Roger T. Grange, Jr., formerly of the Nebraska Historical Society, for their assistance in the identification of pottery remains. Appreciation is likewise extended to Dr. Robert L. Stephenson, formerly of the RBS, and Dr. Warren W. Caldwell, Director of the River Basin Surveys, for their advice and assistance, and to the staff of the River Basin Surveys who aided in the technical preparation of this manuscript.

PHYSIOGRAPHY OF THE AREA

The meandering Bighorn Canyon extends between the border of the Great Plains and Rocky Mountain physiographic provinces (Fenneman 1931:160), flanked on the west by the Pryor Mountains and on the east by the Bighorn Mountains. The most prominent structural feature in this area is the Bighorn Mountain range, which extends in a northwesterly direction for 150 miles from north-central Wyoming to south-central Montana. The width of the range decreases from nearly 30 miles in Wyoming to a point where it pinches out about 25 miles northwest of the Bighorn Canyon. The mountains in Montana are relatively low in contrast to those in northern Wyoming. West of the Bighorn Mountains, in Wyoming, the Bighorn River flows through the Bighorn Basin prior to its entrance into the canyon. The basin extends in a northwesterly direction for a distance of about 100 miles and is bordered by the Bighorn Mountains on the east and by the Absaroka Mountain range on the west.

The rugged Bighorn Canyon has vertical walls generally ranging from 200 feet in height at the upper end to about 1,000 feet at the southern tip of the Pryor Mountains. However, at one point it reaches a maximum height of approximately 2,300 feet at its junction with Bull Elk Canyon, 12 miles from the canyon mouth. The canyon is the result of downcutting by the Bighorn River which was superimposed over the mountains, cutting almost at right angles to the resistant strata. The vertical canyon walls illustrate rapid degradation which occurred since superimposed drainage brought the river across the resistant beds in late Pliocene time (Schulte 1961). Repeated episodes of downcutting and aggradation controlled by the glacial and interglacial stages, is reflected in multiple terrace developments. In most portions of the canyon only one or two terraces are plainly visible, but three prominent terraces exist in the Bull Elk area. Aboriginal campsites generally occur on the lower terraces. Small alluvial terraces on the canyon floor were deposited in recent times. Upstream from Dry Head Creek the canyon bottom is about one-quarter mile wide and has steep talus slopes of limestone. Downstream from this point the canyon expands in places to five times this width, with gently sloping talus slopes and broad terraces, in some localities as high as 700 feet above the river.

The Bighorn River, the primary stream of the area, originates at the southern end of the Bighorn Basin as a continuation of the Wind River, of Wyoming. After leaving the canyon the Bighorn River flows

across a wide floodplain and meanders north to join the Yellowstone River about 60 miles beyond the canyon mouth. The river flows swiftly through the canyon, carrying a large quantity of silt from the lowlands of the Bighorn Basin. The average discharge of water, prior to dam construction, was about 3,500 cubic feet per second at the canyon mouth (Richards 1955:7). Several clear water creeks begin in the smooth uplands above the canyon and flow into the Bighorn River. These creeks have steep canyons like the Bighorn River, as a result of cutting through the strata at right angles. In the lower Yellowtail Reservoir these include: Black Canyon Creek, Bull Elk Creek, and Dry Head Creek (Figure 2). In addition, numerous small springs flow from the limestone formation in the bottom of the canyon.

The climate of the area is semi-arid, with an average annual precipitation of 15.33 inches measured at the nearby Crow Agency (1903 to 1941). The month of January has an average precipitation of 0.80 of an inch and July has 1.35 inches. May and June are the wettest months of the year, each customarily having over 2.00 inches of average rainfall. Precipitation in the surrounding mountainous areas is considerably greater. Snow begins to fall in September and normally ceases in the early spring. The frost-free season generally lasts from May 13 to September 25. Temperatures recorded at the Crow Agency between 1904 and 1941 range from a low of -50 degrees to a high of 110 degrees F. Temperatures averaged 19.7 degrees F. for the month of January and 72.6 degrees F. for the month of July. The months of July and August are the hottest of the year (United States Department of Agriculture 1941:955).

Floral resources of the Bighorn Canyon are similar to those listed by Cary (1917) for the Upper Sonoran zone of northeastern Wyoming. Varieties which yield edible fruit, bulb, or seed include Juniper, Pine, Chokecherry, Prickly pear, Elderberry, Strawberry, Buffaloberry, Huckleberry, Giant wild rye, Wheat grass, Sunflower, Camas, Onion, and Buffalo pea. Although far from being complete, this list suggests the major plant resources in the area which could have been used by prehistoric peoples to supplement their diet.

The Bighorn Canyon and the area surrounding it have a wide variety of both large and small game animals. Big game animals include bison, elk, mule deer, antelope, black bear, and mountain lion. Smaller game include both jack and cottontail rabbits, badger, mink, grouse, beaver, muskrat, turtle, ground squirrel, and the grasshopper mouse. Several varieties of waterfowl and fish, among them trout, suckers, and catfish, are found in the Bighorn River and its tributaries.

ETHNOGRAPHICAL AND ARCHEOLOGICAL BACKGROUND

Several Indian groups have either occupied or were known to camp in this section of the Northwestern Plains. Principally, these include the Crow, Arapaho, Shoshone, Cheyenne, and Kiowa. Information regarding the locations of these groups in southeastern Montana has been, for the most part, obtained from ethnographic reports and the accounts of early explorers and traders. The accounts vary, and often conflict with one another, indicating a complex picture of nomadic life among the aboriginal groups of the region.

Intermittent occupancy of southeastern Montana is indicated for the Arapaho, Cheyenne, and Kiowa (Swanton 1952:387, 390, 392). These groups, or bands of these groups, are known to have resided or camped in this section at one time or another in their history. The Shoshone formed a more intensive occupation, ranging over a considerable portion of eastern Montana as far north as the Milk River (Swanton 1952:395).

Ethnographically the Crow are one of the better known Indian groups in the Plains area having attracted early anthropologists and having been intensely studied in terms of social structure and customs by Lowie (1918) and others. Linguistically the Crow are most closely related to the Hidatsa of North Dakota. The close affinity between the languages was first mentioned by traders in the 19th century (Denig 1953:20, footnote). Larocque in 1805 had noted resemblances between the languages and had compiled a brief vocabulary to illustrate the similarities (Larocque 1910:68). Both Crow and Hidatsa traditions claim that these two Siouan speaking peoples were closely aligned at one time (Lowie 1918:272). Denig placed the separation about 1776, as reported by Hayden (1862:391), but Swanton (1952:391) placed the latest possible period for the Crow-Hidatsa separation as sometime early in the 19th century. Both dates appear to be somewhat late in view of the fact that the Crow were well established as nomadic hunters in the Northwestern Plains when the first explorers arrived late in the 18th century.

According to Denig (1953:21), the boundaries of aboriginal Crow occupancy included the Yellowstone River and its tributaries, the Musselshell River to the north, the Powder River to the east, and the Wind River to the south. Since the Bighorn Canyon is in the heart of

Crow territory it is reasonable to assume, on spatial and temporal grounds, that the historic campsites in the canyon probably represent Crow occupation.

Within the general region described above Mooney estimated that in 1780 the Crow consisted of 4,000 individuals (Mooney 1928:13). A lower figure for twenty-five years later was provided by Larocque who estimated the Crow population to have been approximately 300 lodges, reduced from 2,000 lodges by successive smallpox epidemics (Larocque 1910:55).

The Northwestern Plains region was formerly regarded as an area possessing little significance in terms of aboriginal peoples prior to the introduction of the horse. This concept was held by Kroeber as late as 1939, in his characterization of cultural and natural areas in North America (Kroeber 1939:76).

Realization that the Northwestern Plains were occupied was made evident from excavations at the Hagen Site and Pictograph Cave in eastern Montana. The abundance and diversity of remains from these two sites made it obvious that the Northwestern Plains has a long and varied culture history. Published results of these two excavations produced a basis for the ordering of data from subsequent excavations in the area (Mulloy 1942; 1958).

In synthesizing archeological material from the Plains, Mulloy (1958:219-221) established a preliminary culture chronology divided into four major periods: Early Prehistoric, Middle Prehistoric, Late Prehistoric, and Historic. The Middle Prehistoric is subdivided into Early and Late Middle Prehistoric periods. The accompanying trait lists for each period has provided a useful basis for ordering the increasing archeological data from the Northwestern Plains. Mulloy's chronology sequence is summarized as follows:

Early Prehistoric: ca. 12000 - 4000 B.C.
Folsom, Eden Valley, Scottsbluff, Browns Valley, Hot Springs.

Middle Prehistoric: ca. 1500 B.C. - A.D. 500
Early Middle: ca. 1500 B.C. - A.D. 1
Signal Butte I, Pictograph Cave I, Promontory Cave II (42" to 81" level).

Late Middle: ca. A. D. 1 - 500
Signal Butte II, Pictograph Cave II, Billings Bison Trap (lower level), Promontory Cave (30" to 42" level), Ash Hollow Cave (Lenses F-G).

Late Prehistoric: ca. A. D. 500 - 1800
Ludlow Cave, Hagen, Ash Coulee, Emigrant Bison Trap, Thirty Mile Mesa, Promontory Cave I and II (surface to 30" level in Cave II), Signal Butte III, Ash Hollow Cave (lenses B-E), Pictograph Cave III, Ghost Cave.

Historic: ca. A. D. 1800
Pictograph Cave IV, Ash Hollow Cave A, Ludlow Cave (upper levels), Thirty Mile Mesa, Empty Gulch test pits (upper level).

Although the sequence indicates a hiatus from about 4000 B. C. to 1500, Mulloy points out that subsequent radiocarbon dates fall within this time span, and that he would push both the Early Middle Prehistoric and Late Middle Prehistoric Periods further back in time, probably extending the Early Middle Prehistoric from about 2500 - 1500 B. C. and the Late Middle Prehistoric from approximately 1500 B. C. - A. D. 500 (Mulloy 1958:222-223).

The sequence outlined by Mulloy was a preliminary ordering of data based solely upon temporal considerations, overlooking spatial and cultural implications. It made no pretence of going beyond the arrangement of archeological complexes according to their relative ages. While realizing the disabilities inherent in such a system, the sequence did provide a reasonably good indication of the time depth involved in Northwestern Plains prehistory and the necessity of recognizing broad horizons in an otherwise unordered body of archeological data. However, as the corpus of data increases, more refined concepts with spatial and cultural as well as temporal distinctions will be needed for a more useful interpretation of culture history.

The author herein expresses his opinion that a system such as that outlined by Willey and Phillips (1958) would have considerable merit as a device for depicting complex relationships between Northwestern archeological assemblages. However, the task of organizing and summarizing the archeological data from this region is a formidable one, and it must be based upon an adequate sampling of the assemblages representative of the region. It is recognized that a substantial number

of excavated sites remain unpublished and that, insofar as the potential of the region is concerned, archeological field work is still in a state of infancy.

Without attempting to prematurely fit all of the Bighorn Canyon materials included in this report within the Willey and Phillips schema, the author has employed the concept of the "phase" in discussing two Bighorn Canyon components. Elsewhere in this report, Mulloy's chronological sequence is used as a convenient means of expressing relative temporal distinctions in a broad sense.

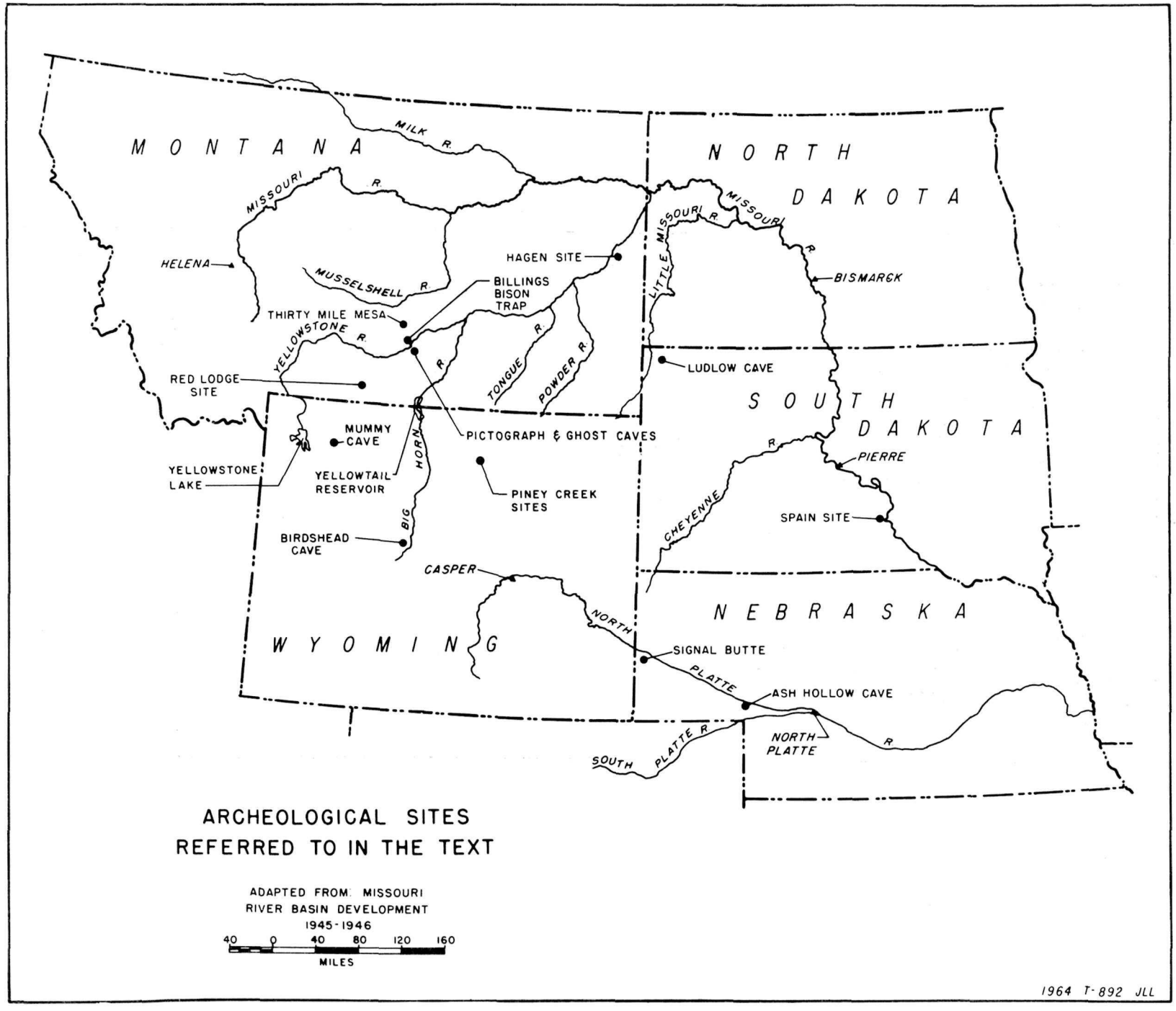

MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
NEBRASKA
MILK R.
MISSOURI R.
HELENA
MUSSELSHELL R.
HAGEN SITE
BILLINGS BISON TRAP
THIRTY MILE MESA
YELLOWSTONE R.
BIG HORN R.
TONGUE R.
POWDER R.
LITTLE MISSOURI R.
MISSOURI R.
BISMARCK
LUDLOW CAVE
RED LODGE SITE
MUMMY CAVE
PICTOGRAPH & GHOST CAVES
YELLOWSTONE LAKE
YELLOWTAIL RESERVOIR
PINEY CREEK SITES
PIERRE
CHEYENNE R.
SPAIN SITE
BIRDSHEAD CAVE
CASPER
NORTH PLATTE R.
SIGNAL BUTTE
ASH HOLLOW CAVE
SOUTH PLATTE R.
NORTH PLATTE R.
ARCHEOLOGICAL SITES
REFERRED TO IN THE TEXT
ADAPTED FROM: MISSOURI
RIVER BASIN DEVELOPMENT
1945-1946
40 0 40 80 120 160
MILES
1964 T-892 JLL

Figure 1

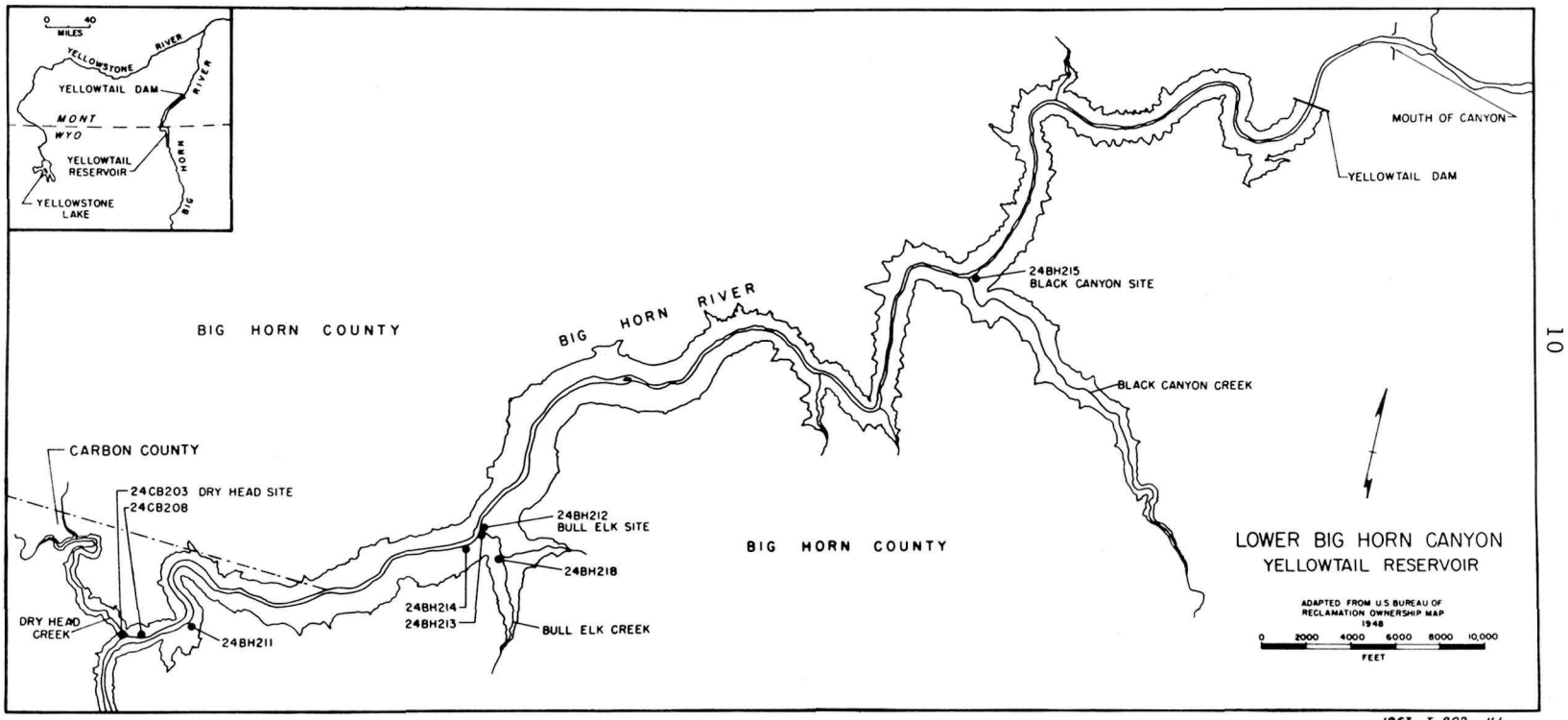

0 40
MILES
YELLOWSTONE RIVER
YELLOWTAIL DAM
BIG HORN RIVER
MONT
WYO
YELLOWTAIL RESERVOIR
YELLOWSTONE LAKE
BIG HORN RIVER
BIG HORN COUNTY
CARBON COUNTY
24CB203 DRY HEAD SITE
24CB208
DRY HEAD CREEK
24BH211
24BH212
BULL ELK SITE
24BH214
24BH213
24BH218
BULL ELK CREEK
BIG HORN COUNTY
24BH215
BLACK CANYON SITE
BLACK CANYON CREEK
MOUTH OF CANYON
YELLOWTAIL DAM
LOWER BIG HORN CANYON
YELLOWTAIL RESERVOIR
ADAPTED FROM U.S. BUREAU OF RECLAMATION OWNERSHIP MAP 1948
0 2000 4000 6000 8000 10,000
FEET
1963 T-802 JLL

Figure 2

MAJOR SITES INVESTIGATED

Bull Elk Site

The Bull Elk Site (24BH212) is situated on a multi-terraced slope on the right bank of Bull Elk Creek where it joins the Bighorn River, approximately 11 river miles upstream from the mouth of Bighorn Canyon (Figure 2). Bull Elk Creek, resulting from the junction of Big Bull Elk and Little Bull Elk creeks, is situated in an open area within the Bighorn Canyon. Vertical distance from the canyon rim to the Bighorn River at this point is approximately 2,300 feet. The creek bank is dense with trees and bushes. The lowest of the three flat alluvial terraces is grass covered, with trees, mostly juniper, scattered sparsely along the edges. The upper two terraces are grass covered, but lack larger vegetation.

The Bull Elk Site is separated into four units, Areas A, B, C, and D, based on the geographical separation of four occupation areas (Figure 3). Area A is situated near the edge of the uppermost terrace, which is approximately 60 feet above the Bighorn River. Areas B and D are located on the middle terrace, 15 feet lower than the upper terrace. The middle terrace is discontinuous, having been eroded through by water action when the lower terrace was formed; Areas B and D are separated by this discontinuity. Area C is located on the bottom terrace, approximately 16 feet lower than the middle terrace.

The only visible surface features at the Bull Elk Site were tipi rings located near the edge of the middle terrace (Areas B and D). Tipi rings consisted of single annular rows of from 12 to 23 water-worn stones which were approximately 1.0 foot in length and embedded from 0.1 to 0.2 foot below the ground surface. The circular configurations ranged from about 13.0 to 23.0 feet in diameter.

Excavation was first directed toward locating an occupation layer in Area A. Twenty test pits, each about 5.0 feet square, were dug to depths of approximately 2.5 feet near the edge of the upper terrace where a few chips had washed out. A single fire hearth was the only evidence of occupation. Efforts were abandoned in this area and then directed to Areas B, C, and D.

