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Preliminary archaeological survey of the Clark Fork River, Carbon County, Montana

Lawrence L. Loendorf
The University of Montana

A PRELIMINARY ARCHAEOLOGICAL SURVEY OF THE CLARK FORK RIVER, CARBON COUNTY, MONTANA

By

Lawrence Lee Loendorf

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several days in the field with me and was of great assistance in mapping sites.

INTRODUCTION

Area Defined

The area under study for my master's thesis was the Clark Fork of the Yellowstone River Valley. The Clark Fork originates in Montana on the Beartooth Plateau near the east entrance of Yellowstone National Park. A brawly little stream, it flows east and south into Wyoming and then swings north, back into Montana. It runs about 100 miles through its own valley to a junction with the Yellowstone River near Laurel, Montana. The valley is flanked on the west by the Beartooth Mountains and on the east by the Pryor Mountains. During its course, it passes through the farming communities of Belfry, Bridger, Fromberg, and Edgar, Montana.

This area was chosen for an archaeological survey for several reasons:

1. The area is rich in archaeological sites.

2. These sites are being vandalized at such a rate that all surface indications of their presence will disappear within a few years.

3. The area is between the Yellowstone Park Archaeological Survey (Taylor 1964), the Yellowtail Dam Archaeological Survey (Husted 1965 a), and the Yellowstone River Archaeological Survey (Mulloy 1958). A survey was needed in the Clark Fork area to help develop a full archaeological picture of Southeastern Montana.

The survey was undertaken by my wife, Jane, and me during the summers

of 1964 and 1965. The work was started by mailing questionnaires in the spring of 1964 to several persons who were reported to possess Indian artifacts from the area. Secondly, we interviewed members of the Billings Archaeological Society in an attempt to learn the locations of other archaeological sites.

After entering the field in the summer of 1964, we followed up all leads and walked about fifty percent of the valley floor and adjoining terraces in search of sites. We checked some likely sites in the remaining portion of the area and interviewed land owners. We found a total of fifty-one sites in the course of the survey, and collected varying amounts of lithic material from each site.

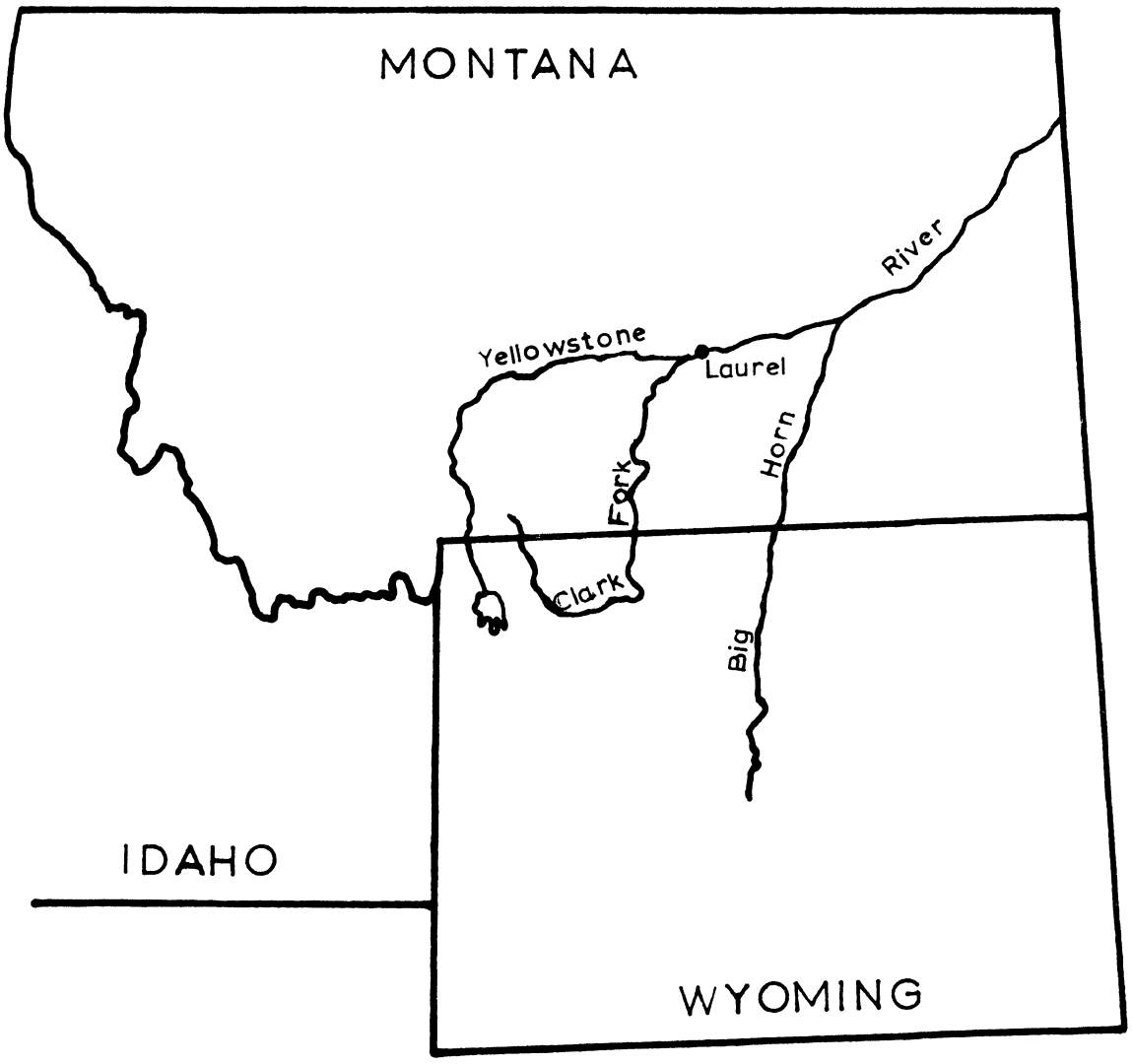
The majority of the sites were located in Carbon County, Montana, with a few lying in Bighorn County, Montana, and in Park County, Wyoming. Smithsonian River Basin Survey site numbers were assigned to each of them.