Tipi rings in Areas B and D were excavated by the following method. The stone circles, visible on the ground surface prior to ex-

cavation, were mapped after clearing the surrounding grass. Each circle was treated as a separate feature and excavated as such. Horizontal control was maintained by triangulation of two fixed points outside the stone circle, and vertical control was established by measuring distances below the ground surface. Dirt was removed by skimming with shovels and the use of trowels. Materials recovered were sacked according to exact horizontal location and depth below surface within each tipi ring. Three tipi rings in Area B and five in Area D were partially excavated. Excavations were carried to depths of 0.6 foot below the surface in Area B and 1.5 feet below the surface in Area D. Eight test pits, each 5.0 feet square, in area B, and about 1.5 feet deep, failed to reveal evidence of occupation.

Most of the work at the Bull Elk Site was devoted to the excavation of Area C, where test pits exposed a campsite with three cultural levels. Horizontal control was set up by the use of a north-south grid consisting of 5.0 foot squares, and the vertical control was established by excavating according to the visible strata. Fill from Area C was removed by careful skimming and trowel work; materials recovered were sacked according to the grid provenience and the level in which they were found. The deepest excavation in Area C was 3.2 feet below the ground surface.

Stratigraphy

The stratigraphy in Areas A, B, and D was uniform. It consisted of a layer of gray soil about 0.5 foot thick mantling a deposit of brown soil which continued downward to at least 2.5 feet below the ground surface. No occupation layers were visible in these areas.

The strata of the campsite in Area C consisted of several distinct layers of water deposited sand, gravel, and cobble stones (Figure 4). The basal stratum was a bed of river cobbles ranging from 0.4 to 0.6 foot in length occurring at a depth of approximately 2.3 feet below the surface. Above the cobbles there was a gravel deposit 1.0 to 1.5 feet thick. Both deposits were sterile. The earliest cultural stratum in Area C (Level 1) was a lens of dark charcoal stained sand about 0.2 foot overlaying the gravel deposit. The depth of Level 1 varied from 1.0 to 2.5 feet below the surface. A large portion of Level 1 had been removed by later occupants of the site; only a few artifacts and bone fragments remained in the 350 square feet excavated. Level 1 was mantled with a layer of gray sand in the southern

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Figure 3

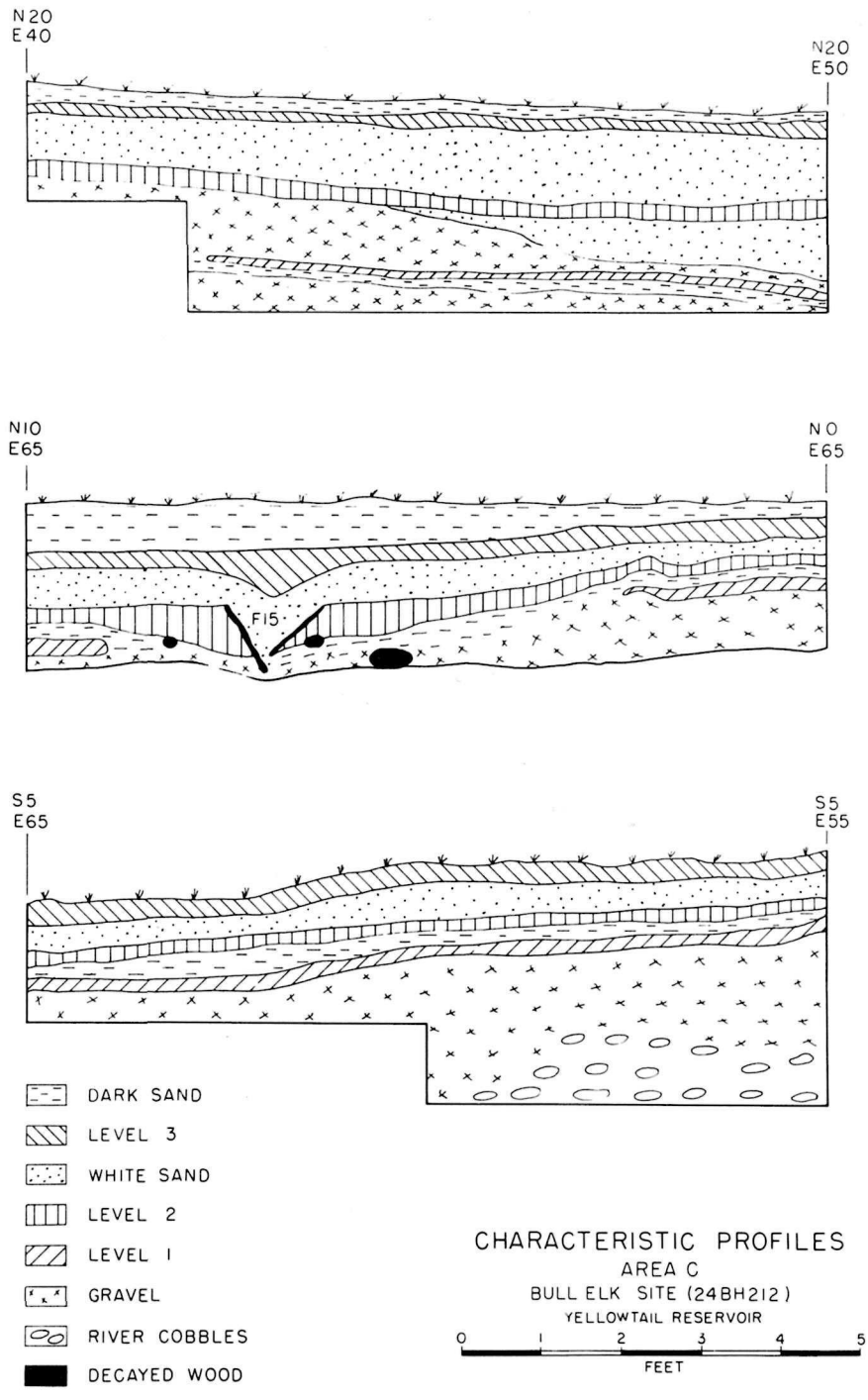


Figure 4

1963 T-815 JLL

and eastern portions of the site, and with a deposit of gravel capped with a mixture of white and green clay in the northern portion; both of these layers were sterile.

The second cultural stratum of Area C (Level 2) was a dark, charcoal stained sand lens 0.2 foot thick and varying from 0.7 to 2.2 feet below the surface. The excavated area in Level 2 was approximately 750 square feet in extent. This occupation zone was capped with a layer of sterile white sand varying from 0.2 to 1.0 foot in thickness; the sand deposit was thickest on the uphill portion of the site becoming gradually thinner as the ground surface sloped downward toward Bull Elk Creek.

The latest occupation (Level 3) was evidenced by a layer of charcoal stained sand, directly above the white sand. It varied from 0.2 to 0.3 foot in thickness and pinched out to the north, east, and west. About 1,300 square feet of Level 3 was excavated. Above Level 3 was a sterile layer of gray sand 0.1 to 0.7 foot thick which covered the entire excavated portion of the site.

Features

For descriptive purposes, each geographical area of the Bull Elk Site (Areas A, B, C, and D) is regarded as an autonomous unit, and descriptions of features from each unit are grouped according to the area in which they were found.

Area A

The only feature excavated was the scattered remains of a fire hearth 0.7 foot below the ground surface. The hearth, covering an area approximately 1.6 feet in diameter, consisted of four fire blackened rocks and a thin charcoal lens.

Area B

Feature 1 was a tipi ring about 23.0 feet in diameter consisting of 21 stones (Figure 5). A basin-shaped fire pit, located in the center of Feature 1, measured 2.5 feet in diameter and 0.5 foot in depth. The top of the fire pit was 0.2 foot below the ground surface. Fill within the fire pit consisted of charcoal stained sand and small bone fragments. Fourteen fire cracked rocks were found scattered around the

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Figure 5

fire pit. A midden area, located outside the limits of the tipi ring, was nearly 6.0 feet in diameter, 0.1 foot thick, and contained a matrix of ash and charcoal stained sand. The top of the midden was 0.2 foot below the surface. There was no evidence to indicate a prepared floor within Feature 1, but a living surface is indicated at a depth of about 0.2 foot below the ground surface. The living surface is inferred by the presence of the fire pit, midden area, artifacts, and outer stones of the tipi ring, all of which were approximately 0.2 foot below the surface. Excavation of Feature 1 reached a depth of 0.5 foot below the ground surface, but no additional cultural debris was found.

Feature 2 was a tipi ring roughly 20 feet in diameter composed of 18 stones (Figure 6). The only evidence to suggest a living surface was a thin fire pit 0.25 foot below the ground surface. The fire pit was 1.2 feet in diameter, 0.1 foot in thickness, and contained a fill of burned earth and charcoal stained sand. Fire blackened rocks were found scattered around the fire pit. The majority of artifacts from Feature 2, four of five specimens, were confined to the northwest section of the tipi ring. Feature 2 was excavated to a depth of 0.5 foot below the surface.

Feature 3 was a tipi ring about 18 feet in diameter composed of 23 waterworn stones (Figure 7). A semi-circular configuration of seven small stones was noted on the ground surface near the center of the tipi ring. Center stones were neither fire cracked nor fire blackened, and they do not appear to have been part of a fire hearth. The only evidence of a floor or living surface within Feature 3 was a central fire hearth (a hearth as used here is a fireplace without a pit). The top of the hearth was 0.25 foot beneath the ground surface. It measured 3.2 feet in diameter and was 0.2 foot thick. The hearth area consisted of scattered fire blackened rocks, charcoal stained sand, and a burned earth area about 1.0 foot in diameter. At 0.6 foot below the surface a basin-shaped fire pit was uncovered beneath the western boundary of the tipi ring, but the pit does not appear to have been associated with Feature 3. The fire pit measured 2.3 feet in diameter, 0.3 foot in thickness, and contained a matrix of burned earth and charcoal stained sand. Fire cracked rocks were scattered around the fire pit. Excavation of Feature 3 ceased at 0.7 foot below the ground surface.

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Figure 6

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Figure 7

Area C

Structures

Feature 5 consists of 30 postholes arranged in an irregular pattern suggesting an open-ended wooden structure such as a lean-to (Figure 8). The posthole pattern measured approximately 20.0 feet in length and 14.0 feet in width. The molds were uniformly small, ranging from 0.3 to 0.5 foot in diameter and from 0.1 to 0.4 foot in depth. The sides of the molds were generally straight and the bottoms were flat. Easily distinguished from the white sand beneath, the postholes contained a fill similar to that of the occupation level. Two postholes contained burned bone fragments. One yielded two small pieces of fire cracked rock. Another included a badly decayed piece of wood approximately 0.2 foot in length. A fifth posthole produced three brass fragments with beveled edges. The posts were small in diameter and not set very deeply into the ground, suggesting that the frame was of a temporary nature and not built to withstand unfavorable weather. This observation, coupled with the open-sided effect of Feature 5, implies a summer occupancy.

Feature 15 consists of the remains of what was once probably a wooden structure, approximately 15.0 feet long and 8.0 feet wide. The remains of Feature 15 were so badly decayed that little can be positively stated regarding its form and use. Included within Feature 15 were ten postholes filled with decayed wood, six or seven horizontal decayed logs, a pit with a wooden cover, and an enigmatic concentration of charcoal stained sand and decayed wood.

Seven irregularly spaced postholes in the eastern portion of Feature 15 ranged from 0.3 to 0.6 foot in diameter and from 0.2 to 0.8 foot in depth. They extended into the sterile gravel layer below. Three postholes located to the west were 0.2 foot in diameter and extended 0.3 to 0.7 foot into the concentrated area of decayed wood and charcoal stained sand. Little can be determined about the shapes or original positions of the horizontal logs, but five had a diameter of approximately 0.2 foot and a sixth measured approximately 0.5 foot in diameter. They extended in a general east-west direction and were located primarily in the western portion of the feature.

Situated directly above three of the logs was a small pit with the sides slanting inward (Figure 4). The pit measured 1.2 feet in diameter, 0.9 foot in depth, and from appearances, was empty when abandoned,

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Figure 8

allowing the wooden cover to collapse and subsequently filling the pit with white sand from above.

The enigmatic concentration of mixed charcoal stained sand and decayed wood in the eastern portion of Feature 15 was irregular in shape, although roughly circular, and measured about 3.0 feet in diameter and 0.9 foot in depth. The bottom of this configuration appeared to have been lined with bark. The mixed fill, the irregular shape, and the presence of logs suggest this was a part of a wooden structure which had collapsed after abandonment.

Fire Pits and Hearths

Three circular basin-shaped fire pits contained a relatively homogeneous fill of charcoal stained sand and an occasional piece of fire cracked rock, charcoal, and burned bone. The fire pits were not given feature numbers. They ranged from 1.9 to 2.5 feet in diameter and from 0.1 to 0.2 foot in depth. One of the three pits at first appeared to have a cobble-filled bottom, but further excavation revealed this to be a natural cobble layer into which the pit was dug.

Features 7 and 14 were circular straight sided or U-shaped fire pits with a mixed fill of charcoal stained sand, fire blackened rocks, bits of burned bone, and irregular ash lenses. Both were approximately 1.7 foot in diameter and 1.1 foot deep. Feature 7 continued down about 0.7 foot into the gravel layer beneath; at the bottom of the pit were fire blackened rocks and a thin ash lens. Feature 14 was actually a double fire pit extending from Level I into the gravel layer below. The double pit was partially lined with a gray ash lens and was filled with bone fragments and large pieces of charcoal.

Feature 3 was a circular cobble filled fire pit with sloping sides. It was approximately 1.9 foot in diameter and 0.7 foot deep. The pit fill consisted of charcoal stained sand, specks of charcoal, and a group of 25 fire blackened and cracked rocks. The rocks were present from the top of the fire pit and extended down to the pit bottom.

Four hearth areas (fire places without pits or depressions) were excavated, but were not given feature numbers. Each consisted of a small group of ten to twelve fire blackened stones mixed with charcoal stained sand and specks of charcoal. The stones of one hearth were scattered. Hearths ranged from 1.3 to 2.1 feet in diameter.

Storage Pits

Five circular straight sided storage pits were excavated, but were not given feature numbers. Three pits were approximately 1.0 foot in diameter and 1.0 foot deep. The other two were about 0.6 foot in diameter and 0.5 foot deep. Fill within the fire pits consisted of charcoal stained sand and occasional bone fragments.

Midden Areas

Features 4, 9, and 10 were concentrated areas of mammal bones, chipped stone fragments, fire cracked rocks, and chunks of charcoal. Feature 4 was roughly 2.6 feet in diameter and 0.4 foot thick. Feature 9 was scattered over an area approximately 12.0 feet in diameter, and it was less than 0.2 foot thick. Feature 10 covered an area nearly 6.0 feet long, 3.0 feet wide, and was about 0.2 foot thick.

Table 1. Vertical distribution of features, Area C Bull Elk Site.

	Level 1	Level 2	Level 3	Totals
Posthole pattern		1	1	2
Basin-shaped fire pits, homogeneous fill.			3	3
Cobble filled fire pit			1	1
U-shaped fire pits	1		1	2
Fire hearth areas, without pits		1	3	4
Storage pits			5	5
Midden areas		1	2	3
TOTALS:	1	4	16	20

Area D

Feature 1 was a tipi ring about 18.0 feet in diameter consisting of 17 surface stones arranged in a circular fashion and five surface stones located in the center (Figure 9). A pit four feet square was excavated in

Location map has been removed from the electronic edition
in an effort to protect sensitive cultural resources.

Figure 9

Due to a printing error, pages 25 and 26 were missing from the original publication (pages 23 and 24 were duplicated).

Area B

Pottery Sherd
(1 specimen)

A body sherd about 25.0 mm. long, 20.0 mm. wide, and 6.0 mm. thick is tempered with limestone and quartzite particles ranging from 1.0 to 3.0 mm. in diameter (Plate 3h). Surface texture is medium fine and the core is compact; both the interior and exterior surfaces are gray. The exterior surface is smooth. Two narrow incised lines, one straight and the other U-shaped, are present on the exterior, but they do not appear to be attempts at decoration. The sherd is from Feature 2.

Projectile Point
(1 specimen)

A triangular point with convex edges and a straight base is bifacially worked on both edges and the base, but it has the appearance of being an unfinished product (Plate 4a). The material is chert. The specimen is 43.0 mm. long, 27.5 mm. wide, 7.0 mm. thick, and weighs 4.2 gm. It is from Feature 1.

Knife Fragment
(1 specimen)

The basal section of either a rectangular or an ovate chert knife is pressure flaked on the edges and the base, but the faces are unretouched (Plate 4e). It is 40.0 mm. long and 32.0 mm. wide. The fragment was found in a test pit, 1.0 foot below the ground surface.

End Scrapers
(2 specimens)

Rectangular plano-convex examples having a gently sloped scraping surface on one end, and a slight bulb of percussion on the ventral surface of the other (Plate 5b, h). They are pressure flaked on the edges and on the working ends. Both are made of chert. One example is 58.0 mm. long, 31.0 mm. wide, and 10.0 mm. thick. The other specimen measures 45.0 mm. in length, 25.0 mm. in width, and 8.0 mm. in thickness. Association is with Feature 2.

Side Scrapers
(3 specimens)

Rectangular to ovate pieces of chert are carefully pressure flaked on one edge (Plate 5c, e, f). They range from 22.0 to 61.0 mm. in length, 15.0 to 31.0 mm. in width, and are less than 5.0 mm. thick. Two examples are from Feature 3 and one specimen is from Feature 1.

Drill
(1 specimen)

A triangular quartzite drill has straight to slightly concave edges and a concave base (Plate 5o). It is pressure flaked on the edges and the base, but the major flaking effort was directed toward preparation of the tip. The specimen is 38.0 mm. long, 22.0 mm. wide, and 8.0 mm. thick. It is from Feature 1.

Chopper
(1 specimen)

A waterworn chert stone is irregularly flaked on two edges and on one face. It is 70.0 mm. long, 60.0 mm. wide, and 21.0 mm. thick. This is a surface find.

Miscellaneous Stone
(75 specimens)

Seventy-three unretouched and two retouched flakes were recovered from the tipi rings and test pits. The two worked flakes are irregularly pressure flaked on one edge.

Antler Tine
(1 specimen)

The distal end of an antler tine is scarred on one end suggesting that it was used as a knapping tool or for some similar purpose (Plate 6j). It is about 45.0 mm. long, and was recovered from Feature 2.

Area C

Projectile Points
(9 specimens)

1-(2 specimens)

Side notched points of dark chert have straight edges and a central basal notch (Plate 3d, e). Both examples are broken at a point above the side notches. Small flake scars occur both transversely and obliquely across the faces; the edges are retouched. Notches result from the detachment of single flakes. Specimens are 14.0 mm. wide and 2.0 mm. thick; the most complete example is estimated to have been approximately 28.0 mm. long.

2-(1 specimen)

A quartzite point has straight to slightly convex edges, a single side notch, and a straight base (Plate 3f). Pressure flaking scars occur obliquely on both faces. The specimen is 27.0 mm. long, 8.0 mm. wide, 3.0 mm. thick, and weighs 13.0 gm.

3-(1 specimen)

A broken corner notched point of chert with slightly convex edges, an expanding stem, and a straight base, is obliquely flaked on both faces and retouched on the edges. It is 22.0 mm. wide, and 5.0 mm. thick (Plate 3i).

4-(1 specimen)

A small, crudely made example of obsidian has straight sides and an expanding base (Plate 3g). Edges are unevenly pressure flaked with a slight indication of side notching; faces are unretouched. It is 19.0 mm. long, 14.0 mm. wide, 3.0 mm. thick, and weighs 2.1 gm.

5-(4 specimens)

Miscellaneous tip fragments of quartzite and chert have straight to slightly convex edges. Overall flaking scars extend obliquely across the faces.

Knives
(9 specimens)

1-(2 specimens)

These are ovate specimens made of quartzite and chert (Plate 4d, g). One lacking the tip and part of one edge, is thinned on both surfaces by the removal of large flakes. Edges are retouched by pressure flaking. It is 45.0 mm. wide, 9.0 mm. thick, and is estimated to have been 80.0 mm. long. The other specimen is pressure flaked on the edges; faces are unretouched. It is 48.0 mm. long, 34.0 mm. wide, and 7.0 mm. thick.

2-(1 specimen)

A lanceolate knife of gray chert, with blunted ends, is percussion flaked on both surfaces and pressure flaked on the edges (Plate 5a). It is 110.0 mm. long, 28.0 mm. wide, and 11.0 mm. thick.

3-(1 specimen)

An asymmetrical crescentic knife of red chert has one straight edge, one convex edge, a rounded tip, and a slightly concave base (Plate 5d). Transverse percussion scars occur on the faces; edges are pressure flaked. The basal section is thinned by the detachment of short longitudinal flakes. The specimen is 96.0 mm. long, 34.0 mm. wide, and 9.0 mm. thick.

4-(1 specimen)

A rectangular specimen chert is irregularly percussion flaked on both surfaces and evenly pressure flaked on the edges (Plate 4f). One edge is unifacially worked and the other is bifacially worked. The upper portion of the knife is missing, but the complete specimen is estimated to have been about 100.0 mm. long. The fragment is 30.0 mm. wide, and 12.0 mm. thick.

5-(4 specimens)

Three distal and one proximal knife fragments of chert and quartzite are evenly pressure flaked on the edges, but unretouched on the faces (Plate 4b, c). They are approximately 25.0 mm. wide and 5.0 mm. thick.

End Scrapers
(4 specimens)

1-(2 specimens)

Triangular plano-convex scrapers of chert are carefully pressure flaked on the edges; faces are unretouched (Plate 5k, l). The scraping end is high and steeply beveled; a bulb of percussion is visible on the ventral surface of the narrow end. One example is 46.0 mm. long, 37.0 mm. wide, and 8.0 mm. thick. The other is 24.0 mm. long, 23.0 mm. wide, and 6.0 mm. thick.

2-(2 specimens)

Ovate chert cores have a high, sharp dorsal ridge resulting from the removal of percussion flakes along the edges (Plate 5i, p). The widest end of each specimen is irregularly pressure flaked. Scrapers are about 50.0 mm. long, 42.0 mm. wide, and 20.0 mm. thick.

Side Scrapers
(22 specimens)

1-(9 specimens)

Thick rectangular pieces of chert and quartzite are pressure flaked on one or both edges; surfaces are generally unretouched (Plate 6a, b, e, f, h, i, m). Scrapers have a bulb of percussion on the ventral surface of either the widest or the thickest end. Measurements range from 51.0 to 109.0 mm. in length, 26.0 to 55.0 mm. in width, and from 9.0 to 15.0 mm. in thickness.

2-(13 specimens)

Thin irregular chert flakes are pressure flaked on one or two edges; surfaces are unretouched (Plate 5g, 6c, d). Specimens range from 22.0 to 42.0 mm. in length, 23.0 to 36.0 mm. in width, and they average about 6.0 mm. in thickness.