In this thesis I propose to report the location and geographical features of the sites and to develop a distribution of the sites. The thesis also contains an analysis of the artifacts recovered and a comparison of them with other artifacts found on the Northwestern Plains of the United States. However, the ultimate object of the thesis is to show the significance of the sites and the artifacts together and to reconstruct a past way of life for the early inhabitants of the valley.

Figure One

Figure One:

Sketch map showing the general area of the survey.


MONTANA
River
Yellowstone
Laurel
Horn
Fork
Clark
Big
IDAHO
WYOMING

Previous Archaeological Work Done in the Clark Fork Area

Dr. William Mulloy (1943) reported the excavation of a prehistoric campsite near Red Lodge, Montana. The site is located in a small meadow about two miles east of Red Lodge. The area is quite moist due to the presence of small springs. This dampness has caused cave-ins of some abandoned coal mines which exposed a large stratigraphic column of soil sequences below the surface. It was in one of these cave-ins that Mulloy first collected evidence from the site.

The chipped stone material consisted of side-notched points, corner-notched points, Duncan points, blades similar to Agate Basin and Browns Valley points, ovoid and triangular knives, drills and scrapers. Ground stone included tanning stones, a pestle, a metate and a mano. The unworked bone material included bison, mule deer, elk, horse, black bear, coyote, badger, porcupine, prairie dog, gopher and other small mammals.

Mulloy (1943: 179) says that all types of artifacts occurred at all levels. He believes this mixture occurred from natural causes.

In the early fall of 1941, the American Museum of Natural History undertook excavations of several caves in Sage Creek Canyon, located in the Pryor Mountains about twenty miles south of Bridger, Montana. The area is Madison Linestone and is filled with grottoes. N.C. Nelson (1943: 162) and his American Museum crew excavated or tested about fifteen of the caves. Two were quite

large and had pictographs on the walls. Nelson found an array of artifacts ranging from corner-notched points to historic material. Unfortunately, the cultural sequences of the shelters are not recorded in his reports.

Two historic burials are reported near the town of Roberts, Montana (Mulloy 1958: 182). The details of the two burials were lost. A badly-rusted iron projectile point and part of a bronze button were among the artifacts found.