Chopper
(1 specimen)

An ovoid limestone chopper is irregularly percussion flaked on one edge (Plate 6g). The other edge consists of an old break. The specimen is 121.0 mm. long, 74.0 mm. wide, and 26.0 mm. thick.

Miscellaneous Stone
(3 specimens)

A chert core has three sides from which flakes have been detached by striking a blow at the top surface of the core. Two chert flakes are unifacially pressure flaked on one edge.

Bone Awl
(1 specimen)

The proximal end of a deer or antelope metapodial is split along its longitudinal axis and ground on its articular surface (Plate 61). The exterior side is polished and has small striation extending transversely across its surface. The specimen is 81.0 mm. long, 18.0 mm. wide, and 10.0 mm. thick at the butt end.

Cut Epiphysis
(1 specimen)

The epiphysis of a bison cannon bone is detached from the bone shaft approximately 67.0 mm. from the distal end of the bone (Plate 6k). This was done by cutting transversly on both sides of the bone and then breaking it. There is no evidence of wear.

Miscellaneous Worked Bone
(2 specimens)

Two small shaft pieces of long bones, one of a large mammal and the other of a bird, are cut and polished; there is no indication of their probable use.

Metal Scraps
(3 specimens)

Three small, jagged pieces of brass and one piece of iron comprise the contact material from this site (Plate 3a, b). They are associated with the postholes of Feature 5. The irregular brass pieces are uniform in size, measuring about 18.0 mm. in length, 10.0 mm. in width, and less than 1.0 mm. in thickness. The thinness of these three pieces can be attributed to beating the metal on a rough surface as evidenced by the peen marks. Each brass piece has a beveled edge which is sharp and appears to have been cut by tin snips or a cold chisel. The small iron fragment, 27.0 mm. long and 2.0 mm. thick, has ragged edges, and lacks evidence of either cutting or pounding.

Table 2. Vertical distribution of artifacts, Area C Bull Elk Site.

	Level 1	Level 2	Level 3	Surface	Totals
Projectile points:					
1.....			2		2
2.....			1		1
3.....			1		1
4.....			1		1
5.....		1	2	1	4
Knives:					
1.....			1	1	2
2.....			1		1
3.....			1		1
4.....			1		1
5.....	2		1	1	4
End Scrapers:					
1.....		1	1		2
2.....			2		2
Side scrapers:					
1.....	2	2	4	1	9
2.....		2	10	1	13
Chopper			1		1
Bone awl			1		1
Cut epiphysis.....			1		1
Metal fragments			4		4
TOTALS:	4	6	36	5	51

Area D

Projectile Point
(1 specimen)

A small, triangular side notched specimen of chert is broken at the base (Plate 3c). It is unevenly pressure flaked on the edges, and it measures 17.0 mm. in length, 7.0 mm. in width, and 2.0 mm. in thickness.

End Scrapers
(4 specimens)

Small rectangular plano-convex scrapers of chert are carefully pressure flaked on the edges and on the scraping ends (Plate 5m, n). All have a bulb of percussion on the narrow end of the ventral surface. Examples range from 15.0 to 41.0 mm. in length, from 12.0 to 27.0 mm. in width at the widest end, and from 5.0 to 15.0 mm. in thickness.

Side Scrapers
(2 specimens)

Scrapers of thin chert pieces are pressure flaked on one edge. They are about 25.0 mm. long and 10.0 mm. wide.

Identifiable Bone

Animal remains from the Bull Elk Site were scarce in Area C and almost non-existent in Areas A, B, and D. The faunal remains from Area C consist of fifty-six bones of mostly bison, deer, elk, and other large game animals. Level 1 in Area C contained only three bones, Level 2 yielded 23 pieces, and the latest occupation, Level 3, produced 30 bones. The sharp increase from Level 1 to 2 was probably the result of differential sampling due to the fact that the excavated portion of Level 1 was much less than that of Level 2. Faunal remains suggest that large game animals were of primary importance in the economic orientation of the groups who occupied this site.

Discussion

Excavations at the Bull Elk Site revealed two kinds of living situations. One is represented by the stratified campsite (Area C) in which the occupants probably resided either in the open or in temporary shelters of logs and branches. The other situation encompassed Areas B and D

indicating the use of conical skin-covered dwellings. Artifacts and features were more abundant in the stratified campsite, representing a more intensive occupation than the tipi rings. Scattered cultural remains from Area A suggest a sporadic occupation of undetermined cultural affiliation.

The stratigraphically separate cultural levels of the campsite in Area C represent three analysis units, i.e., components, each depicting a different interval of time at the site, whether of the same or of different archeological units (phases). The latest analytical unit, Component A, is represented by Level 3 and its constituent traits (features and artifacts, listed in tables 1 and 2 respectively). The discussion of Component A presented here is an interpretation of the data in terms of spatial, temporal, and cultural continuities reflected in other known Northwestern Plains assemblages.

The major feature of Component A is an irregular posthole pattern suggestive of an open sided temporary dwelling constructed of poles and branches. Similar dwellings are reported from the upper eight inch level at the Empty Gulch test pits near Pictograph Cave (Mulloy 1958: Figure 24) and from the latest cultural unit at the Dry Head Site, approximately four miles upriver from the Bull Elk Site. The Empty Gulch and Dry Head configuration are relegated to a post-contact horizon. Other features of Component A include items with limited comparative values (fire pits, storage pits, and midden areas).

The majority of artifacts from Component A are common forms found in the Northwestern Plains. Similarities are noted in varying degrees with materials from Pictograph Cave IV and the upper eight inch level of the Empty Gulch test pits (Mulloy 1958), the Hagen Site (Mulloy 1942), Birdshead Cave (Bliss 1950), Mummy Cave (Husted, personal communication), Piney Creek (Frison 1967), and Ash Hollow Cave (Champe 1946).

The small side notched projectile point with a central basal notch is a common variety in both the Northwestern and Central Plains regions. It occurs in Pictograph Cave IV, the Hagen Site, upper level of Empty Gulch, the latest level of Mummy Cave, Birdshead Cave (Levels V and VI), at Site 48JO312 (Piney Creek Site), and Ash Hollow Cave (Lenses A-D). The small side notched point with an expanding base is found in Pictograph Cave IV, Empty Gulch, and lens C of Ash Hollow Cave. Both point forms are diagnostic traits of Mulloy's Late Prehistoric and Historic periods. At Mummy Cave a radiocarbon date of A. D. 1580±90

years was obtained from a level producing both forms (Husted, personal communication). The large triangular corner notched specimen from Bull Elk appears to be a rather non-diagnostic form occurring in most of the above mentioned sites.

Asymmetrical crescent shaped knives of the type found at Bull Elk are an oddity in the Northwestern Plains, but they do occur sporadically in surrounding regions. They are found, for example, in the Spain Site in South Dakota (Smith and Grange 1958: Plate 32); and to the west, similar knives, but with one concave edge, occur in the Brown's Bench inventory of southern Idaho (Bowers 1962: Figure 10). Rectangular knives with straight or pointed bases and ovoid knives with straight to convex bases are present in the Hagen, Red Lodge, and Ghost Cave materials and at Site 38JO312 (Piney Creek Site). Ovoid knives also occur in the upper level of the Empty Gulch test pits.

Artifacts similar to the end scrapers and side scraper Component A are found in prehistoric and post-contact sites in the Plains, but they are of limited comparative value. A possible exception is the large, thick, bilaterally flaked side scraper which occurs predominately in Pictograph Cave III and in Ghost Cave. Gravers and drills are conspicuously absent in the Component A inventory, and bone artifacts are rare. Metal items, indicative of historic contact, include brass and iron pieces associated with the posthole pattern.

In general, cultural materials from Component A are viewed as part of a generalized culture pattern with strongest affiliations seen with sites situated along the Yellowstone River. The exact nature of this pattern is not fully understood; however, it probably represents a highly mobile population with a hunting and gathering economy and with the emphasis placed upon the hunting of big game animals. On an impressionistic level cultural assemblages most closely related to Component A include Pictograph IV, Empty Gulch (upper level), Site 48JO312, and the latest occupation of Dry Head; all of these components have evidence of post-contact times, probably A. D. 1800 or later.

Components B and C of the Bull Elk Site (Area C) preceed Component A in time. These two components are evidenced by Levels 2 and 1, respectively, and by the constituent cultural traits indicated in tables 1 and 2. It is apparent that these two cultural units are minimally represented at the site, and, furthermore, that the features and artifacts have little comparative value.

Perhaps the most culturally significant trait from Component B is the badly decayed wooden structure which vaguely resembles the polygonal lodges of cribbed logs excavated at Thirty Mile Mesa Village (Mulloy 1965). This is not to say that Component B and Thirty Mile Mesa are closely related; the lack of adequate comparative data from both sites precludes a detailed assessment of the cultural relationships. Chipped stone artifacts from Component B include common forms found in many prehistoric and historic Northwestern Plains sites. A temporal position of approximately A. D. 1500 is postulated for the occupancy of Component B. This is based upon the historic placement of Component A (ca. A. D. 1800), the date for Component C (ca. A. D. 1125), and the assumption that the rate of sediment deposition remained relatively constant throughout the duration of the site.

The scarcity of cultural remains from Component C does not allow for even a brief assessment as to the probable cultural relationships involved. The most significant item of information from this occupation is a date of A. D. 1125± 150 years (Missouri Basin Chronology Statement, No. 4, 1962) which provides the earliest date for the occupation of the site.

Turning now to the tipi rings excavated in Areas B and D at the Bull Elk Site, it is obvious that a different type of habitation is present here than was evidenced in the excavation of Area C. Considerable controversy in the literature (Kehoe 1960; and Mulloy 1958 and 1965) regarding the functions of configurations known as "stone circles" suggests that not all such features were utilized for the same purpose. The most extensive research on the use of these features has been done by Kehoe who provides a convincing argument that some stone circles were used as weights to hold down the interior flaps of tipis (Kehoe 1960). Investigations of the Bull Elk stone circles leaves no doubt in the writer's mind that the Bull Elk configurations represent former locations of skin covered dwellings.

Tipi ring sites have a wide distribution within the Northwestern Plains Region and elsewhere, but they occur mostly in Montana, North Dakota, Wyoming, and Alberta, Canada. Although it is beyond the scope of the available data to attempt a detailed comparison between the Bull Elk manifestations and others, a few pertinent comments are in order.

The Bull Elk circles, ranging from about 13 to 23 feet in diameter, are similar in size to tipi rings reported from northern Montana (Kehoe 1960:444) and those from the Garrison Reservoir in North Dakota (Metcalf

1963:33-45). Fire pits and hearths similar to those from Bull Elk are reported for some of the rings in North Dakota and northern Montana; a fire hearth in one of the North Dakota rings is nearly identical to one of the Bull Elk hearths in size, in lacking a prepared pit, and insofar as they both appear as red burned areas resulting from fires kindled on the surface.

Artifacts from tipi rings in Bull Elk Area B were found about 0.1 foot below the surface suggesting a recent occupation of the terrace. Artifacts in the North Dakota and northern Montana rings were also surface or near surface finds. Generally, artifacts from tipi ring sites have little comparative value. The body sherd recovered from Bull Elk suggests that the inhabitants either used pottery or were in contact with another group of people who utilized ceramics.

Regarding the chronological placement of the Bull Elk tipi rings it is of interest to note that Ewers expressed the opinion that the skin covered tipi predates the acquisition of horses in Blackfoot culture, and that the pre-horse conical tents must have been quite small due to the limited means of transporting larger ones: "However, I am inclined to believe that the tipi probably was the primary dwelling of the Blackfoot of the Pedestrian Culture Period. All available information, both traditional and comparative, points to the relative smallness of the homes of the pre-horse Blackfoot" (Ewers 1955:308). Kehoe's data on Blackfoot tipi ring sizes is indicative of a change from small tipis (about 10 feet in diameter) in pre-horse days to large tipis (about 15-30 feet in diameter) after the horse was acquired (Kehoe 1960:462). On this basis, the size of the Bull Elk tipi rings (15-23 feet, except for one 13 feet) could be interpreted as dwellings too large to have been transported without horses or mules (probably A.D. 1725 or later). Information derived from Site 48JO311 in northern Wyoming, one of the Piney Creek sites, provides support for this interpretation. Frison reports tipi rings ranging from nine to fourteen feet in diameter from this site (Frison 1967:5); radio-carbon dates of A.D. 1580±100 (M-1748) and A.D. 1610±100 (M-1747) suggest a prehistoric placement for the small tipi rings (Frison 1967:27).

Assuming that a 1725 or later date is valid for the Bull Elk tipi rings, then there is a strong possibility that the tipi rings on the middle terrace and the campsite in Area C were occupied at or near the same time, perhaps even by the same group of people living on the middle terrace in the winter and on the lower terrace during the summer months. In light of this suggestion it is interesting to note that one of Lowie's in-

formants, Bear-crane, stated that the Crow used rocks to hold down the bottom of tipi covers, but another informant restricted this practice to the winter season (Lowie 1922:224). Lowie mentions that in the summer the Crow spent a large portion of the day under a shade with a roof covered with foliage erected close to their tipi or modern frame house, perhaps a shade similar to the structure evidenced in the upper component of Area C. The Crow shade differs from those used by non-Crow groups in having a more or less circular ground plan and a conical instead of a flat roof (Lowie 1922:255). At least one illustration of such a shade is known to exist (Lowie 1915:39). In the last analysis however, there is insufficient comparative material from the Bull Elk tipi rings to indicate whether or not the same group of people, or indeed even two closely related groups, occupied both terraces.

Black Canyon Site

The Black Canyon Site (24BH215) is located on an alluvial terrace on the right bank of the Bighorn River where it is joined by Black Canyon Creek, approximately 5 1/2 river miles upstream from the canyon mouth (Figures 2 and 10). The terrace is 45 feet above the Bighorn River, 125 feet wide at the broadest part, and extends downstream for several thousand feet. The sandy soil of the terrace is relatively homogeneous with a scattering of surface and subsurface rocks fallen from the canyon walls. Vegetation consists mainly of greasewood and grasses, with junipers confined to the immediate river banks.

The excavation was begun by digging five test pits, each approximately five feet square, to locate the most productive areas of the site. A portion of the site was then selected for excavation on the basis of artifacts recovered and changes in the soil suggestive of a stratified site. A grid system consisting of five foot squares was set up over the selected area to establish horizontal control for the excavation. A Brunton compass and stadia rod were used for the vertical control by measuring from a bench mark on the ground surface with an arbitrary elevation of 100.0 feet. The main excavation at the Black Canyon Site covered an area approximately 875 square feet, varying from 2.5 to 7.0 feet in depth. A smaller excavation, 60.0 feet north of the main one, covered an area about 180 square feet and was 2.5 feet deep. A total of approximately 1,050 cubic yards was excavated.

Stratigraphy

Stratigraphy was relatively simple, consisting of five distinct soil strata (Figure 11). All five levels yielded cultural debris. The basal stratum at the site, Level 1, was a mixture of light gray sand and brown soil varying from fine to medium in texture. Top of the level was about 4.2 feet below the ground surface; the bottom depth was undetermined. Excavations yielded a few artifacts and an occasional bone fragment in upper part of Level 1.

Level 2 was a discontinuous dark band of stained sand overlaying Level 1. It varied from 0.4 to 0.6 foot in thickness and was approximately 3.5 feet below the surface. Cultural remains included stone chips and small bone fragments.

Location map has been removed from the electronic edition
in an effort to protect sensitive cultural resources.

Figure 10

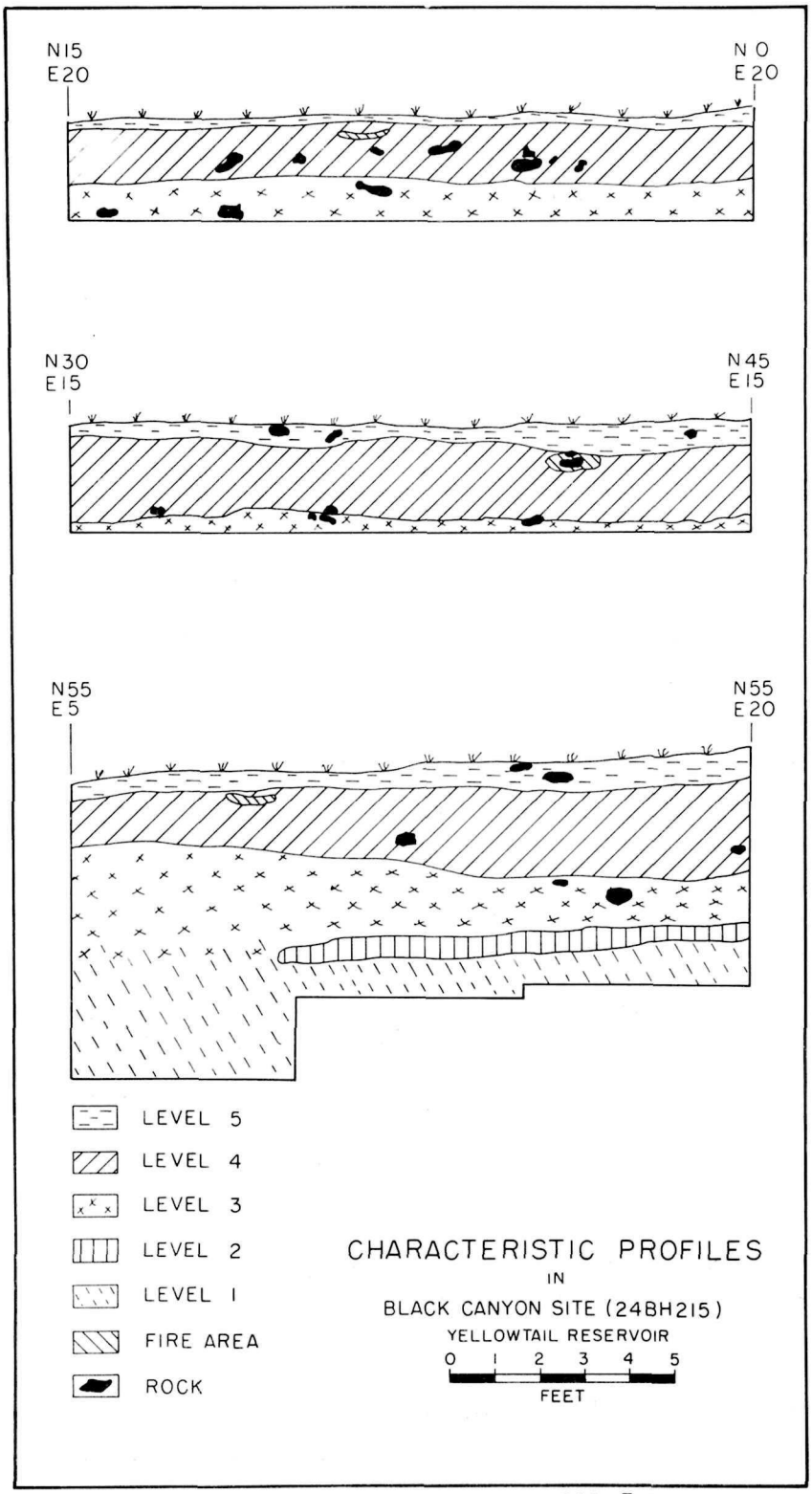


Figure 11 1963 T-816 JLL

Level 3 consisted of a layer of light gray sand and stained soil similar to Level 1, but slightly lighter in color. This stratum was conformably above Level 2 except where the latter was absent, and in this instance it was superimposed upon Level 1. Level 3 varied from 1.0 to 1.4 feet in thickness; the top was about 2.5 feet below the surface. Features and artifacts were scarce in this level.

Level 4 was a dark sandy soil, rather fine in texture, ranging from 1.4 to 2.1 feet in thickness, except where it thinned out toward the periphery of the excavation. The top of Level 4 was less than 1.0 foot below the surface. This was the most intensively occupied stratum, containing more features and artifacts than any other level.

The latest stratum at the site, Level 5, was a mixture of sand and soil ranging from light gray to dark brown; the texture was coarse. It varied from 0.2 to 0.8 foot in thickness, mantling the entire excavated portion of the site.

Features

Fire Pits and Hearths

Thirty fire pits were excavated at the Black Canyon Site. All but two were basin-shaped depressions ranging from 0.8 to 2.1 feet in diameter and from 0.1 to 0.4 foot in depth. The two exceptions were U-shaped pits about 1.1 feet in diameter and 0.5 foot in depth. The fire pits contained a fill of charcoal stained sand, small pieces of charcoal, and a few burned bone fragments. The pits were not given feature numbers.

Four hearth areas (fireplaces without pits or depressions) consisted of large irregular rock clusters and charcoal stained soil. Three hearth areas, Features 3, 5, and 6, ranged from 5.0 to 7.5 feet in diameter; the fourth, Feature 7, was approximately 15.0 feet long and 10.0 feet wide (Figure 12). Stones included in the rock clusters were fire cracked and were charcoal blackened on the undersides; they ranged from 0.2 to 1.0 foot in length. None of the hearth areas were more than 0.2 foot thick.

Midden Area

Feature 9 was a well defined refuse area approximately 5.0 feet in diameter composed of small bone fragments, scattered charcoal, and

Location map has been removed from the electronic edition in an effort to protect sensitive cultural resources.

Figure 12

a few fire cracked rocks. The deposit was thin, measuring no more than 0.1 foot in thickness.

Bone Caches

Two circular caches consisted of unworked bone fragments laid side by side. One appeared to be in the form of a shallow depression, less than 0.1 foot deep. Caches were not assigned feature numbers.

Table 3. Vertical distribution of features, Black Canyon Site.

	Level 1	Level 2	Level 3	Level 4	Level 5	Totals
Basin-shaped fire pits		1	23	4		28
U-shaped fire pits			2			2
Large hearth areas.....			4			4
Bone caches.....			2			2
Midden area.....			1			1
TOTALS:		1	32	4		37

Artifacts

Ceramic Remains
(13 sherds)

Body sherds are separated into four groups based upon differences and similarities in paste and surface treatment. Cross-sections of these sherds indicate that they were probably manufactured by mass modeling with use of a paddle and anvil to thin the vessel walls.

Group A (6 specimens)

The temper consists mainly of quartz and a few rounded particles of fine sand. Tempering particles are less than 0.5 mm. in diameter and are difficult to distinguish from the clay without the aid of a hand lens. Occasional small flakes of mica

occur in the cores and exteriors, but these do not appear to be tempering particles. The texture is fine, compact, and apparently well worked. The exterior surface feel is fine, while the interior is rough. Sherds are not friable and tend to break along straight lines. Four have black to gray exteriors suggesting that they were fired in a reducing atmosphere. All interiors are black; carbon deposits adhere to the interior surface of most sherds. Cores are gray (Plate 7a-d).

Four specimens have outward curves in profile and are suggestive of shoulder sections. The other two are straight in profile. Sherds range from 5.0 to 7.0 mm. in thickness.

Exteriors are smooth with some horizontal striations suggesting that they were also wiped. One sherd has ridges which indicate simple stamping. Four specimens have glossy exterior surfaces, resembling a burnished treatment.

Sherds resemble in paste and surface finish those sherds described as Tradition A from the Empty Gulch test (Mulloy 1958:82) and the Lovitt Plain and Lovitt Simple Stamped groups characteristic of the Dismal River Aspect (Metcalf 1949:73).

Group B (2 specimens)

The paste is fine and homogeneous. Tempering particles of sand and quartz measure less than 1.0 mm. in diameter. The surface feel is fine and cores are compact. Cores and interiors are gray and exteriors are tan (Plate 7e, g).

The profile of one specimen is straight and the other has a slight curvature. Both sherds are 5.5 mm. thick. Exteriors are simple stamped and subsequently smoothed, almost obliterating the simple stamping ridges. Interiors are rough; one sherd has parallel striations suggesting the use of twigs or grass for wiping.

Sherds agree in paste and surface treatment with examples described as Tradition A from the Empty Gulch test (Mulloy 1958:82) and with the simple stamped sherds from the Hagen Site (Mulloy 1942:27).

Group C (3 specimens)

Tempering material consists of a small amount of quartz particles ranging from 1.0 to 4.0 mm. in diameter. The surface

texture is coarse, and the cores are crumbly and porous. Specimens are tan on the exterior surfaces and range from gray to black on the interiors (Plate 7f).

Profiles are straight. Sherds range from 9.0 to 11.0 mm. in thickness. Exteriors are probably paddled, but sherds lack impressions indicating what kind of a paddle was used.

Sherds resemble those of Group B, but have larger and coarser tempering meterials, are thicker, and lack indications of wiping as a surface treatment.

Group D (2 specimens)

Tempering material consists of abundant sand and limestone particles measuring less than 0.5 mm. in diameter. Exterior surfaces have a sandy feel. Cores are generally compact, but somewhat porous. Exteriors are tan; cores and interiors are gray (Plate 7h).

Profiles are straight and about 6.0 mm. thick. Exterior surfaces are paddle-stamped, but there are no impressions suggesting what kind of a paddle was used. Interiors are smooth.

Sherds resemble in paste and surface treatment those of Groups B and C, but differ in having smaller tempering particles and a definite sandy feel on the exterior surface.

Projectile Points
(27 specimens)

1-(6 specimens)

Projectile points are corner notched, have convex edges, an expanding stem, and a convex base (Plate 7i-l). They exhibit overall flaking with large flakes removed transversely or obliquely from the edges, and smaller, uneven pressure flakes detached from the edges and stem. All are made of chert. Five are complete and one lacks the tip. Tips on all complete specimens are blunt. Complete ones range from 22.0 to 40.0 mm. in length, from 12.0 to 24.0 mm. in width, from 5.0 to 7.0 mm. in thickness, and from 2.0 to 6.9 gm. in weight.

2-(7 specimens)

These are corner notched points with straight edges and expanding stems (Plate 7m-p). Bases are convex on two specimens,

concave on two, and indeterminate on the remainder. Tips are sharp. Three specimens are broken at a point above the mid-section. Flaking was accomplished by the removal of small pressure flakes from the edges and larger flakes from the faces. Six are chert and one is quartzite. They range from 22.0 to 35.0 mm. in length, 15.0 to 23.0 mm. in width, 3.0 to 5.0 mm. in thickness, and from 1.1 to 2.3 gm. in weight.

3-(3 specimens)

Side notched projectile points having convex edges, except for one specimen on which the edges slope gently inward near the tip to form a slight concavity (Plate 7q-s). Bases are concave and tips are sharp. All specimens are unique in displaying a well executed flaking technique. Pressure flaking scars occur either transversely or obliquely on the faces; edges are evenly retouched. Craftsmanship is of high quality. Two specimens are made of banded red chert and the other is of gray chert. They range from 25.0 to 33.0 mm. in length, 14.0 to 14.0 mm. in width, 3.0 to 4.0 mm. in thickness, and from 1.3 to 1.6 gm. in weight.

4-(2 specimens)

Basal sections of corner notched points are characterized by slightly convex edges, straight shoulders, and expanding stems with concave bases (Plate 7t, u). The base on one specimen is only slightly concave. Pressure flaking scars extend transversely across the faces; the edges exhibit slight retouching. These chert specimens are 19.0 and 20.0 mm. wide and 6.0 mm. thick. Lengths are unknown.

5-(1 specimen)

This point is characterized by straight edges, a blunt tip, straight shoulders, and a stem with a wide concave base (Plate 7r). Small pressure scars extend obliquely from the edges and transversely across the faces. It is made of jasper. It is 28.0 mm. long, 20.0 mm. wide, 6.0 mm. thick, and weighs 2.7 gm.

6-(1 specimen)

A triangular projectile point is unevenly pressure flaked on the faces and edges. Material is quartzite. It is 28.0 mm. long, 14.0 mm. wide, 3.0 mm. thick, and weighs 1.2 gm.

7-(1 specimen)

A basal fragment with basal notch, 4.0 mm. deep, is evenly retouched on the edges and the base. The material is jasper. It is 22.0 mm. wide and 3.0 mm. thick.

8-(6 specimens)

Six projectile point tips, two of obsidian and four of chalcedony, resemble number 2 specimens in form and flaking technique, but are too fragmentary for inclusion within this grouping.

Knives
(42 specimens)

1-(2 specimens)

Two large quartzite implements, lacking basal sections, were probably ovate when complete. Large percussion scars occur obliquely on the faces; edges are worked both by percussion and uneven pressure flaking. They are 53.0 and 63.0 mm. wide and 10.0 mm. thick. Lengths are unknown.

2-(11 specimens)

These are ovate or pyriform knives with convex edges and bases and blunt tips (Plate 8a). Faces are percussion flaked and edges are retouched by pressure flaking. All are chert. Two distinct sizes are present: five specimens range from 45.0 to 55.0 mm. in length, 32.0 to 44.0 mm. in width, and from 9.0 to 15.0 mm. in thickness; the remaining specimens range from 29.0 to 40.0 mm. in length, 20.0 to 27.0 mm. in width, and from 5.0 to 7.0 mm. in thickness.

3-(3 specimens)

Large trapezoidal knives have straight to slightly convex edges and straight bases (Plate 9a). They are fashioned from large flakes by detaching percussion flakes obliquely across the faces and by retouching the edges by pressure flaking. Flaking is uneven and appears not to have been carefully executed. Two are of basalt and one is a gray and pink chert. The only complete example is 66.0 mm. long, 39.0 mm. wide, and 11.0 mm. thick.

4-(8 specimens)

Triangular in profile and carefully made by removing oblique flakes from the faces and by pressure flaking the edges. Materials used include chert (5 specimens), quartzite (2 specimens), and

jasper (1 specimen). They range from 20.0 to 45.0 mm. in length, from 12.0 to 27.0 mm. in width, and from 4.0 to 9.0 mm. in thickness.

5-(5 specimens)

These are triangular knives which differ from number 4 knives in being somewhat larger and having slightly convex edges and convex bases (Plate 9b). Two specimens exhibit careful overall flaking. Faces are rough and unretouched on the remainder. Three are chert and two are quartzite. They range from 53.0 to 85.0 mm. in length, 24.0 to 49.0 mm. in width, and from 8.0 to 11.0 mm. in thickness.

6-(1 specimen)

A round knife of chert exhibits long pressure flaking scars on its edges (Plate 8c). A notch on one side suggests that the implement was hafted. It is 35.0 mm. in diameter and 5.0 mm. thick.

7-(12 specimens)

Three bifacially flaked midsections, lenticular in cross-section, are obliquely pressure flaked on the faces. Nine tip fragments with lenticular cross-sections are retouched on the edges. Materials include jasper, chert, chalcedony, and quartzite.

End Scrapers
(31 specimens)

End scrapers from the Black Canyon Site are of the plano-convex variety having a plane ventral surface and a bulb of percussion resulting from the removal of the flake from the parent nodule. The bulb of percussion is always on the ventral surface opposite the scraping end. Scrapers are ovoid to rectangular with the scraping edge on the widest and thickest end.

1-(12 specimens)

Scrapers are ovoid to triangular and roughly symmetrical (Plate 8d-g). Large flakes are detached both transversely and obliquely from the edges and smaller flakes are removed from the widest portion, forming a steep angle on the scraping end. Seven large specimens have overall flaking on the convex side, and five small examples do not. Examples are made of chert and

chalcedony. Seven specimens range from 24.0 to 29.0 mm. in length, 16.0 to 21.0 mm. in width, and from 4.0 to 7.0 mm. in thickness. The remainder range from 31.0 to 39.0 mm. in length, 25.0 to 29.0 mm. in width, and from 8.0 to 10.0 mm. in thickness.

2-(9 specimens)

These are rectangular, asymmetrical scrapers with uneven pressure flaking on the edges and scraping ends; the convex surfaces are unretouched and have a sharp, longitudinal ridge from end to end (Plate 8h-i). Specimens are large, crudely manufactured, and lack a steep angle on the working ends. Chert and agate were used. They range from 41.0 to 55.0 mm. in length, 29.0 to 34.0 mm. in width, and from 9.0 to 16.0 mm. in thickness.

3-(5 specimens)

Rectangular to triangular scrapers have concave edges and straight to concave bases; one exception has a pointed base (Plate 8j-l). Uniform pressure flaking along the edges and scraping ends contrasts with the unretouched convex surfaces. The well flaked concave edges probably allowed for easier hafting. One example is of particular interest in that it is side notched, 7.0 mm. from the base. All specimens are of chert. They range from 29.0 to 51.0 mm. in length, 18.0 to 40.0 mm. in width, and from 10.0 to 12.0 mm. in thickness.

4-(2 specimens)

Triangular or T-shaped scrapers are unevenly pressure flaked on the edges and the scraping ends (Plate 8m). The uneven flaking, coupled with the unworked dorsal ridges, suggest haste or lack of high quality craftsmanship. These are chert specimens ranging from 31.0 to 35.0 mm. in length, 30.0 to 34.0 mm. in width, and from 11.0 to 14.0 mm. in thickness.

5-(2 specimens)

Scrapers fashioned from thin, asymmetrical, chert flakes have slightly convex dorsal surfaces and lack a steeply beveled scraping end. Flaking scars are small and are confined to the scraping ends only. Specimens range from 29.0 to 35.0 mm. in length, 25.0 to 29.0 mm. in width, and from 4.0 to 6.0 mm. in thickness.

6-(1 specimen)

A rectangular chert specimen, square in cross section, is both percussion and pressure flaked on the scraping end; other surfaces are unretouched (Plate 8n). It is 55.0 mm. long, 29.0 mm. wide, and 13.0 mm. thick.

Side Scrapers
(30 specimens)

1-(6 specimens)

Thick rectangular flakes and cores are pressure flaked on one or both edges (Plate 9d-e). Specimens range from 54.0 to 83.0 mm. in length, 39.0 to 56.0 mm. in width, and from 11.0 to 22.0 mm. in thickness. Material is chert.

2-(10 specimens)

Thin, irregular chert flakes are pressure flaked on one straight edge which is set at an approximate right angle to the longitudinal axis of the specimen (Plate 8o). They range from 45.0 to 60.0 mm. in length, 30.0 to 41.0 mm. in width, and from 8.0 to 12.0 mm. in thickness.

3-(9 specimens)

Thin rectangular or elongated chert flakes are unevenly pressure flaked on one or two edges. They range from 45.0 to 68.0 mm. in length, 21.0 to 32.0 mm. in width, and from 7.0 to 10.0 mm. in thickness.

4-(5 specimens)

Ovate chert scrapers are carefully pressure flaked on both edges (Plate 8r). They range from 40.0 to 58.0 mm. in length, 34.0 to 41.0 mm. in width, and from 8.0 to 13.0 mm. in thickness.

Drills
(4 specimens)

1-(3 specimens)

These have expanding bases and concave edges which taper to form the working ends (Plate 8p). Edges and tips are evenly pressure flaked; bases are only slightly modified. Specimens range from 21.0 to 28.0 mm. in length, from 16.0 to 21.0 mm. in width at the base, and are about 7.0 mm. thick. They are made of chert.

2-(1 specimen)

An elongate drill of chert with straight edges and a straight base is unevenly pressured flaked on both edges and surfaces. It is 25.0 mm. long, 9.0 mm. wide, and 5.0 mm. thick.

Gravers
(5 specimens)

Rectangular and irregular chert flakes are unifacially pressure flaked on the edges and bifacially flaked on the tips (Plate 8q). Modified edges may have served as scraping edges. Gravers are about 25.0 mm. long and 6.0 mm. thick.

Spokeshaves
(2 specimens)

Irregular chert pieces with a concave edge are evenly pressure flaked on the concave portion (Plate 9i). They are approximately 45.0 mm. long and 9.0 mm. thick.

Choppers
(8 specimens)

Four flat cobbles are percussion flaked on all edges, and four chert cores are percussion flaked on one edge (Plate 9g, k, l). Choppers range from 70.0 to 140.0 mm. in length.

Manos
(2 specimens)

One specimen of sandstone and the other of waterworn igneous rock are use-smoothed on both surfaces. They are approximately 135.0 mm. long and 70.0 mm. wide.

Hammerstones
(2 specimens)

Hammerstones of sandstone and igneous rock are scarred on one end (Plate 9f). One specimen also has a smooth surface suggesting use as a mano. They are about 123.0 mm. long.

Stone Disks
(2 specimens)

Chert and limestone pieces are unifacially percussion flaked on the edges and unmodified on the surfaces (Plate 9h). Edges are not carefully flaked and are not suitable either for cutting or scraping. The disks are about 44.0 mm. in diameter and 4.0 mm. thick.

Miscellaneous Stone
(61 specimens)

Modified flakes can not be assigned to any of the specific functional groupings previously described. Forty-eight examples are unifacially worked, 41 of which are pressure flaked and seven are percussion flaked. The remainder are bifacially percussion flaked. All retouched flakes are of crypto-crystalline materials.

Bone Knapping Tool
(1 specimen)

A knapping tool or punch was fashioned from the longitudinal section of a long bone (Plate 9j). One end is cut down to a narrow blunt tip and is transversely striated. The specimen is 125.0 mm. long and 8.0 mm. thick.

Bone Tube
(1 specimen)

The longbone of a bird is broken on one end and rounded and worn smooth on the other (Plate 9n). It is 60.0 mm. long and 10.0 mm. in diameter.

Bone Spatulate
(1 specimen)

This is a spatulate-shaped piece of bone to which no specific function is attributed (Plate 9c). The edges are worn smooth. It is 82.0 mm. long, 33.0 mm. wide, and 8.0 mm. thick.

Identifiable Bone

A total of 508 pieces of unworked bone were recovered from the Black Canyon Site. Identification of the faunal remains has not yet been accomplished, but the majority of the pieces are of large game animals,

Table 4. Vertical distribution of artifacts, Black Canyon Site.

	Level 1	Level 2	Level 3	Level 4	Level 5	Totals
Pottery:						
Group A				5	1	6
Group B					2	2
Group C				1	2	3
Group D					2	2
Projectile points:						
1.....				4	2	6
2.....			1	6		7
3.....				2	1	3
4.....				1	1	2
5.....				1		1
6.....					1	1
7.....			1			1
8.....			2	3	1	6
Knives:						
1.....				1	1	2
2.....		2	1	4	4	11
3.....				3		3
4.....				4	4	8
5.....			1	4		5

(Table 4 continued)

	Level 1	Level 2	Level 3	Level 4	Level 5	Totals
6.....					1	1
7.....	1		2	6	3	12
End scrapers:						
1.....			1	9	2	12
2.....				5	4	9
3.....				3	2	5
4.....	1				1	2
5.....				2		2
6.....					1	1
Side scrapers:						
1.....			1	5		6
2.....			2	5	3	10
3.....			2	7		9
4.....			1	3	1	5
Drills:						
1.....				2	1	3
2.....				1		1
Gravers			1	3	1	5
Spokeshaves.....	1				1	2
Choppers				2	6	8
Manos.....				1	1	2
Hammerstones ...				2		2
Stone disks				2		2

(Table 4 continued)

	Level 1	Level 2	Level 3	Level 4	Level 5	Totals
Knapping tool, bone.....					1	1
Bone tube.....					1	1
Bone spatulate....					1	1
TOTALS:	5		16	97	53	171

such as bison, elk, and deer. The kind and quantity of faunal remains indicate a strong reliance on the hunting of large game animals as the primary food source. Level 5 contained 41.3% of the total bone; Level 4, 44.3%; Level 3, 8.6%; Level 2, 1.2%; and Level 1, 3.8%. The sharp decrease in percentages from Level 4 to Level 1 correlates with a similar decrease in artifacts recovered from the same levels. This suggests that the earlier levels of the Black Canyon Site (1, 2, and 3) were not as intensively occupied as were the later ones (4 and 5).

Discussion

The Black Canyon Site inventory consists of 216 stone artifacts, 13 body sherds, 3 bone artifacts, and 508 identifiable bones. Excluding nondescript, multi-purpose retouched flakes (61 specimens), stone artifacts occur in the following descending order of popularity: scrapers (61); knives (42); projectile points (27); choppers (8); gravers (5); drills (4); and spokeshaves, disks, manos, and hammerstones (2 each). The majority of stone artifacts other than retouched flakes consists of scrapers, knives, and projectile points (84 percent).

Scarcity of bone artifacts is significant in view of the large quantity of unworked bone recovered. Preservation of the bone was a good indication that if bone artifacts had existed in a larger quantity they should have survived. It can be assumed then that bone, as a source of raw material, was unimportant by virtue of the selectivity of the peoples who occupied the site.

A lack of decorative or non-utilitarian artifacts is significant in suggesting transient groups or, perhaps economies in which a great deal

of the time was used for obtaining food. The kind of food utilized may be inferred both directly and indirectly from the excavated materials. Direct evidence of large game animals consumed is found in the presence of abundant animal remains and the lack of fish and bird remains. Indirect evidence consists of a well developed scraper and knife complex suggesting a reliance upon large game, and the scarcity of manos and pottery normally associated with an economy based primarily upon gathering. In a general sense the subsistence pattern represented at Black Canyon is a hunting and gathering one oriented toward the hunting of large game animals.

The most significant features at Black Canyon were scattered fire pits and hearths which appear to have been used, abandoned, and reused at different intervals. The lack of evidence indicative of stable dwellings at the site suggests that if shelters were used they were probably in the form of temporary windbreaks made from branches or other light materials not set solidly into the ground. This type of shelter would seem suitable for the warm summers of the area, but inadequate for the harsh winters. Other than this, there were no indications that the site was not inhabited the year round; indeed, game would be plentiful in the sheltered canyon, providing a regular source of food.

Internal relationships and external cultural correlations with Black Canyon can best be determined by an analysis of the artifacts. A number of artifacts, however, are of little use as they are either not sufficiently diagnostic or their distributions are so limited that significant correlations are not apparent. Artifacts which are assumed to have the most significance include ceramics, projectile points, and scrapers.

During the excavation it was anticipated that the five stratigraphic levels might contain distinct artifact assemblages. However, an analysis of the artifacts recovered from the upper two levels suggests a degree of artifact mixture, probably resulting from multiple occupation of the site. The foregoing discussion and the subsequent determination of components for the upper two levels (analysis units representing different cultural and/or temporal manifestations) is based upon a comparison of artifacts which are believed to be cultural-indicative and the a priori knowledge regarding temporal and spatial occurrences of similar artifacts from other sites in the Northwestern Plains and adjacent regions.

Ceramic materials from Levels 4 and 5 indicate the presence of a group, or groups, of people who utilized earthen vessels as a part of their lifeway. The importance of pottery in their economy is thought to be minimal, based upon the relative scarcity of ceramics at the site. Subtle variations between pottery remains are noted; however, all ceramics appear to be wholly limited to plain utilitarian pots used for cooking and storage purposes. Although firm cultural relationships cannot be ascertained from these materials, basic affinities can be suggested.

Group A pottery from Black Canyon resembles plain and fluted (simple stamped) sherds of Tradition A (Mandan-Hidatsa) pottery from the upper level of the Empty Gulch test (Mulloy 1958:82-84) and ceramics of the Piney Creek sites (Frison 1967:20-22). Group A sherds also resemble in a general fashion other Plains pottery with plain or simple stamped surfaces, such as the Lovitt Plain and Lovitt Simple Stamped types associated with the Dismal River Aspect (Metcalf 1949:73). The Bighorn Canyon, however, is outside the known range of Dismal River pottery. Lacking more diagnostic comparative traits for Black Canyon Group A pottery, it is suggested, on a purely distributional basis, that Group A ceramics are correctly interpreted as being more closely aligned with the Mandan-Hidatsa pottery tradition than with the Dismal River (Apache) pottery.

Black Canyon pottery groups B, C, and D are also thought to resemble Tradition A pottery (both plain and simple stamped), but in the writer's opinion, on a more positive level than the Black Canyon Group A ceramics. The technique of simple stamping as a surface treatment has wide spatial and long temporal limits. It is prevalent in protohistoric and historic Pawnee wares of the Central Plains (ca. A. D. 1500 to historic times) and northward into the Arikara and Mandan-Hidatsa territories in South and North Dakota. Exact temporal limits for simple stamping in North Dakota is undetermined, but the trait has persisted as part of an apparent unbroken pottery tradition from about A. D. 1200, or earlier, to the ethnographic present. Thus, within the historical relationships suggested between pottery bearing sites in the Northwestern Plains and the Mandan-Hidatsa tradition, the trait of simple stamping cannot be used effectively at present as a horizon marker for delineating "late" ceramic components in the Northwestern Plains. The only satisfactory conclusion regarding the occurrence of simple stamped pottery at Black Canyon is that it demonstrates a historical relationship, however vague, with the sedentary village groups of the Northern Plains.

Stone artifacts recovered from Black Canyon Levels 4 and 5 are representative of the Middle Prehistoric (B.C. 2500 to 500) and Late Prehistoric (A.D. 500 to 1800) periods as outlined by Mulloy (1958). Side notched points with a flat or concave base occur in most Late Prehistoric sites, for example, Hagen, Ash Coulee, Ludlow Cave, the Piney Creek sites, Empty Gulch, and Upper Level at Billings Bison Trap. These point forms occur with Mandan-Hidatsa like pottery at Hagen, Ludlow Cave, Empty Gulch, and at Site 48JO312 (Piney Creek Site). Triangular unnotched points (one from Black Canyon) have spatial and temporal limits similar to those described for side notched points.