Besides the sites mentioned, the Billings Archaeological Society had investigated several sites in the Clark Fork Area. These, for the most part, are recorded in the sites section of this report.

THE PHYSICAL SETTING

Climate in the Clark Fork Area

The Clark Fork Region of the Yellowstone Drainage has a variety of local climatic conditions. The majority of the annual precipitation is snow which falls during the winter months. Spring rains help to melt the snow and cause a high runoff. Many of the streams flow only during the spring months. Summers are warm and dry in the lower elevations.

Most of the weather comes from the west in both summer and winter. Since the high Beartooth Mountains to the west receive most of the orographic precipitation, the Clark Fork is in a rain shadow. This accounts for the almost desert-like conditions of the upper part of the valley.

Local distribution of climate is also conditioned by irregular mountainous relief. This is most noticeable in temperature and moisture contrasts on different slopes. Different soils and vegatation occur on opposing slopes. Often there is grassland on the southern slopes and forest on the northern exposures.

Differences in altitude are responsible for considerable local variation in climate. For every 1000-foot increase in altitude, there is an average decrease of three degrees Fahrenheit in temperature.

Mean Annual Temperature	Absolute Minimum Temperature	Absolute Maximum Temperature	Mean January Temperature	Mean July Temperature	Mean Annual Rainfall	Mean Annual Snowfall
39.9	-37	101	20.6	64.6	19.53	97.2

Table 1, Information on Climate from the Red Lodge Station, Carbon County, Montana.

The Clark Fork is subjected to a number of unique climatic events. In the winter, the valley is exposed to blizzards sweeping in from the north. In contrast to the blizzards, chinook winds occur in the Clark Fork Area. These chinooks blow down the eastern slopes of the Rockies and are generally of mild velocity. Sometimes rapid temperature changes are associated with the adiabatically warming chinook winds (Ward 1925: 381).

Summertime thunderstorms are frequent in the Clark Fork. Two or three of them can be severe enough to damage crops and kill livestock.

The Clark Fork Valley is noted for its "Indian Summers" and usually the area has a long, warm autumn. However, this does not occur with enough regularity to be predictable on an annual basis.

Topography

The Clark Fork Area can be considered to be in a transitional zone between the Rocky Mountain Topographic Province and the Plains Topographic Province. The survey area lies on the boundary between these two provinces.

The most significant topographic feature in the area is the Beartooth Mountains. which were formed by a large cenozoic uplift and now include a great crustal block about eighth miles long and thirty-five miles wide. They trend roughly northwest to southeast between the towns of Livingston, Montana, on the northeast end, and Cody, Wyoming, on the southeast corner. The town of Red Lodge, Montana, is situated near the middle. The Beartooths are bordered on the southeast side by the Clark Fork of the Yellowstone River and the thick Tertiary series that comprise the Absaroka Mountains; on the east and northeast by the Bighorn Basin; on the north by a complex group of smaller uplifts, and on the northwest by the Bridger Mountains. The Beartooths are a rugged range with their highest point at Granite Peak (12, 850 feet in elevation). They rise abruptly from the plains with a difference in elevation of 4, 000 to 5, 000 feet along the east and northeast sides. The crest facing the Clark Fork Valley lies about 9, 000 feet above sea level.

The Beartooth range is composed of mostly pre-cambian crystalline rocks, which are exposed along the crest of the mountains. At several places on the steep face along the Clark Fork Valley, these crystalline rocks crop out where they have been thrust over by younger sedimentary rocks.

Usually, though, the face exposed in the Clark Fork Valley is composed of steeply overturned Paleozoic rocks.

The Paleozoic stratum is about 2,000 to 3,000 feet thick and all but Silurian deposit are found along the mountain front. The Paleozoic sequence is predominantly a limestone section, with the thickest units being massive beds of Madison limestone and Bighorn dolomite. The Gros Ventre, Niobrara, Carlile, and Grove Creek shales are associated in some places with the tough Pilgrim limestone.

Outward from the Paleozoic section in the mountain front is the Mesozoic sequence, which is about 4,000 to 6,000 feet thick. The Mesozoic beds are not usually as steeply tilted as the Paleozoic, but have been exposed by the same thrust.