The corner notched point is common in sites attributed to the Middle Prehistoric Period (Pictograph Cave II, and upper level of Billings Bison Trap). They also occur with side notched points in a few Late Prehistoric components; however, the corner notched points are found in such small numbers that Mulloy interprets them as "reused points" and would place them in an earlier context than the side notched points (Mulloy 1942:42; 1958:154).

With exception of two projectile points to be discussed later, most of the remaining artifacts from Levels 4 and 5 have too few diagnostic traits of sufficient historical value to justify detailed comparisons. However, a few pertinent comments on these artifacts are in order.

Ovate to pyriform knives occur in several sites representing Mulloy's Middle, Late Prehistoric, and Historic periods, but they appear to be most popular in the Late Prehistoric sites (Mulloy 1958: Table 12). Triangular and trapezoidal knives have a wide spatial distribution both within and outside the Northwestern Plains. Temporally, such specimens occur through levels 1-3 in the Pictograph Cave sequence.

End scrapers are for the most part ubiquitous items with little recognized historical value. An exception to this may be found in the concave sided and side notched scrapers which appear to be more prevalent in earlier contexts than in later ones. Concave sided specimens occur, for example, in Pictograph Cave I, II, and III and at Ghost Cave, but they are either rare or lacking in Pictograph Cave IV, Empty Gulch, and the Hagen Site.

Gravers usually have wide spatial and broad temporal distributions; however, the rectangular gravers from Black Canyon are nearly identical to those listed by Mulloy as being characteristic of the Middle Prehistoric Period, Pictograph Cave I and the lower level of Billings Bison Trap (Mulloy 1958: Table 12). Drills with expanded bases are items which are most frequent in the Late Prehistoric Period (Mulloy 1958: Table 12).

Based upon the preceeding review of artifacts from Black Canyon levels 4 and 5, two interpretations of the data are posited.

1) Two cultural units are represented; the earliest (Component B) consisting of corner notched points, concave sided and side notched end scrapers, and rectangular gravers (Late Middle Prehistoric); and the later unit (Component A) primarily consisting of ceramics, side notched and triangular unnotched points, and drills with expanded bases (Late Prehistoric).

2) A single cultural unit is present, one which is characterized by artifacts of both periods, representing a transitional stage in which corner notched points have not yet dissappeared and side notched points are becoming important.

Although it may be reasonable to expect the existence of such a transitional stage at some point within the Northwestern Plains prehistory, the first interpretation is considered by the writer to be the more acceptable of the two. This acceptance is primarily based upon two factors: 1) that side notched and corner notched points, of the forms present at Black Canyon, have not been demonstrated to have historical compatibility and are thought to represent different periods of time; and 2) that ceramic remains elsewhere in the Northwestern Plains, similar to those from Black Canyon, are generally considered to be on a later horizon than would be indicated for the putative transitional stage suggested in the second interpretation. A temporal span of approximately 500 B.C. to A.D. 1 is inferred for Component B, and a placement of about A.D. 1500 to 1800 is suggested for Component A.

Cultural remains are scarce from Black Canyon Level 3 (Component C). Diagnostic artifacts include a corner notched point with a concave base and one graver; both are characteristic of artifacts from sites attributed to the Middle Prehistoric Period. A basal fragment of a point (Plate 7x) resembles the Boxelder point type (Wheeler n.d.). Specimens of this type are found in several sites within the Keyhole

Reservoir of Northeastern Wyoming; Wheeler placed the Boxelder type in Mulloy's Early Middle Prehistoric Period, ca. 1500-2500 B.C. Remaining artifacts from Level 3, knives and scrapers, have not been demonstrated to have historical usefulness.

Two projectile points (Plate 7t, u) recovered from the upper two levels of Black Canyon, thought to be Hanna Points (Wheeler 1954), are assigned to Component C on the basis that such points are considered to be earlier than the corner notched points of Component B. A similar stratigraphic reversal of Hanna points occurred at the Sorenson Site (48CB202) in the Upper Bighorn Canyon; the investigator of this site views the Hanna points as earlier than the corner notched points found with them (Husted personal communication). In the Keyhole Reservoir, Wheeler (n.d.) regards Hanna points as being on a time period similar to McKean points, perhaps slightly later. Within the Northwestern Plains, Component C is presumed to be on a time interval correspondent to that of Pictograph Cave I. A temporal position of approximately 1500 to 2500 B.C. is postualted for Component C.

Levels 1 and 2 at Black Canyon form minimal cultural manifestations with no real basis for even a brief cultural assessment. Suffice it to say that they represent the earliest known occupations of the site with Level 1 being the earlier of the two.

In general, occupants of the Black Canyon Site left little in their refuse to warrant either a reanalysis or a firming up of the existing Northwestern Plains sequence. Ceramics and side notched points indicate a relatively late prehistoric occupation and the analysis of the data attributed to the lowest levels, even though scarce, suggests considerable antiquity for the site.

Dry Head Site

The Dry Head Site (24CB203) is situated on a grass-covered terrace on the right bank of Dry Head Creek where it joins the Bighorn River (Figure 13). This is about 4 river miles upstream from Bull Elk Creek and 15 1/2 miles upstream from the mouth of the Bighorn Canyon (Figure 2). The terrace, about 8 feet above Dry Head Creek, is 60 feet wide at the mouth of the creek and gradually narrows down to 6 feet in width at a point approximately 300 feet upstream. Above the terrace is a steep grass-covered talus slope extending to the canyon wall, which at this point is approximately 500 feet high.

Campers had recently used the area and had dug several garbage pits into the cultural zone, but fortunately the pits were situated in the least important part of the site.

A visual examination of the eroded creek bank near the terrace edge revealed three distinct cultural levels. Test pits were dug at various points in the terrace to determine the horizontal extent of the cultural deposit. After ascertaining that the deposit extended to about forty feet back from the terrace edge a grid system, of five foot squares oriented in a north-south direction, was established over the site for the retention of horizontal control during the excavation. The strata were easily distinguished, and vertical control of the excavation was set up according to natural levels. Fill from the site was removed by skimming with shovels and by the use of trowels in close work. Artifacts were sacked according to the grid provenience and the level in which they were found. Features were recorded either on standardized feature forms or in the field notebook. The site was mapped by use of a Brunton compass and Stadia rod in reference to a bench mark with an arbitrary elevation of one hundred feet.

Stratigraphy

The deepest part of the excavation was a pit 5.0 feet square and 6.0 feet deep which revealed disturbed strata and intervening bands of clay and sand resulting from frequent flooding of Dry Head Creek (Figure 14). The basal stratum at the site was a mixture of coarse sand and red clay of an undetermined thickness. Above this was an irregular layer of green sand varying from 0.1 to 1.4 feet in thickness. A portion of the green sand layer had been eroded and subsequently filled in with a complex stratum consisting of red clay mixed with sand, green sand lenses, and irregular charcoal stained areas;

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in an effort to protect sensitive cultural resources.

Figure 13

water swirls were visible in the red clay-sand mixture. The charcoal stained areas in this stratum suggested the presence of an occupation on the talus slope above the site, which was at least partially destroyed by slumping action. Stratigraphy above the slumped area included six alternating layers of green sand and red clay; these layers varied from 0.1 to 1.7 feet in thickness. Above this was a stratum of clear yellow sand averaging about 0.5 feet in thickness; the top of the sand layer was from 1.0 to 2.0 feet below the surface (Figures 14 and 15).

The earliest cultural stratum, Level 1, was super-imposed upon a sterile layer of yellow sand (Figure 15). Level 1 was approximately 0.05 foot thick and was discontinuous throughout the excavated portion of the site. The fill consisted of charcoal stained sand, bison bone, chipped stone artifacts, and small bone fragments. A thin discontinuous band of red clay was deposited on top of Level 1 in the extreme western portion of the excavation. A second layer of sterile yellow sand, 0.5 foot thick, overlaid Level 1 and the thin red clay band where they were present. Although no artifacts were found in this intervening sand layer, large quantities of bison bones were recovered.

Level 2, the second occupation level, was situated above the yellow sand containing the bison bones (Figure 14). This stratum consisted of charcoal stained sand about 0.2 foot thick; it was discontinuous in the site, pinching out completely in the western periphery of the excavated area. Chipped stone artifacts, pottery, and bone were recovered from this level. Above Level 2 was a layer of gray sand about 0.5 foot in thickness, very fine in texture, and for the most part sterile. A few bone fragments and talus rocks were found in the western portion.

Level 3, the latest aboriginal occupation at the Dry Head Site, was a stratum of charcoal stained sand above the gray sand layer (Figure 14). Level 3 was 0.1 foot thick and approximately 0.1 foot below the ground surface. Pottery and chipped stone artifacts were recovered.

Three circular refuse lenses, about 6.0 feet in diameter and 0.1 foot thick, were situated on top of Level 3 in the eastern portion of the site. These lenses consisted of white ash heaps and large chunks of charcoal. They yielded: three cartridge cases, one unfired cartridge, one buckle, one horseshoe nail, a portion of a leather strap, six

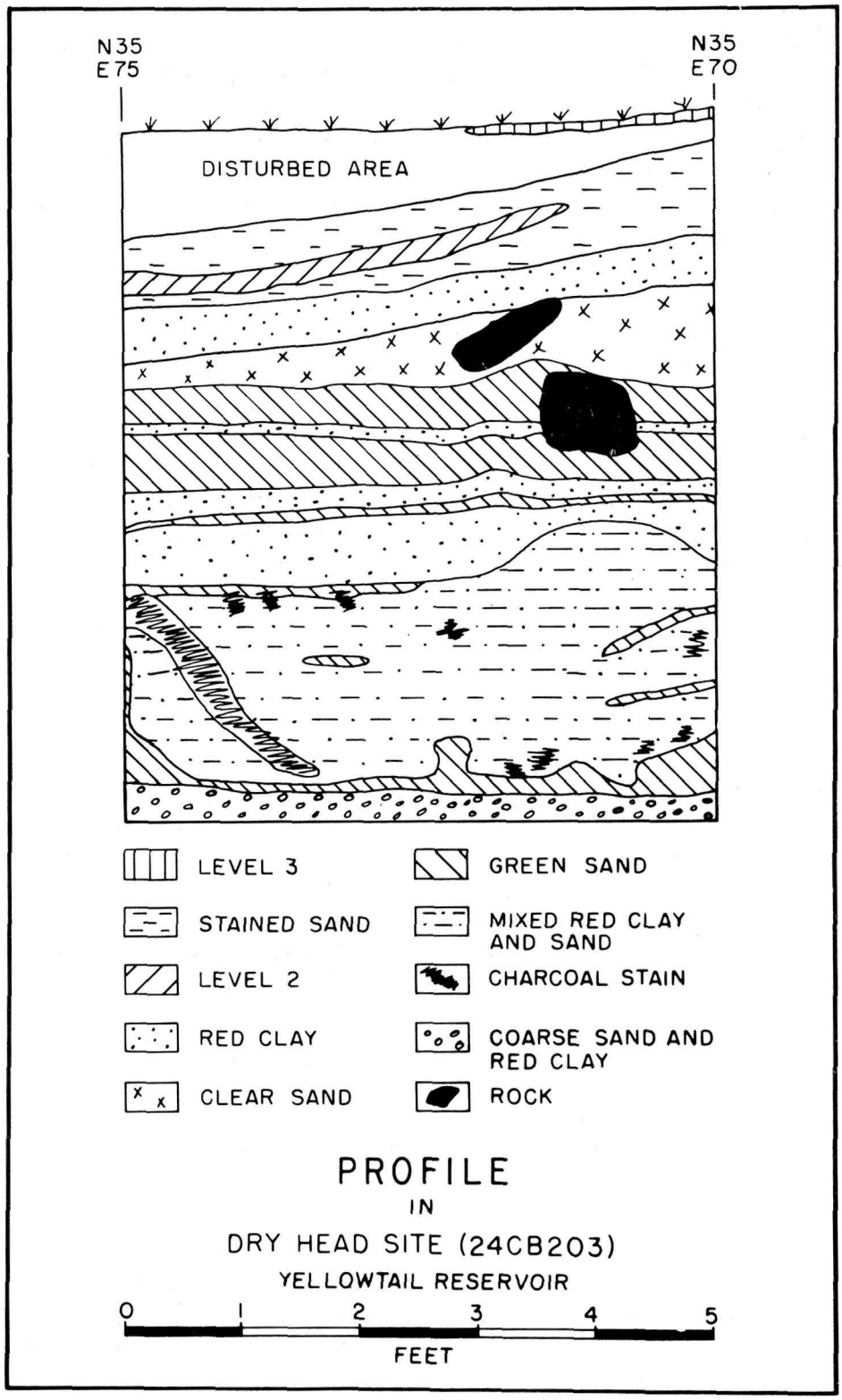


Figure 14 1963 T-814 JLL

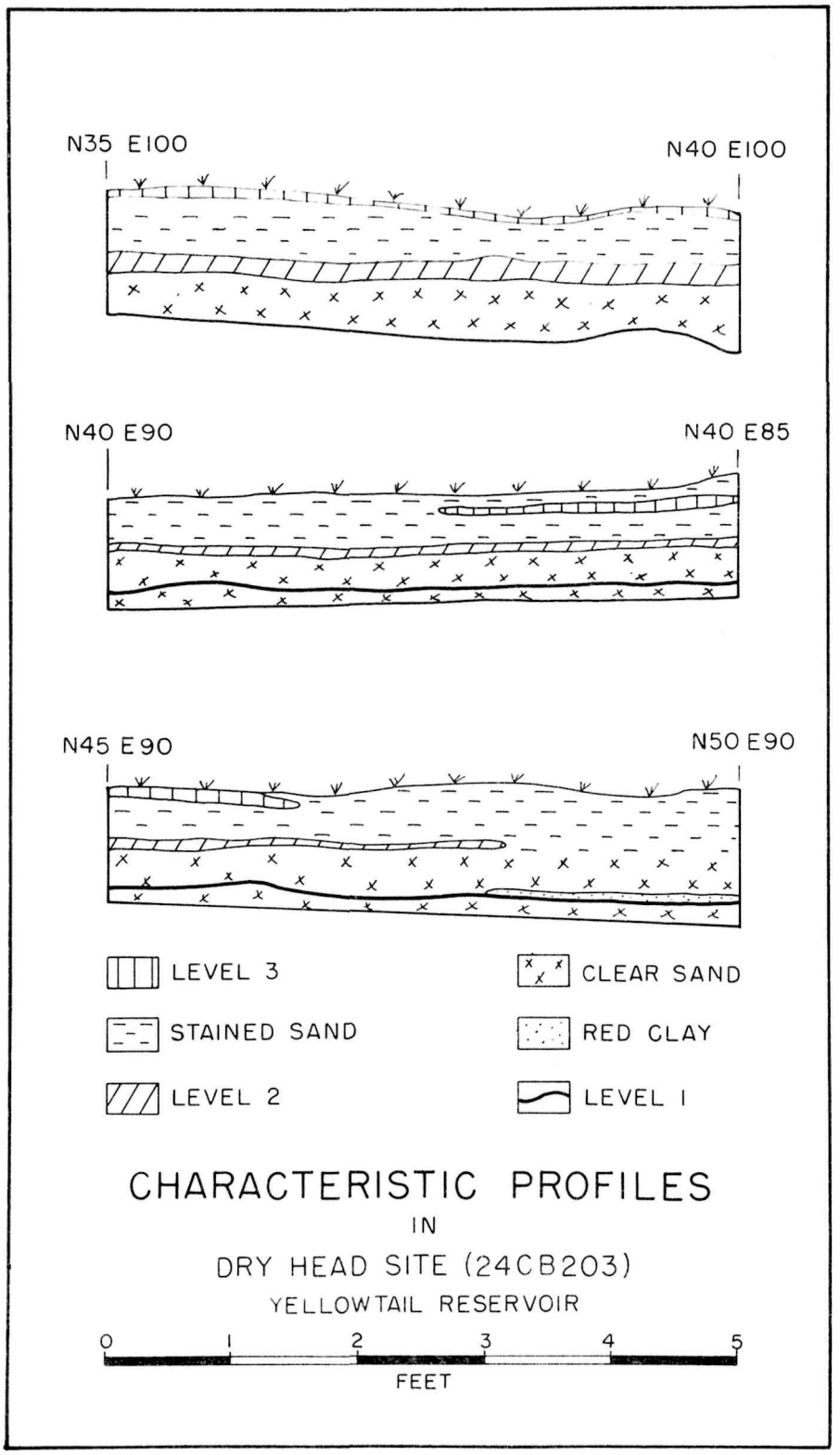


Figure 15 1963 T-810 JLL

rusted metal buttons with cloth attached, ten rivets, fifteen large fragments of tin cans, three pieces of a metal hinge, two brass fragments, and four pieces of bottle glass. These objects were probably left by ranchers who are known to have driven cattle across the river at this point and up Dry Head Canyon as recently as twenty years ago. Although generally confined to the trash lenses, a few objects of recent historic origin were found in Level 3.

Features

Posthole Pattern

A pattern of twelve shallow amorphous postholes suggested the use of a semi-circular structure composed of vertical or oblique poles. An open section in the pattern indicated an entrance facing to the west. The posthole pattern was approximately 13.0 feet in diameter and had an entryway measuring about 5.0 feet in width. The holes ranged from 0.3 to 0.5 foot in diameter and were very shallow, varying from 0.05 to 0.1 foot in depth. They did not appear to have been scooped out, but seemed to be the result of pushing poles into the soft earth. There were no indications of a floor or a long term occupation of this structure. It was most likely a temporary shelter of branches and foliage used for a short period of time.

Roasting Pit

Feature 1 was a rectangular grass-lined roasting pit measuring 2.0 feet in length, 0.8 foot in width, and 0.4 foot in depth. Pit edges were heavily stained with charcoal and were lined with grass placed in a criss-cross fashion covering the pit bottom. Large chunks of charcoal were on top of, and mixed with, the grass lining. Portions of the grass had been burned leaving charred remains in a few areas. The close proximity of the pit to the posthole pattern suggests that both were used by the same people.

Fire Pits

Two types of basin-shaped fire pits were represented at the Dry Head Site; those with stone circles around their peripheries (enclosed), and those without stone circles (unenclosed).

Three fire pits, Features 3, 6, and 7, were enclosed with a row of waterworn stones (8 to 13 in number) arranged around the top (Figure 16). Pits ranged from 2.8 to 4.1 feet in diameter (average of

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Figure 16

3.6 feet) and from 0.1 to 0.5 foot in depth (average of 0.4 foot). The fill consisted of stained sand, white ash, charcoal, and bone fragments.

Fifteen unenclosed fire pits ranged from 1.0 to 3.7 feet in diameter (average of 2.1 feet) and from 0.1 to 0.8 foot in depth (average of 0.4 foot). Nine of the fifteen were filled with charcoal stained sand, white ash, bone fragments, fire blackened rocks, and charcoal. The remaining fire pits contained a homogeneous fill of fine textured, charcoal stained sand.

Storage Pit

A straight-sided pit 1.4 feet in diameter and 1.1 feet deep was filled with fine textured, charcoal stained sand.

Table 5. Vertical distribution of features, Dry Head Site.

	Level 1	Level 2	Level 3	Totals
Posthole pattern.....			1	1
Rock enclosed fire pits.....	1	2		3
Unenclosed fire pits.....	3	10	2	15
Roasting pit.....			1	1
Storage pit.....		1		1
TOTALS:	4	13	4	21

Artifacts

Ceramic Remains

The twenty-two body sherds excavated at the Dry Head Site fall into three groupings, based on differences in paste and surface treatment. All sherds appear to be parts of vessels made by mass modeling, and the vessel walls thinned by the paddle and anvil technique.

Group A (2 sherds)

Tempering materials consist mainly of quartz particles ranging from 1.0 to 2.0 mm. in diameter. Exterior surfaces range from fine to medium and the cores are generally compact. Interior and exterior surfaces range from gray to black in color. Both surfaces have been smoothed and brushed over with twigs or grass. Specimens are 6.0 mm. thick (Plate 10c). Sherds are similar in paste and surface treatment to those of Group A from the Black Canyon Site. The only noticeable difference is that the Dry Head Site specimens have a coarser surface feel.

Group B (2 sherds)

These are grit tempered sherds with abundant particles of crushed granite and chert which range from 1.0 to 4.0 mm. in diameter. The surface feel is medium-fine and the core appearance is extremely porous. Exteriors are tan and interiors are fire-blackened. Exteriors are simple-stamped, but subsequently smoothed over and wiped with twigs or grass, almost obliterating the simple stamping marks. Interiors are smoothed and wiped. Specimens are 7.0 mm. thick (Plate 10b). The sherds are similar in paste and surface treatment to Tradition A sherds from the Hagen Site (Mulloy 1942:27).

Group C (18 sherds)

This group consists of 18 sherds from a single vessel. The fabric is of micaceous clay tempered with quartz and sand particles ranging from 1.0 to 4.0 mm. in diameter. Sherds have a tendency to break and crumble unevenly, suggesting that the original vessel was poorly fired. The surface texture ranges from medium to coarse. Interior and exterior surfaces range from gray to black. The exteriors indicate paddling, but the nature of the instrument used is not evident. Both surfaces are smoothed and heavily wiped. Sherds range from 5.0 to 7.0 mm. in thickness. Two large pieces are curved suggesting that they are either shoulder or basal sections (Plate 10a). Sherds of this group resemble pottery of the Intermountain or Shoshone Tradition (Mulloy 1958:84).

Projectile Points
(4 specimens)

1-(2 specimens)

Side notched specimens with straight to slightly convex edges and concave bases are made of chert (Plate 10d, e). The tip is sharp on one specimen and broken on the other. They are evenly pressure flaked both transversely and obliquely on the faces and carefully retouched on the edges. Side notches are formed by the removal of single flakes on the edges, and the bases are thinned by delicate pressure flaking. Both specimens are about 37.0 mm. long, 15.0 mm. wide, 3.0 mm. thick, and weigh 1.5 gm.

2-(1 specimen)

A tip and mid-section of a quartzite point with straight sides is unevenly worked on both edges; scars extend obliquely across the faces (Plate 10g). This example is 16.0 mm. wide and 6.0 mm. thick; the original length is unknown.

3-(1 specimen)

An elongate quartz specimen has straight edges, a slightly expanding stem, and a straight base (Plate 10f). The tip and part of the base are missing. Pressure flaking scars occur obliquely from the edges to the longitudinal axis of the specimen. The point is estimated to have been 30.0 mm. long when complete. It is 11.0 mm. wide, 3.0 mm. thick, and weighs 1.3 gm.