In the Clark Fork Valley proper, the characteristic geologic features are asymmetric domes and anticlines aligned in a fairly straight line between Bowler and Livingston, Montana, a distance of 115 miles. There are two major fault zones along this lineament which, in part, control the course of the river.

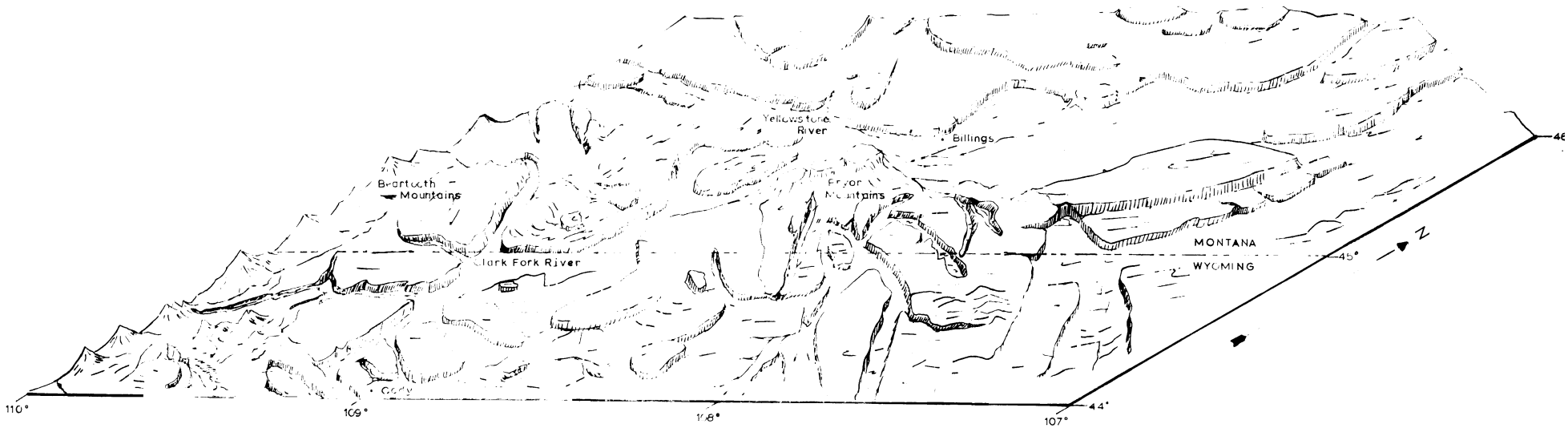
The countryside is broken into rims, canyons, coulees and buttes. The majority of the exposed sandstone is beds of Eagle and Telegraph Hill, which are sheet jointed and often accentuated by differential weathering. This creates many ledges and stepped rims in the sandstone cliffs. The Eagle sandstone will support pine trees, while the shales carry sage or greasewood.

The Clark Fork River used to flow with the Shoshone River through the

Figure Two

Figure Two:

Generalized pictorial view of the Clark Fork area and surroundings.


Yellowstone River
Billings
Beartooth Mountains
Pryor Mountains
Clark Fork River
MONTANA
WYOMING
45°
110°
109°
108°
107°
44°

Pryor Gap. Later the Clark Fork captured its own drainage and left the Shoshone to flow through the gap by itself. Finally the Bighorn River captured the flow of the Shoshone and left the Pryor Gap without a river.

Rock Creek, a major tributary of the Clark Fork, is presently in a dramatic race for its life. Bear Creek, which drains the area just south and east of Rock Creek, is eroding its side of the divide more rapidly than is Rock Creek. The ultimate result will be the capture and diversion of Rock Creek into Bear Creek.

The Pryor Mountains are another major topographic feature in the survey area. They were formed by a small uplift and now stand independent of surrounding ranges. The Pryors are not nearly as steep sided as the Beartooths. The sides of the Pryors have a mantle of soil which supports vegatation in most places. The tops of the Pryors have open parks with excellent forage for deer, elk, and moose. The maximum elevation is Shriver Mountain (8,766 feet).