Knives
(4 specimens)

1-(2 specimens)

Triangular knives with convex edges and straight bases are obliquely flaked on the edges and carefully pressure flaked on the base (Plate 11b). Faces are unevenly retouched on one specimen and unretouched on the other. They are made of chert and quartzite. They measure 40.0 mm. and 60.0 mm. in length, 23.0 and 30.0 mm. in width, and 7.0 and 8.0 mm. in thickness, respectively.

2-(1 specimen)

A lanceolate chert knife with convex edges, a round base, and a blunt tip is obliquely percussion flaked on both faces; edges are retouched by pressure flaking (Plate 11a). One edge is

sharply beveled along the entire length of the specimen. The knife is 71.0 mm. long, 27.0 mm. wide, and 7.0 mm. thick.

3-(1 specimen)

The mid-section of a chert knife is percussion flaked on both faces and pressure flaked on the edges (Plate 11d). It is 39.0 mm. wide and 10.0 mm. thick.

End Scrapers
(8 specimens)

End scrapers are of the plano-convex variety with a bulb of percussion on the flat ventral surface opposite the scraping edge.

1-(3 specimens)

Triangular chert specimens have straight to slightly convex edges, rounded working edges, and slightly convex dorsal surfaces (Plate 11f, g). Bases are blunt and unretouched on two specimens and pointed on the third. All edges are pressure flaked; convex surfaces are unretouched on two specimens and percussion flaked on the third. Dimensions range from 42.0 to 76.0 mm. in length, 27.0 to 38.0 mm. in width, and from 6.0 to 9.0 mm. in thickness.

2-(5 specimens)

These range from rectangular to triangular and have straight to convex edges and steeply beveled scraping ends (Plate 11h-k). Bases are pointed on three specimens and straight on two. Flaking scars extend both transversely and obliquely across the convex surfaces of three examples and longitudinally on the convex surfaces of two specimens. Four specimens are chert and one is quartzite. Scrapers range from 28.0 to 39.0 mm. in length, 19.0 to 31.0 mm. in width, and from 6.0 to 8.0 mm. in thickness.

Side Scrapers
(26 specimens)

1-(6 specimens)

Ovate to rectangular flakes are modified by percussion flaking one surface and pressure flaking the edges (Plate 11e). Materials include chert (3 examples), quartzite (2 examples), and obsidian (1 example). Specimens range from 40.0 to 67.0 mm. in length, 27.0 to 38.0 mm. in width, and from 6.0 to 11.0 mm. in thickness.

2-(20 specimens)

Irregular flakes of chert, obsidian, and quartzite are unifacially flaked on one or more edges. Six are bilaterally worked and the remainder have a single scraping edge. Faces are unretouched.

Choppers
(2 specimens)

Two broken cobbles are unifacially percussion flaked on one edge (Plate 12g, j). The remaining edges are unmodified. One chopper is 124.0 mm. long and 67.0 mm. wide; the other is 134.0 mm. long and 98.0 mm. wide.

Hammerstone-Mano
(1 specimen)

An ovoid cobble is worn smooth on one surface and battered on the edges (Plate 12e). The implement is 142.0 mm. long, 91.0 mm. wide, and 76.0 mm. thick.

Bone Flesher
(1 specimen)

A serrated bone flesher was made from a bison metatarsal assemblage (Plate 12a). The metatarsal, naviculo-cuboid and cuneiform bones were found articulated; they were probably held together by dried hide and ligaments when the tool was in use. The distal end of the metatarsal shaft is cut or broken diagonally to form a chisel-like edge; the edge is serrated with fifteen longitudinal notches 1.0 to 2.0 mm. deep. Longitudinal striations on the exterior portion of the shaft, near the serrated edge, are derived from use. The entire assemblage is 213.0 mm. long.

Antler Knapping Tool
(1 specimen)

A knapping tool made from a deer antler is unmodified except for the working end which is highly polished and scarred through use (Plate 12b). The proximal end probably served as a handle. The specimen is 217.0 mm. long.

Scapula Knife
(1 specimen)

A bison scapula, broken on the proximal and distal ends, has a single working edge which served as a cutting tool (Plate 12i). The posterior border is left intact to serve as a handle and the opposite edge is beveled on both sides to form a sharp blade. Striations extending longitudinally along the beveled edge are derived from use. This specimen is 243.0 mm. long and 96.0 mm. wide.

Scapula Digging Tool
(1 specimen)

A bison scapula, 315.0 mm. long and 67.0 mm. wide, is broken on both ends and the edges (Plate 12k). Edges are blunted from use, suggesting that the scapula was used as a digging tool.

Bone Tubes
(2 specimens)

Segments of a deer femur and a deer tibia are severed at right angles to the longitudinal axes of the specimens (Plate 12e, f). Parallel striations on the cut ends indicate the use of a metal saw. Both pieces lack visible attempts to modify them after cutting and the interiors are extremely clean as if they had been reamed. They are 102.0 and 117.0 mm. long.

Incised Bone
(1 specimen)

The shaft of a long bone is broken on both ends and striated transversely across one surface (Plate 12d). The incisions (64 in number) are nearly parallel and almost imperceptible. One edge of the specimen is rounded and smoothed; the other exhibits a jagged break, probably occurring after the incising had been accomplished. The specimen is 128.0 mm. long.

Cut Epiphyses
(2 specimens)

The ends of deer long bones, one the proximal end of a tibia and the other a distal end of a femur, are severed at right angles to the long axes of the shafts (Plate 12h). Parallel striations on the severed

ends suggest the use of a metal saw. These pieces are probably end products resulting from the manufacture of bone tubes. They are 78.0 and 97.0 mm. long.

Iron Ore
(2 specimens)

The largest piece (78.0 mm. long) is porous and contains a few visible iron particles, whereas the smaller piece (46.0 mm. long) is denser and not as porous. Both specimens were subjected to intense heat, possibly in a fire pit.

Table 6. Vertical distribution of artifacts, Dry Head Site.

	Level 1	Level 2	Level 3	Surface	Test Pit	Totals
Pottery:						
Group A		1	1			2
Group B			2			2
Group C	18*					18
Projectile points:						
1.....		1	1			2
2.....	1					1
3.....					1	1
Knives:						
1.....	2					2
2.....				1		1
3.....				1		1
End Scrapers:						
1.....	1	2				3
2.....	2	2		1		5

(Table 6 continued)

	Level 1	Level 2	Level 3	Surface	Test Pit	Totals
Side scrapers:						
1.....	3	2	1			6
2.....	9	7	4			20
Choppers			2			2
Hammerstone-mano			1			1
Bone flesher			1			1
Antler knapping tool		1				1
Scapula knife		1				1
Scapula digging tool		1				1
Bone tubes			2			2
Incised bone.....		1				1
Cut epiphyses			2			2
Iron ore		2				2
TOTALS:	36	21	17	3	1	78

*All from one vessel.

Identifiable Bone

Six hundred and nineteen identifiable bones were recovered, 79 of which were articulated representing a single bison specimen. Faunal remains have not yet been identified, but the majority appear to consist of bison, deer, and elk. Each of the three cultural levels at the Dry Head Site contained a large quantity of bone suggesting that large game hunting was a major trait throughout the occupancy of the site. The largest amount of bone, 277 pieces, was found in Level 3, the latest

occupation. Seventeen bones were recovered from the soil between Levels 2 and 3, and 81 pieces were found in Level 2. In the soil between Levels 1 and 2 there were 107 single bones, three articulated sections with 9, 7, and 6 bones in each section, 4 fish bones, and 2 bison skulls. The earliest cultural level yielded 29 single bones, 79 bones from a bison skeleton, and one miscellaneous bison skull.

It is doubtful that the bison skeleton from Level 1 had been butchered. The skeleton was uncovered with the entire vertebrae section intact and the fore and hind quarters only slightly disturbed. In addition, the ends of the bones were not broken, cut, or multilated in any manner as is customary during butchering. From appearances this animal had washed down Dry Head Creek and was deposited near its mouth.

Fish remains from the Dry Head Site were identified by John G. Lundberg, University of Michigan. The four specimens recovered consist of two cleithrum, one coracoid, and one pectoral spine piece of Ictalurus Punctatus (Channel Cat).

Discussion

Excavations at the Dry Head Site revealed three cultural levels, the latest of which included a thin overlay of historic items. Stratigraphy was well defined with water deposited layers of sand and clay separating the cultural levels. The cultural assemblage from Dry Head with its emphasis on chipped stone, the large quantity of animal bone, and the scarcity of pecked and ground stone, indicates a hunting and gathering economy with the main emphasis placed upon the hunting of large game.

It is obvious that occupation of the Dry Head Site was not intensive, yet despite the relative scarcity of features and artifact remains, the three stratigraphically separate cultural levels are interpreted as distinct analysis units (components) each representing a different interval of time, whether of the same or of different cultural affiliations. The latest, Component A, is represented by features and artifacts from Level 3. Components B and C are expressed in terms of the cultural remains excavated from levels 2 and 1, respectively.

Due to the inadequate artifact sample from Dry Head and the non-diagnostic nature of most artifacts, it is difficult to evaluate the material in terms of specific cultural relationships with other known archeological units. However, a few cultural traits appear to have notable historical value in their spatial and temporal distributions. The majority of the more salient traits are associated with Component A.

The posthole pattern of Component A, consisting of twelve shallow post molds, is suggestive of a temporary shelter made of branches similar to shelters described from Component A of Bull Elk and the upper level of Empty Gulch (Mulloy 1958: Figure 24). Other Component A features, basin-shaped fire pits and a grass lined roasting pit, have little or no recognizable comparative value.

Simple stamped body sherds from the latest component resemble vessel fragments recovered from Black Canyon (Component A) and are suggested to have a historical relationship to ceramics of the sedentary village groups of the Northern Plains. The side notched point with a concave base is similar to other side notched points from the Bighorn Canyon and elsewhere, both within and outside of the Northwestern Plains, and is indicative of a relatively late occupation. The metapodial defleshing tool is a fairly common item, known to occur at the Hagen Site, Ash Coulee, Pictograph Cave III, Ghost Cave, and Site 48JO312 (Piney Creek).

The historic placement of Component A (about A. D. 1800 or later) is derived from the presence of bone tubes and cut epiphyses which bear cutting marks of a metal saw. In a broad interpretation, Component A is viewed as a manifestation of the generalized, historic, hunting and gathering culture pattern suggested for Component A of the Bull Elk Site.

Component B at Dry Head does not differ appreciably from Component A in cultural remains and could conceivably represent the same, or nearly same, cultural complex as Component A, but on an earlier time level. In contrast to Component A, Component B lacks evidence of shelters, simple stamped pottery, and evidence of historic contact. There is no real basis to justify a detailed comparison between Component B and other Northwestern Plains sites. The only two significant items, a body sherd and a side notched projectile point, suggest a relatively late placement. It is suggested that Component B represents an occupation probably about A. D. 1500.

Artifact remains of Component C include an expression of a slightly different cultural affiliation than that suggested for the two later Dry Head components; however, the paucity of data available from Component C does not allow for a firm cultural assessment. In general, the earliest component at Dry Head is similar to the intermediate one at the site in lacking evidence of shelters, simple stamping, and historic items; traits present in the latest Dry Head component.

On a more positive level, however, Component C contains in its artifact assemblage ceramics which are typical of the Intermountain Tradition pottery, tenatively assigned to the Shoshone (Mulloy 1958:199). Intermountain pottery is thought to represent a ceramic tradition indigenous to the intermountain region, and is known to occur "...from the Great Falls area of Montana southward into the Wyoming Basin and thence westward into the Northwestern Great Basin" (Mulloy 1958:199).

Within the Northwestern Plains Region, ceramics of this sort are frequently found associated with sherds thought to be related to the Mandan-Hidatsa pottery tradition. If the sherds of Component C are indeed representative of Intermountain pottery, then the occurrence of this pottery on an earlier level than the simple stamped (Mandan-Hidatsa?) pottery of Component A suggests that, at least in the Bighorn Canyon, Intermountain pottery is earlier than the easternly derived simple stamped pottery. The above interpretation must be considered with caution because of the small sherd sample considered; differential sampling may account for the apparent pottery variations.

Another trait serving to distinguish Component C from the later cultural units at Dry Head is the absence of bone artifacts in the former. This may be a result of differential sampling or it may indicate that bone, as a source of raw material for artifacts, was not favored by the occupants of component C.

Viewed from the standpoint of Mulloy's chronological sequence, the presence of pottery in Dry Head C indicates a Late Prehistoric placement (post A. D. 500); intuitively, I suggest a temporal placement of about A. D. 1200 for Dry Head C.

MINOR SITES INVESTIGATED

Fault Site

The Fault Site (24BH211) consists of twenty-one tipi rings and three rock shelters situated on the right bank of the Bighorn River approximately fifteen miles upstream from the mouth of the Bighorn Canyon and one-half mile downstream from Dry Head Creek (Figure 2). The tipi rings are located on a flat grassy terrace about fifty feet above the river. Eleven complete and ten partial rings visible on the ground surface are composed of single rows of waterworn stones arranged in a circle. Rings range from 14.0 to 20.0 feet in diameter; complete configuration have from 18 to 26 stones in their composition. Several tipi rings have small stones within the centers, but the stones are not fire-blackened and they do not indicate use as hearth stones.

The three rock shelters are situated in the limestone wall of the canyon about five hundred feet downstream from the tipi rings. Shelters are located at the base of a nearly vertical canyon wall and are approximately fifteen feet above the terrace where the tipi rings are located. Steep talus slopes extend from the shelter openings to the terrace below. The shelters were formed primarily by wind action and water erosion. Interior walls are irregular, exhibiting sharp angular cracks where chunks of limestone have recently fallen onto the floors. The shelters measure about 15.0 feet wide, 15.0 feet high at the mouth, and extend about 20.0 to 30.0 feet back into the canyon wall. The easternmost shelter is designated Shelter A, the intermediate one is Shelter B, and the westernmost one is Shelter C.

All three rock shelters were tested. Test pits about three feet square and extending to bedrock revealed that only Shelter A had been inhabited. Horizontal control in the excavation of Shelter A was maintained by the use of a grid system of five foot squares, and the vertical control was established by sighting a brunton compass from a point in the cave with an arbitrary elevation of 100.0 feet. The entire fill of Shelter A was excavated.

Four tipi rings were tested. A test pit about two feet square and one foot deep was excavated in the center of each of the four configurations. None of the probes yielded evidence of habitation.

Stratigraphy

The stratigraphy within Shelter A consisted of six distinct layers primarily composed of weathered limestone fragments. Each stratum was approximately 0.3 foot thick near the center of the shelter and increased to nearly 0.6 foot thick near the shelter walls. The lowest stratum was 3.5 feet below the present floor. The uppermost stratum lacked evidence of habitation, but the other five strata contained charcoal mixed with the limestone fragments. Color, ranging from gray to black, was the only means of distinguishing the strata from one another.

No visible stratigraphic changes were noted in Shelters B and C or in the terrace where the tipi rings are situated.

Features

Six fire pits were noted in the excavation of Shelter A. They consisted of randomly located lenses barely distinguishable from the general debris of mixed limestone and charcoal. Each fire pit measured about 1.0 foot in diameter; they ranged from 0.1 to 0.2 foot in thickness, and contained a fill of small burned bone fragments, fire-blackened rocks, charcoal, and an occasional stone flake.

Artifacts

Projectile Points
(2 specimens)

The mid-section of a corner notched chert specimen was found on the terrace surface near the stone circles. It is transversely percussion flaked on both faces, slightly retouched on the edges, and measures 22.0 mm. in width and 4.0 mm. in thickness. A small tip fragment of chert recovered from the uppermost cultural stratum in Shelter A is unevenly pressure flaked on both edges.

Side Scrapers
(3 specimens)

Rectangular side scrapers are small chert flakes retouched on one edge. Measurements range from 26.0 to 37.0 mm. in length, from 19.0 to 27.0 mm. in width, and from 3.0 to 6.0 mm. in thickness. All specimens are surface finds from the tipi ring terrace.

Choppers
(4 specimens)

Irregular choppers are river cobbles percussion flaked on one or more edges producing irregular, but sharp, cutting edges. All are surface finds, one from Shelter A and the remaining ones from the tipi ring terrace.

Modified Flakes
(2 specimens)

Small chert flakes are modified on one edge by pressure flaking. Flaking scars are discontinuous, and the specimens do not appear to be usable artifacts. One example was recovered from the latest stratum of Shelter A and the other was a surface find from the present shelter floor.

Discussion

Limited information obtained from the excavation of Shelter A and the investigation of the tipi rings does not allow for conclusive statements as to the probable cultural affiliations or time depth involved at the Fault Site. All that can be stated with confidence regarding Shelter A is that it was occupied intermittently, probably by individuals or small groups of nomads, during the Middle or Late Prehistoric Period.

The terrace with the tipi rings suggests a different type of occupation. Kehoe (1960) provides a convincing argument for the use of these stones as weights to hold down the interior flaps of conical skin-covered dwellings. Other stone circles of this type occur in various parts of Montana, North Dakota, Wyoming, and Alberta, Canada. In general, tipi rings are designated as belonging to the Late Prehistoric Period (ca. A. D. 500-1800).

Sojourn Site

The Sojourn Site (24BH213) is a lodge frame, of branches and twigs, located on a low gravel terrace on the right bank of the Bighorn River where it joins Bull Elk Creek (Figure 2). The site was recorded during the 1951 survey and was visited in the summer of 1962. At the time of the later visit, the lodge frame could not be found, nor were there any portions of it within the immediate

vicinity. The structure was a temporary one, not very durable, and, was most likely destroyed by either animals or the elements. A description of the frame, based upon photographs taken during the 1951 survey, is in print elsewhere (Brown 1963).

Although the frame was referred to the 1951 survey report as a hunting lodge, there are several other possibilities for which it could have been used. For example, Lowie (1922:225) mentions temporary shelters made of sticks, bark, and foliage used by warriors, eloping couples, and visionaries. There also remains the possibility that the structure was utilized as a sweat house. In Crow society the sweat lodge was used primarily as an offering to the Sun. These were dome-shaped structures generally constructed of willow branches and always situated near a river or stream. A fire hearth was normally located near the entrance of the lodge for heating the stones used for producing steam (Lowie 1935).

Although the use of this frame cannot be determined with exactness, it is reasonable to assume that it was built and used in historic times by the Crow Indians as a hunting lodge, a sweat house, or as a vision-quest shelter.

Demur Site

The Demur Site (24BH214) is located on the right bank of the Bighorn River about 400 yards upstream from the mouth of Bull Elk Creek (Figure 2). The 1951 survey report describes the site as a scattering of fire hearths exposed in the river bank. No artifacts were recovered during the survey. The site was reported to have been partly eroded away, with erosion presently continuing. A visit in 1962 revealed that erosion during the intervening eleven years had destroyed most of the deposit. No further work was done.

Pyrene Site

This site (24BH218) consists of two partial tipi rings situated on a small terrace 40 feet above the left bank of Big Bull Elk Creek where it joins Little Bull Elk Creek (Figure 2). The surrounding terrain is similar to that described for the Bull Elk Site (24BH212). Tipi rings at the Pyrene Site are about 20 feet in diameter and consist of embedded waterworn stones of various sizes, ranging from 0.5 to 1.1 feet in length. Eight test pits, 3.0 feet square and 2.0 feet deep, failed to reveal cultural remains. No further investigation was warranted.

Neap Site

This is a temporary campsite (24CB208) located on a river terrace along the left bank of the Bighorn River approximately one quarter mile downstream from Dry Head Creek (Figure 2). The site is situated on a sloping terrace covered with grass, juniper trees, and large talus boulders scattered about indiscriminately. Surface finds consisted of one small ovoid hammerstone, three worked flakes, and scattered stone chips. The hammerstone has pecking scars on the edges and a smooth flat surface on one end suggesting use also as a mano. Test pits, which failed to reveal a definite occupation zone, yielded only a few worked flakes and stone chips. This site does not seem to have been an important or extensive one and further investigation was not undertaken.

SUMMARY AND CONCLUSIONS

Archeological investigations were conducted at eight sites within the lower Bighorn Canyon of southeastern Montana. Extensive excavations were carried out at the Bull Elk Site (24BH212), the Black Canyon Site (24BH215), and the Dry Head Site (24CB203). Minimal investigations, primarily in the form of testing, disclosed negligible archeological value for the Fault (24BH211), Demur (24BH214), Pyrene (24BH218), and Neap (24CB208) sites. The Sojourn Site (24BH213) was visited, but not tested.

The three principal sites (Bull Elk, Black Canyon, and Dry Head) contained stratified campsites which yielded limited artifact inventories consisting mainly of chipped stone items, with lesser amounts of worked bone and scattered ceramic remains. Although minor differences exist between the three sites, all three share several traits. They are geographically situated on open, grass covered terraces over-looking the junction of a large tributary with the Bighorn River; they consist of small campsites suggesting temporary occupations; and they each yielded a well developed knife and scraper complex and abundant animal remains indicative of an economy based upon the hunting of large game animals and supplemented by gathering of edible flora resources native to the Bighorn locale.

Cultural assessments of the various components within the Bull Elk, Black Canyon, and Dry Head sites has proven to be a somewhat difficult task in view of the minimal data recovered from the sites and the lack of well defined cultural units (phases or foci) within the Northwestern Plains Region.

To date, the most perceptive interpretation of Northwestern Plains history is Mulloy's simplistic chronological sequence which is based, to a large extent, upon information derived from the excavation of Pictograph Cave (Mulloy 1958). This synthesis, however, is based solely upon establishing a temporal ordering of sites (or components), overlooking spatial and cultural considerations. As the corpus of archeological data increases more refined concepts, based upon spatial and cultural boundaries as well as temporal limits, are needed for a more meaningful interpretation of culture history and an analysis of the dynamics of culture change. Although information derived from the earlier components of Bull Elk, Black Canyon, and Dry Head does not provide a real basis for a detailed consideration of spatial and cultural elements, the latest components at Dry Head and Bull Elk are viewed in these terms, resulting in the definition of a phase in the sense used by Willey and Phillips (1958:22).

The earliest aboriginal occupations of the lower Bighorn Canyon are evidenced by a few nondiagnostic chipped stone artifacts and animal bones from the lower two levels at Black Canyon. These two levels are interpreted as being representative of a generalized hunting and gathering economy which was surely nonsedentary and probably more adjusted to hunting than to gathering and fishing. Specific relationships are undetermined between the two early Black Canyon levels and other Northwestern Plains sites. Temporally, the two levels precede Black Canyon Component C which is suggested to be Early Middle Prehistoric (2500-1500 B.C.).