Pleistocene Chronology of the Clark Fork Area

There is evidence of four continental glaciations in the midwestern United States. From the oldest to the youngest, these are the Nebraskan, Kansan, Illinoan, and the Wisconsin. They are separated by the Aftonian, Yarmouth, and Sangamon Interglaciations. Evidence of pre-Wisconsin ice has not been recognized in Montana, but during the Wisconsin Glaciation there were six major advances postulated for eastern Montana (Lemke et al 1965: 21). None of these six advances affected southern Montana in terms of ice cover, but the glaciation of northern Montana blocked the courses of several rivers. Of the glacial lakes created by this blocking, Lake Musselshell and Lake Glendive extended into southeastern Montana. Glacial Lake Musselshell, on the Musselshell River, extended as far south as Roundup, Montana. Glacial Lake Glendive, which was formed by the blocking of the Yellowstone River, extended to Miles City, Montana.

During the period of continental ice in northern Montana, there were several advances of alpine glaciation in southeastern Montana. All of these alpine glaciations can be recognized in the moraines on the Beartooth Plateau or in moraines in the Clark Fork valley.

From oldest to youngest, the alpine glaciations have been designated as Bull Lake, Pinedale and Neoglaciation (Richmond 1965). The Bull Lake Glaciation is defined from the Bull Lake Till, which forms a series of broad, smoothly-sloping moraines at Bull Lake on the east flank of the Wind River Mountains, Wyoming (Blackwelder 1915). Extensive ice caps occurred in

the mountains of west-central Montana, the Salmon River, the Yellowstone-Beartooth Plateau, the Wind River Mountains, the White River Plateau, the San Juan Mountains, and the Aquarius Plateau during Bull Lake times (Richmond 1965: 221). Carbon 14 dates for Bull Lake are between 25, 000 and 37, 000 years ago (Richmond 1965: 221).

Following the Bull Lake Glaciation is a period of interglaciation of about 4, 000 years. After this interval, the Pinedale Glaciation started. The Pinedale Glaciation is defined from the Pinedale Till which forms a series of low moraines near the town of Pinedale, Wyoming, on the southwest corner of the Wind River Mountains (Blackwelder 1915). Moraines of Pinedale Glaciation are commonly smaller than those of Bull Lake. When Pinedale moraines are found at the mouths of canyons, as they are in the Clark Fork valley, they usually represent glaciers about ten to forty miles long (Richmond 1965: 224). There were two major advances of Pinedale Glaciation which were separated by a short interstade. Carbon 14 dates on Pinedale Glaciation are between 6, 000 and 25, 000 years ago. These dates vary with the altitude from which the sample was collected.

Little work has been done before on the post-Pleistocene period in the Clark Fork area. Ernst Antevs (1955) postulates a Neothermal Period for the last 10, 000 years in the western United States. The Neothermal is divided into the Anathermal, Altithermal and Medithermal. The Anathermal was a cool, moist period, the Altithermal a warm, dry period, and the Medithermal a period with climate similar to the conditions of today.