Black Canyon Component C is the earliest complex within this portion of the Canyon in which diagnostic artifacts occur (a corner notched point, a point fragment resembling the Boxelder point type, and a rectangular graver). Two other points excavated in the upper two levels of the site are thought to be Hanna points and are suggested to be part of this component. Closest similarities are seen with Pictograph Cave I, the lower levels of the McKean Site, and the lower levels of Billings Bison Trap; Component C was probably extant from about 2500 to 1500 B.C. This was a time (post Altithermal) when a forager "tradition" was developing within the Northwestern Plains Region. It is inferred from cultural remains recovered from sites extant during this time that the occupants consisted of small groups of nomads who relied mainly upon wandering herds of animals and edible floral resources for their sustenance. Although the population of the region was probably still a sparse one at this time, artifacts typifying this lifeway are widely diffused throughout the Northwestern Plains. From this it is assumed that the occupants of sites or components similar to Black Canyon C traversed considerable distances in pursuit of their economic needs.

Later manifestations of the foraging lifeway are evidenced by sites producing corner notched porjectile points (Pictograph Cave II, upper levels of McKean Site and Billings Bison Trap), probably from about 1500 B.C. - A.D. 500. Corner notched points in the lower Bighorn Canyon (Component B at Black Canyon) are assumed to represent the excavated remains of the later foragers in this locale. Inferential evidence from sites other than Black Canyon point to an increased exploitation of the Northwestern Plains in which big game and edible resources were utilized. Foragers in the Shoshone Basin of western Wyoming, for example, developed a mano and metate complex indicative of a strong reliance upon gathering (Mulloy 1954); the Black Canyon component, however, does not appear to have been a part of this development. In Mulloy's sequence Black Canyon B represents

CHRONOLOGICAL SEQUENCE FOR LOWER BIGHORN CANYON

	Bull Elk (Area C)	Black Canyon	Dry Head
A. D. 1800	Component A		Component A
1400	Component B	Component A	Component B
1000	Component C		Component C
600			
200		?	
A. D. - B. C.		Component B	
200			
600		?	
1000			
1400		?	
1800		Component C	
2200			
2600 B. C.		?	
?		Level 2	
?		Level 1	

the Late Middle Prehistoric Period; a temporal placement of approximately 500 B.C. - A.D. 500 is suggested for Black Canyon B.

Increased exploitation of the Bighorn Canyon resources became evident during an interval of time which Mulloy refers to as the Late Prehistoric Period (A.D. 500-1800). This period is described as being characterized by: a greater variety of cultural material than the Late Middle Prehistoric Period; the introduction of ceramics; the first evidence of dwellings other than caves; and a change in emphasis from gathering to an economy based mainly upon the hunting of large game animals, primarily bison (Mulloy 1958:213).

Although basically still of a foraging nature, archeological complexes of this time indicate a rapid increase in their technological complexity so that they are generally easily distinguished from the earlier foraging complexes. In the writer's opinion, there is reason to believe that inhabitants of the later sites of this period developed an efficient food producing system resulting in an "economic surplus" of sorts. Such a surplus, however slight, could well have been a prime catalyst in stimulating the development of the far reaching aboriginal trade pattern described by Ewers in which the protohistoric Northwestern Plains Indian played such an important middleman role (Ewers 1954).

Outside the Bighorn Canyon the Late Prehistoric Period is well known at Pictograph Cave III, Ash Coulee, Ludlow Cave, Piney Creek sites, and the Hagen Site. Lower Bighorn Canyon components of this period include Bull Elk components B and C, Black Canyon A, and Dry Head components B and C. The only dated Bighorn component mentioned above is Bull Elk C with a date of A.D. 1125±125 years. Dry Head C is thought to represent a time level similar to Bull Elk C, and the remaining Bighorn components (Bull Elk B, Dry Head B, and Black Canyon A) are interpreted as later manifestations, probably extant during the sixteenth century.

It is a reasonable assumption that the cultural remains recovered from all sites attributed to the Late Prehistoric Period do not indicate a single culturally homogeneous complex for the Northwestern Plains. Variations between archeological assemblages are suggested by Mulloy (1958:214) to be the result of movements into the region of several culturally distinct peoples. There is little doubt that different groups of hunting and gathering peoples frequently traversed the region in their economic pursuits and left refuse indicative of their particular

culture, particularly after acquisition of the horse. However, some variations in the cultural remains could be explained, on an equally valid basis, as a result of diffused influence due to contact with groups residing outside the region, especially in view of the elaborate aboriginal trade pattern in which the later Northwestern Plains Indian played such a significant role.

Sherds from Dry Head C, which resemble pottery of the Intermountain ceramic tradition, are suggestive of a Shoshone occupation or influence, and simple stamped sherds from Black Canyon A evidence an easternly derived ceramic influence, probably from the sedentary village groups of the Northern Plains.

A historical relationship may be inferred between the simple stamped pottery at Black Canyon and the simple stamped Mandan-Hidatsa pottery present at the Hagen Site, Ash Coulee, Piney Creek and Ludlow Cave, sites which are thought to represent a transitional state between the Mandan-Hidatsa tradition of the Missouri River and the ethnographically known Crow. However, a relationship of this sort cannot be determined due to the lack of knowledge regarding the temporal and cultural significances of simple stamped pottery in the Northwestern Plains and the possibility that Crow movement into this region, as supposedly evidenced at Hagen, Ash Coulee, Piney Creek, and Ludlow Cave, may actually postdate the latest Black Canyon occupation.

Post-contact components within the Bighorn Canyon include the latest occupations at the Dry Head and Bull Elk sites. The Historic Period (Post A. D. 1800) as described by Mulloy, does not differ appreciably in artifact content from the later sites of the preceding period (Late Prehistoric); primary differences include the presence of contact items and fewer native artifacts in sites of the Historic Period.

This was a time of increasing tribal mobility due, in part, to a fuller utilization of the horse for rapid transit and the expanding trade system precipitating wider and more intensive contacts with peoples of other regions. This was also a time when the typical Plains Indian lifeway was being expressed in the fullest sense of the term. Archeologically, excavated sites of this period (or horizon) offer meager cultural inventories in comparison to the richness of the ethnographically known way of life for the Northwestern Plains inhabitants. However, in spite of the paucity of artifacts from the known

historic sites, certain parallels may be drawn and generalizations made, resulting in the definition of distinct archeological units. One such unit is defined below.

Cultural traits present in Dry Head Component A, Bull Elk Component A, Pictograph Cave IV, and Empty Gulch test (upper eight inch level), and Site 48JO312 (Piney Creek), are suggestive of an archeological unit on the phase level as defined by Willey and Phillips (1958:22-24); a unit which, 1) possesses cultural traits distinguishing it from other similar units, 2) is spatially limited to a locality or a region, and 3) is temporally limited to a relatively brief period of time. This unit is herein termed the Absaroka Phase and is described as follows.

The name "Absaroka" is derived from a word (Ap sar roo kai) which the Crow in their own language gave themselves (Denig 1953: 20); it is also the name given to a mountain range in northwestern Wyoming and south-central Montana. Generally speaking, components of the Absaroka Phase are representative of the historic mounted bison hunters, equestrian groups who developed the conventional lifeways of the Plains Indian as it was expressed in the Northwestern Plains.

Components are for the most part small campsites indicating brief occupations, suggesting nomadism. Permanent dwellings, in the sense of the more eastern earth lodge, were not used. Dwellings consisted of caves, hide covered conical huts, or small brush covered lodges with vertical or oblique outer poles. Ceramics include generalized simple stamped utilitarian vessels; however remains are rare suggesting that ceramics were not a significant item. Characteristic chipped stone items include: small triangular projectile points which are either unnotched or side notched, the latter sometimes exhibiting a basal notch; drills with expanding bases; both ovate and elongate knives; triangular, plano-convex end scrapers; and a variety of side scrapers. Other stone artifacts, generally non-diagnostic, include choppers, hammerstones, and an occasional mano. Briefly, bone items consist of metapodial fleshers, knapping tools, scapula knives, bone awls, bone tubes, and cut epiphyses. The well developed knife and scraper complex and abundant animal bones present in these components are indicative of a strong dependence upon large game animals for subsistence; there is little or no evidence of horticulture. Scattered evidence of contact items (primarily metal) in Absaroka Phase components marks the post-

contact period, beginning about A. D. 1800. This date is accepted as the approximate temporal beginning of the phase; a terminal date of about 1850 is suggested for the phase, this represents a time when most of the Northwestern Plains tribes were in the process of being pacified by the United States Army.

Ethnic identity of Absaroka Phase peoples is postulated to be Crow. Mulloy (1958:215) has hinted that Pictograph Cave IV and other similar historic sites are probably Crow campsites. Evidence for the putative association of Absaroka Phase with the Crow is based solely upon the temporal and spatial distribution of Absaroka components. Ethnographic accounts (Lowie 1935; Denig 1953) place the boundaries of historic Crow occupancy in an area roughly along the Yellowstone River and its tributaries, bounded by the Musselshell River to the North, the Wind River to the South, the Powder River to the East, and the Absaroka Mountain Range to the West. Absaroka Phase components lie in the heart of Crow territory, and are the most likely, if not the only, reported archeological manifestations which fullfill the temporal and spatial requirements necessary for Crow candidacy. It is expected that future investigations within the Northwestern Plains will provide ample evidence for positive identification of the Crow and other groups known to have inhabited the region.

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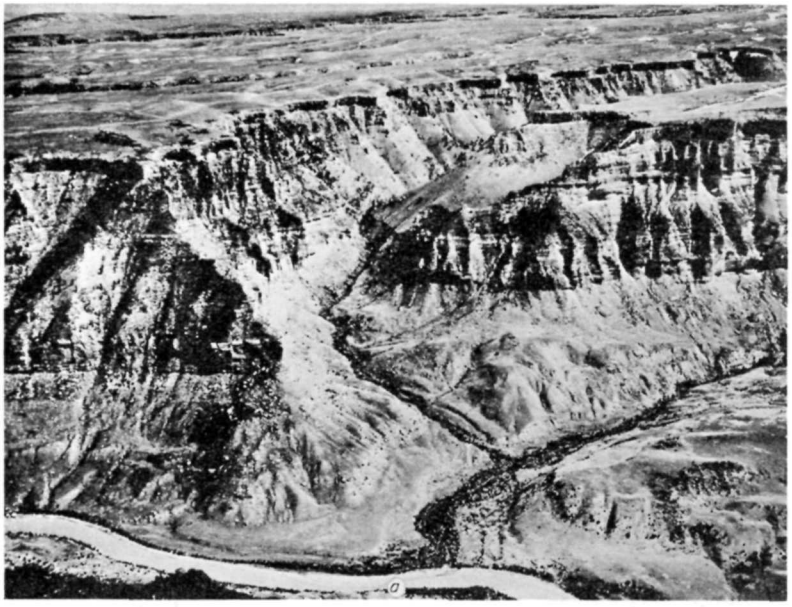




Plate 1 - a View of Bull Elk Canyon toward the east. The Bull Elk Site (24BH212) is located on the right bank of Bull Elk Creek where it enters the Bighorn River.

b View of the Bull Elk Site (24BH212), Area C, toward the southwest.





Plate 2 - a View of the Black Canyon Site (24BH215) toward the west.

b View of the Dry Head Site (24CB203) toward the south.

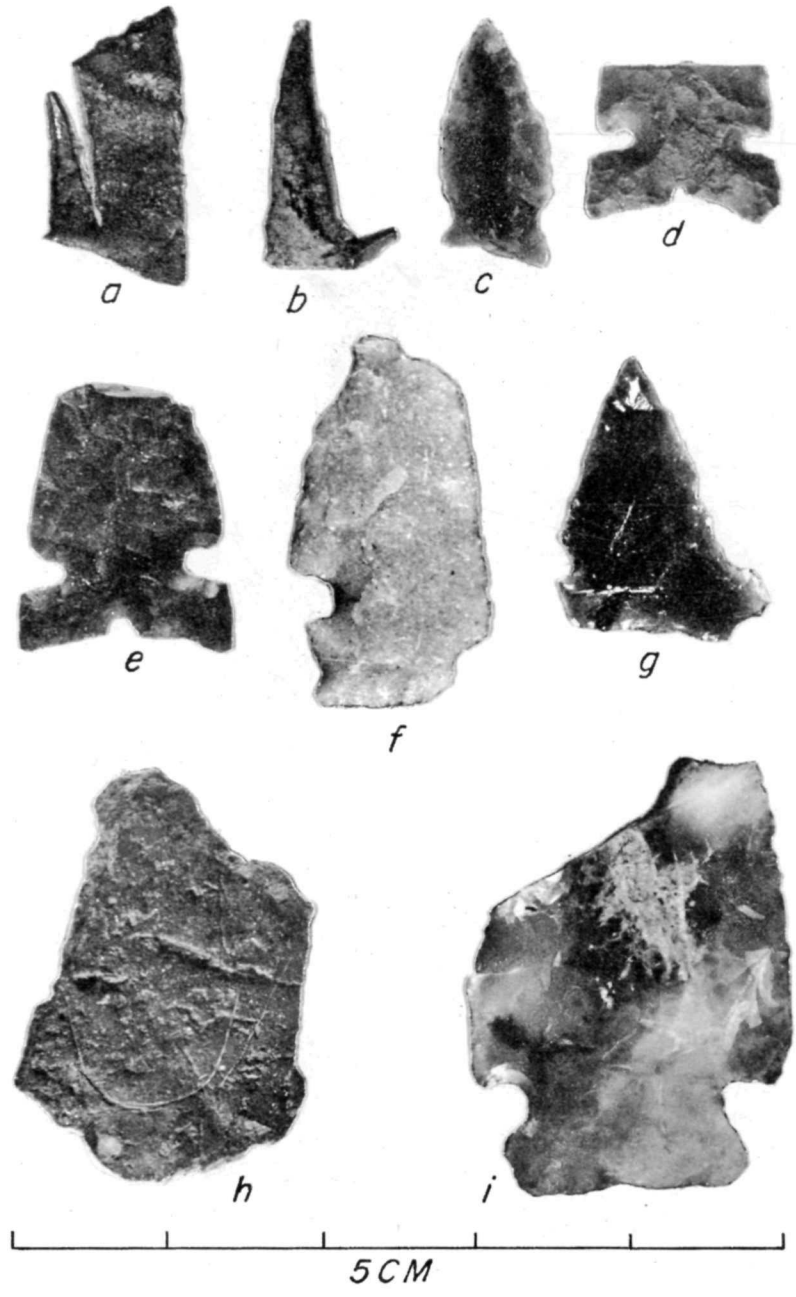


Plate 3 Bull Elk Site (24BH212). Cut brass pieces (Area C), a and b; projectile point (Area D), c; projectile points (Area C), d-g, i; body sherd (Area B), h.

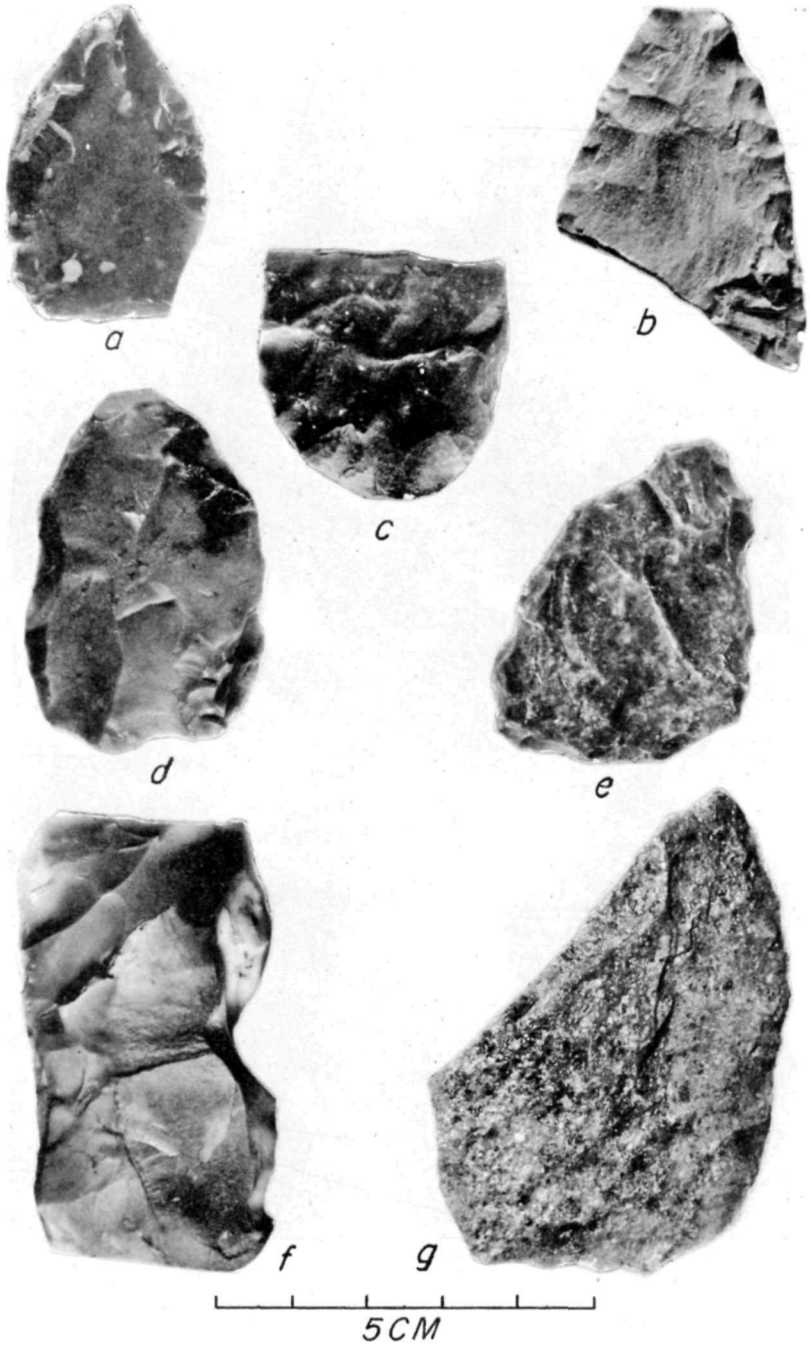


Plate 4 Bull Elk Site (24BH212). Projectile Point (Area B), a; knives (Area C), b-d, f and g; knife (Area B), e.

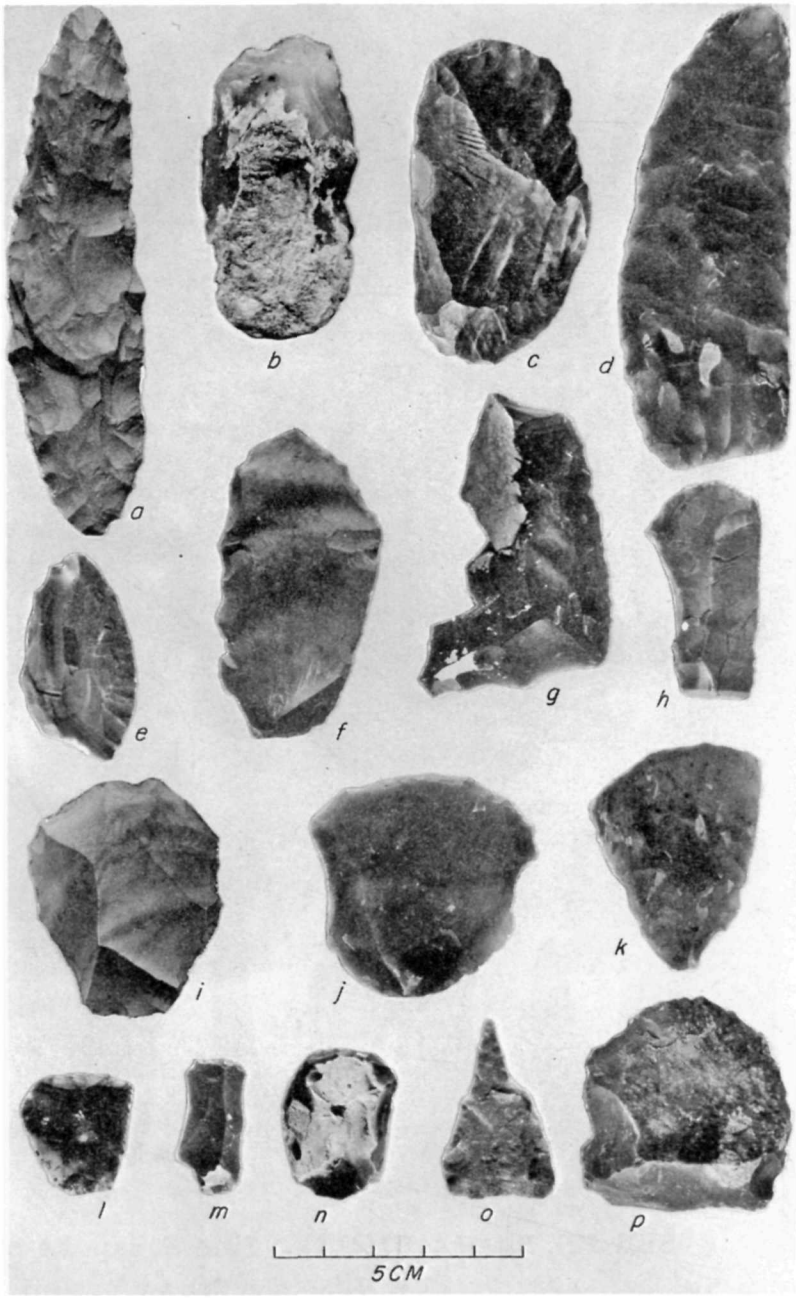


Plate 5 Bull Elk Site (24BH212). Knives (Area C) a and d; end scrapers (Area B), b and h; side scrapers (Area B), c, e and f; side scrapers (Area C); g; end scrapers (Area C), i, k, l and p; end scraper (Area A), j; end scrapers (Area D), m and n; drill (Area B), o.

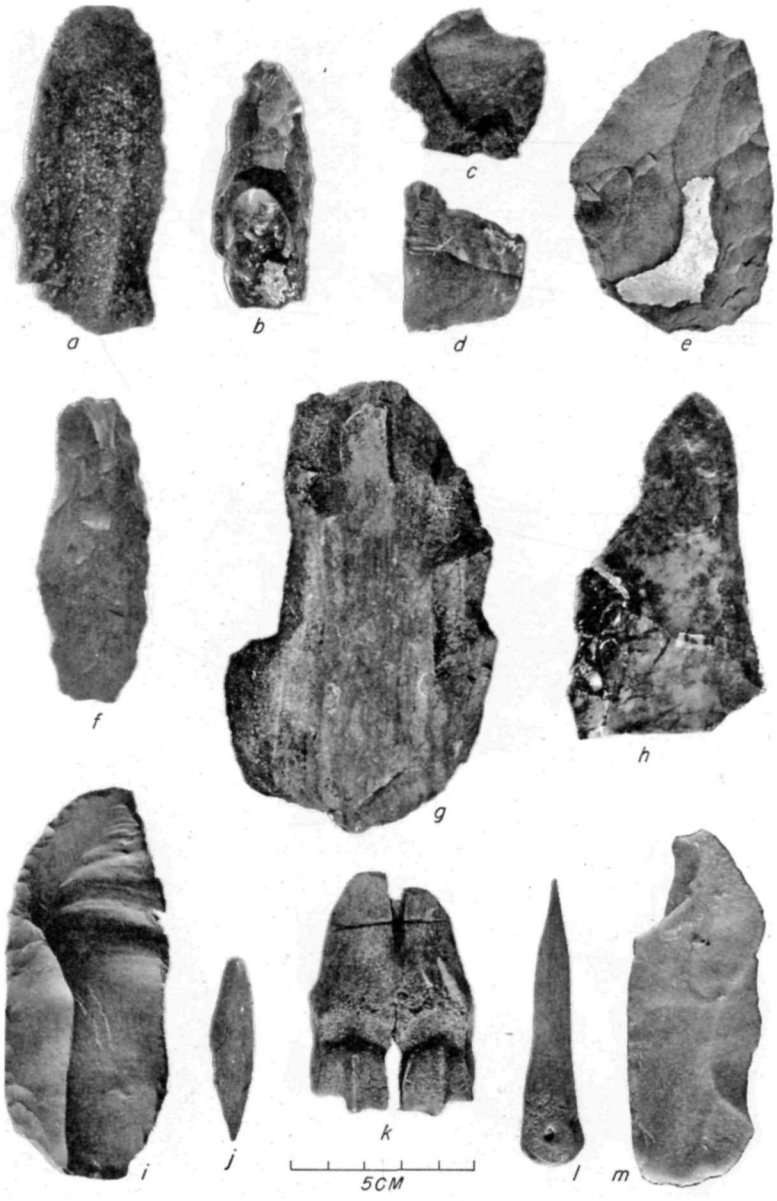


Plate 6 Bull Elk Site (24BH212). Side Scrapers (Area C) a-f, h, i and m; chopper (Area C), g; antler tine (Area B), j; cut epiphysis (Area C), k; awl (Area C), l.

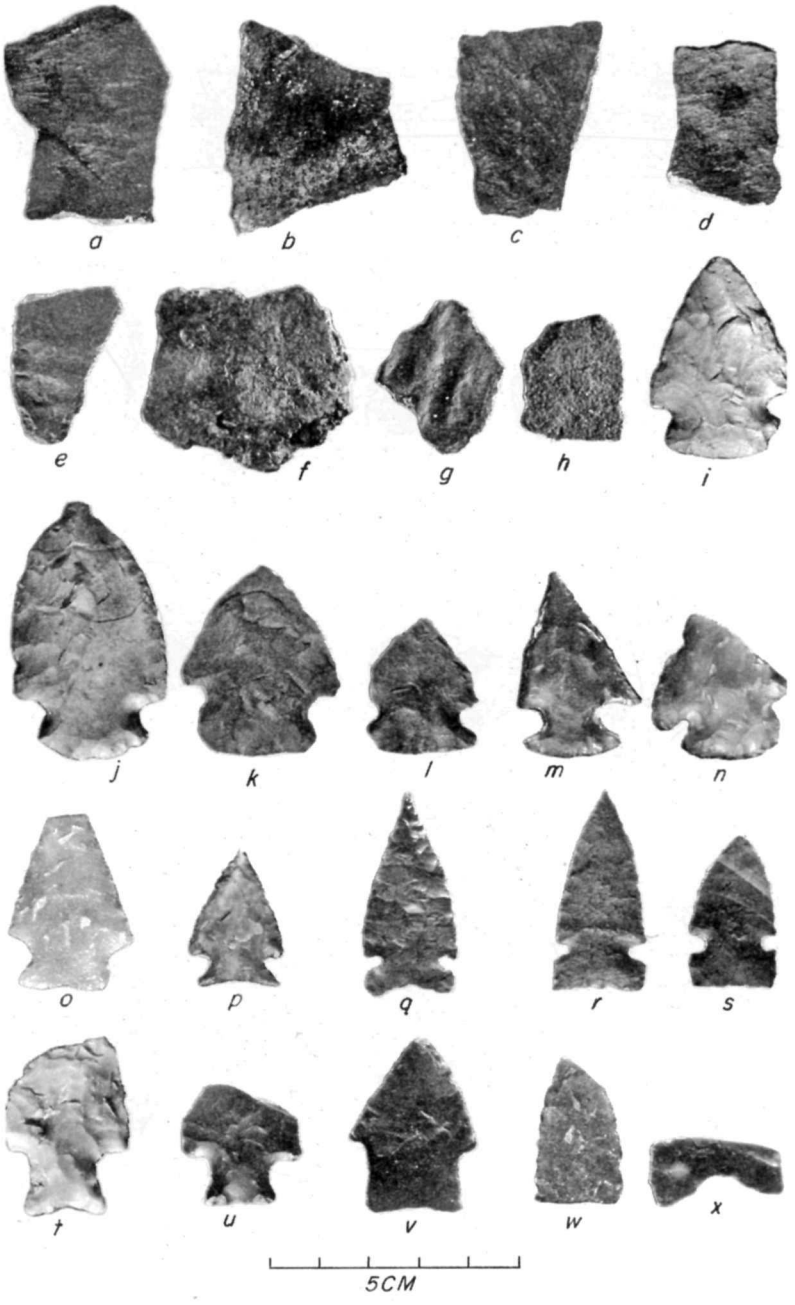


Plate 7 Black Canyon Site (24BH215). Pottery, a-h; projectile points, i-x.

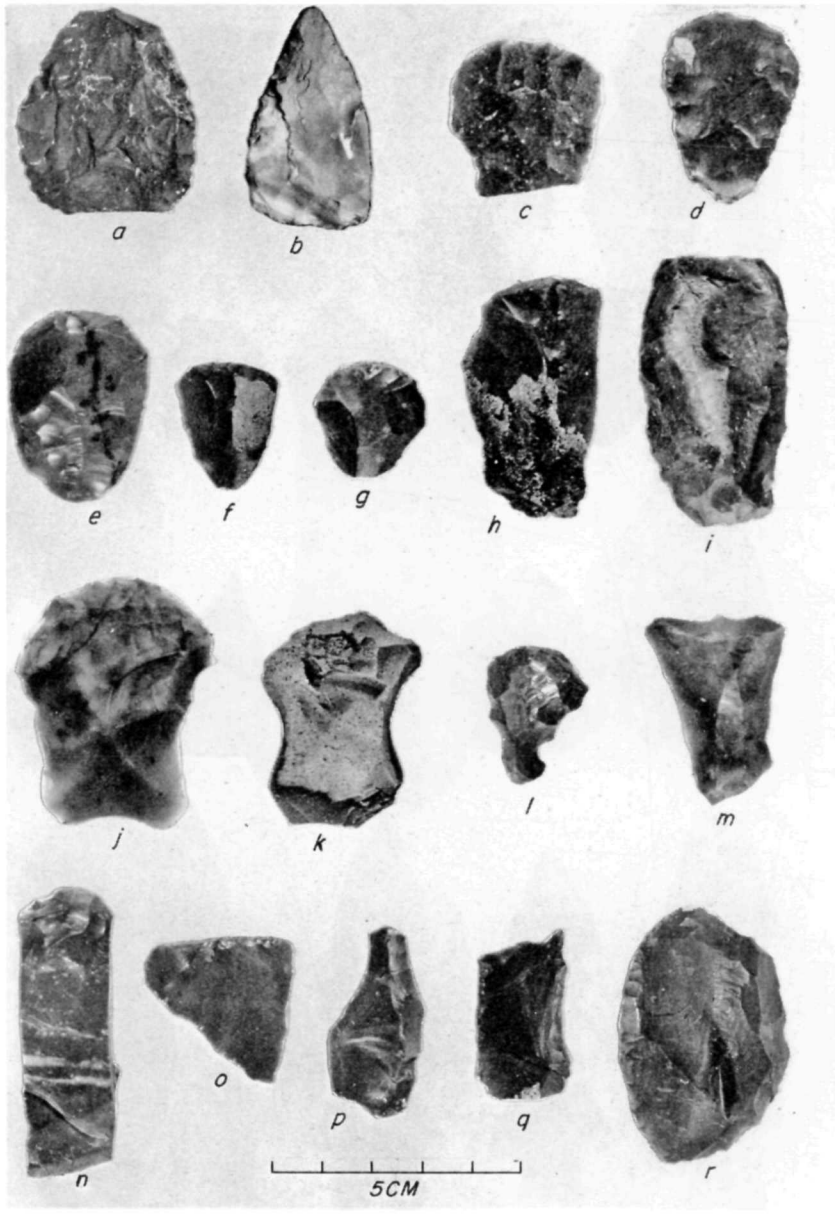


Plate 8 Black Canyon Site (24BH215). Knives, a-c; end scrapers, d-n; side scrapers, o and r; drill, p; graver, q.

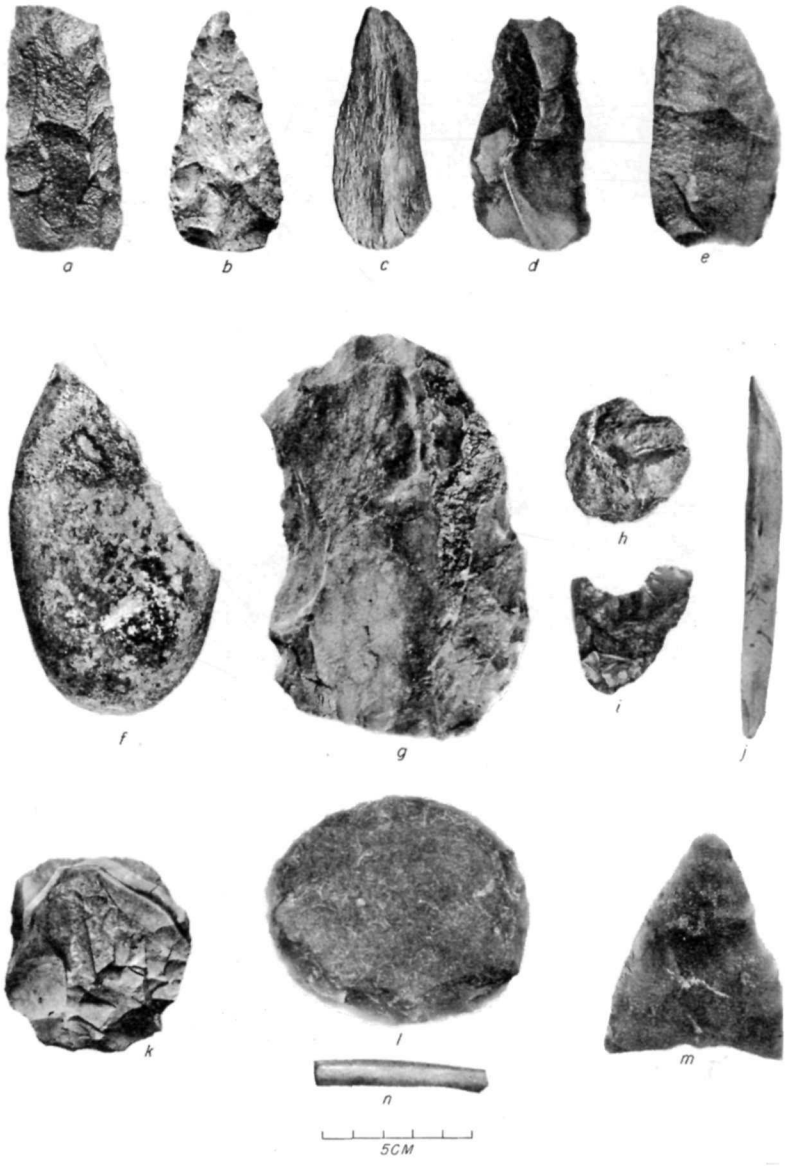


Plate 9 Black Canyon Site (24BH215). Knives, a and b; bone spatulate, c; side scrapers, d and e; hammerstone, f; choppers, g, k, and l; stone disk, h; spokeshave, i; knapping tool, j; knife, m; bone tube, n.

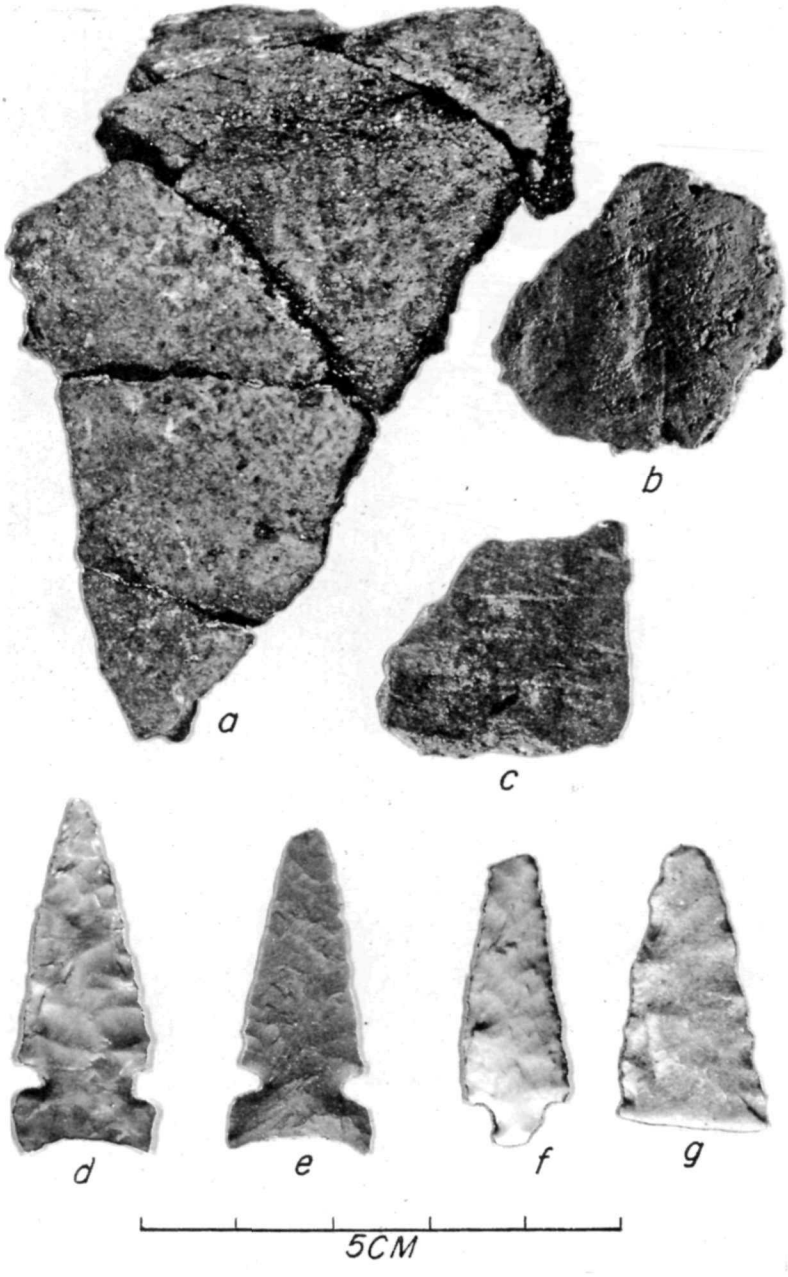


Plate 10 Dry Head Site (24CB203). Pottery, a-c; projectile points, d-g.

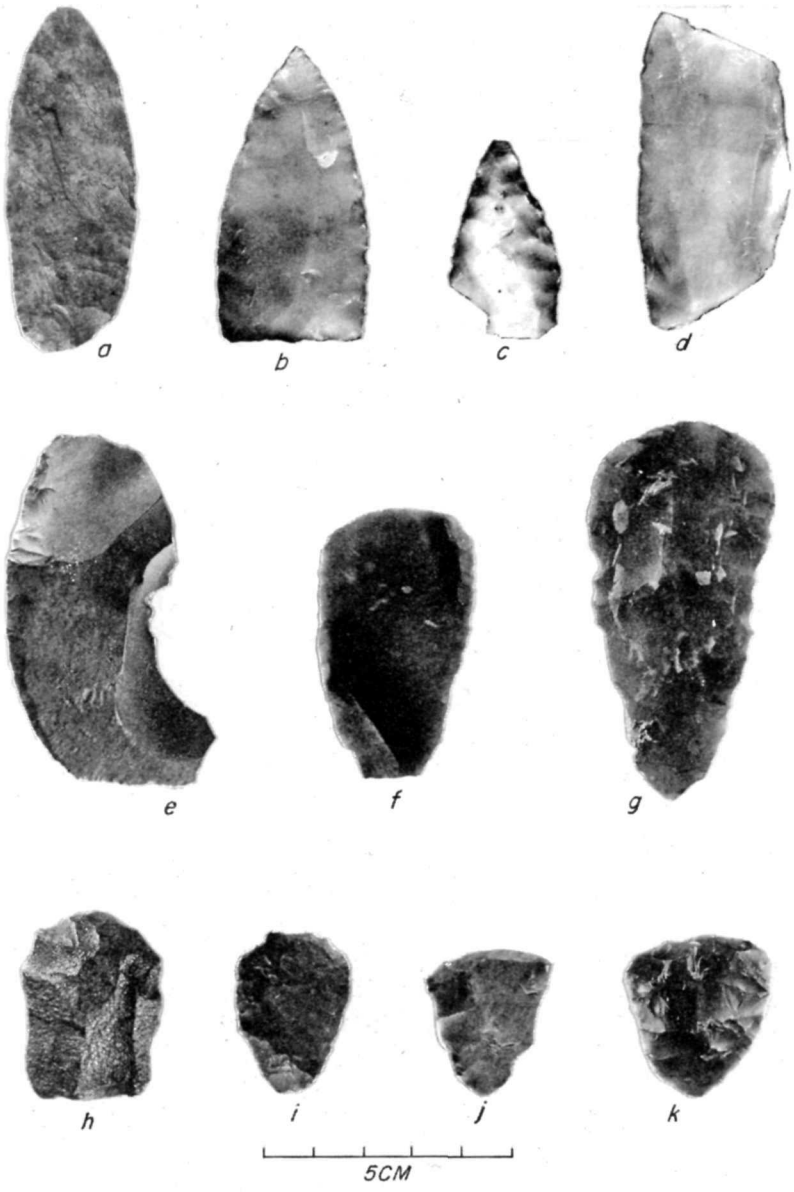


Plate 11 Dry Head Site (24CB203). Knives, a-d; side scraper, e; end scrapers, f-k.

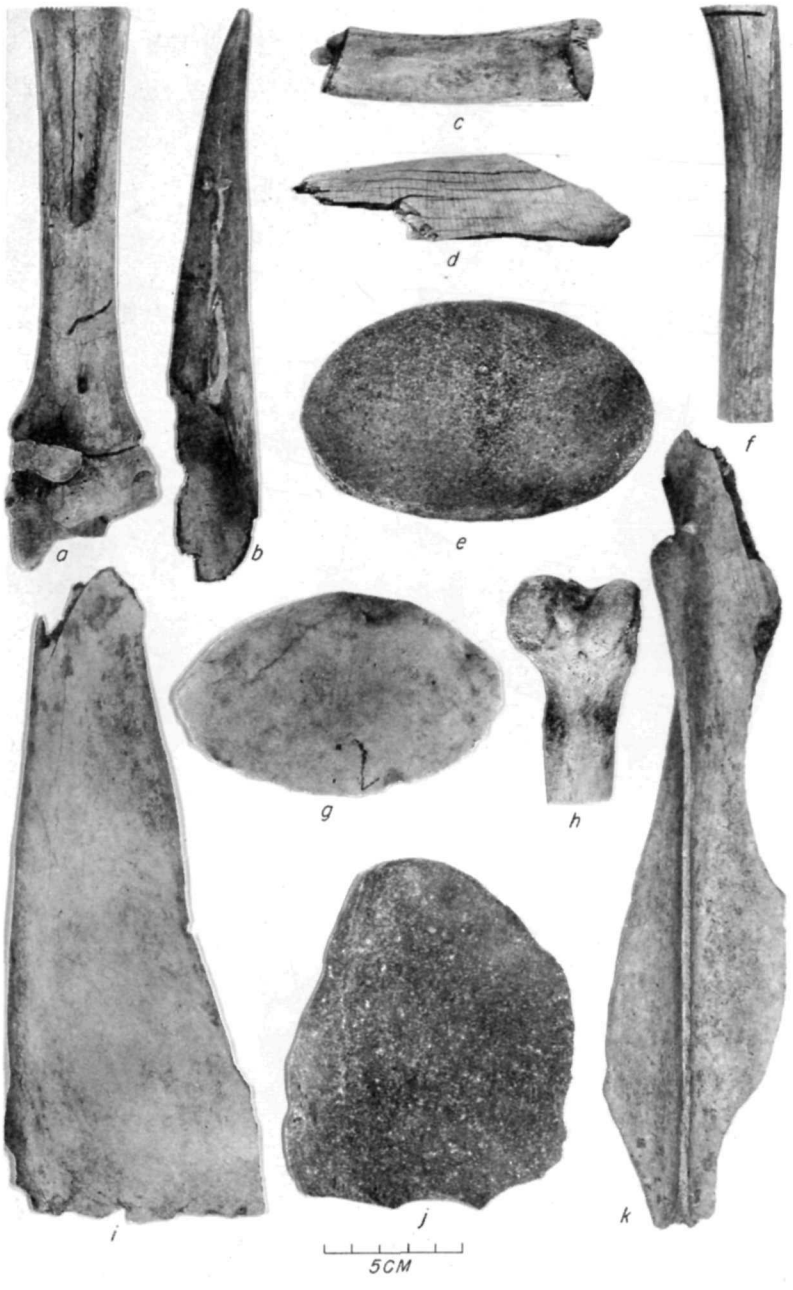


Plate 12 Dry Head Site (24CB203). Serrated flesher, a; antler knapping tool, b; bone tubes, c and f; incised bone, d; hammerstone-mano, e; cobble choppers, g and j; cut epiphysis, h; scapula knife, i; scapula digging tool, k.