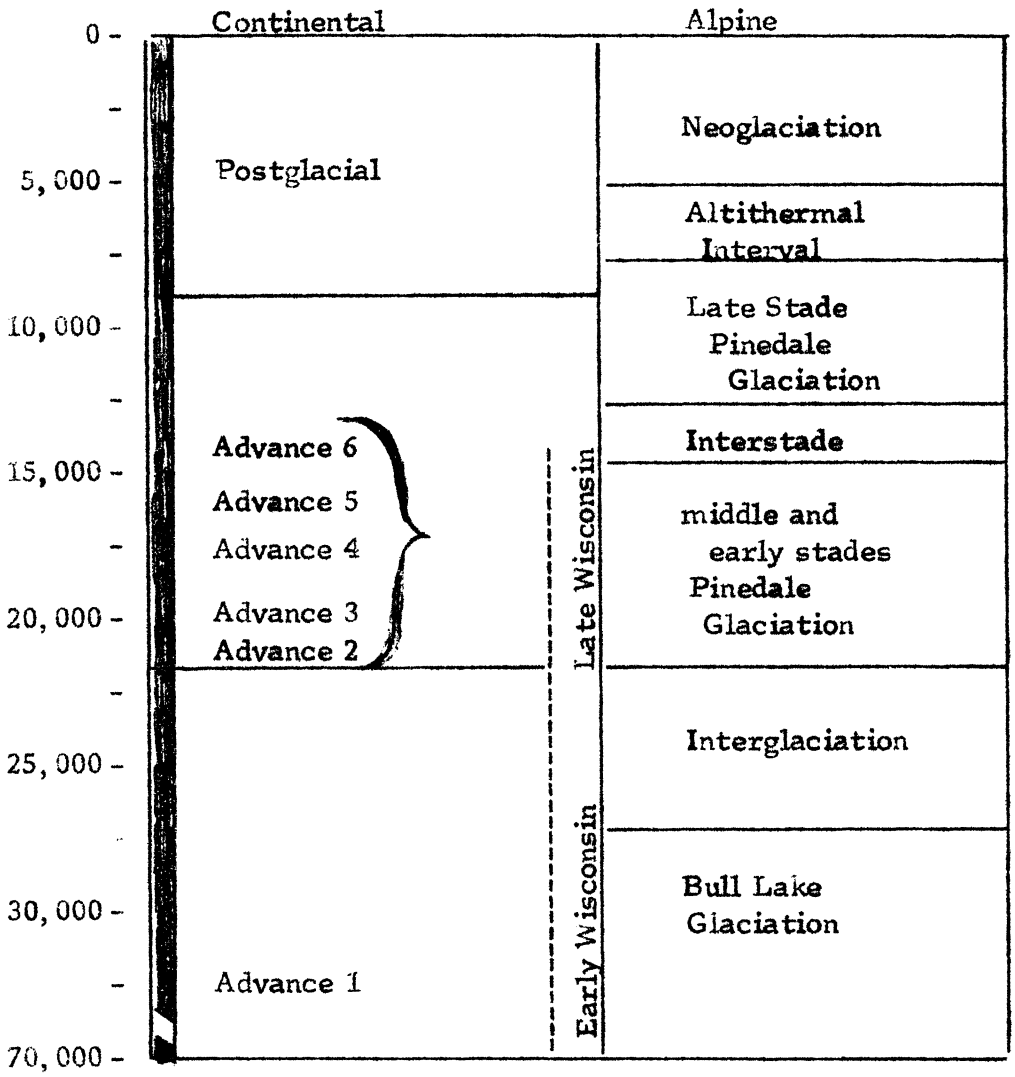


Table II. Correlation of Wisconsin Continental Glaciation with corresponding Alpine Glaciation.

Bryan and Gruhn have warned against use of these periods without careful consideration of all factors:

> ...a given span of Neothermal time cannot be projected from one area to another without direct independent evidence of the actual climatic conditions which existed in the second area at that time (1964: 307).

A period of Neoglaciation is recognized on the Beartooth Plateau and divided into the Temple Lake Stade and the Gannett Peak Stade. Moraines of Temple Lake are found at high elevations where they support a tundra vegatation. Carbon 14 dates for Temple Lake are around 2,500 to 1,000 years ago. Gannett Peak moraines are at high altitudes and usually upslope from those of Temple Lake. They support little vegetation. Some of these are thought to have had glaciers associated with them as recently as A.D. 1850 (Richmond 1965:226).

Vegetative Types in the Clark Fork Area

The plant cover of Carbon County, Montana, in which the majority of the survey was conducted, may be divided into six vegetative types. These types have been taken from a map on Montana vegetation (Helburn et al. 1962: 16) and are presented in Figure 3. The reader should note that the distribution of these vegetative types does not correspond exactly with the soil regions presented in Figure 4. For the most part, this occurs as a result of inadequate mapping.

Vegetation in the Clark Fork is affected by a number of environmental factors. The most important of these are altitude, soil and climate. Vegetative regions also reflect the type of animal communities they are able to support.

As one changes elevation, the changes in plant cover are very noticeable in the Clark Fork Area. The boundaries of these vegetation changes are not always located at the same altitude. As Daubenmire (1952) describes this for the Rocky Mountains:

> Although each zone reaches its best development within certain fairly definite limits of altitude, it characteristically sends long, pennant-shaped, and often discontinuous extensions down to considerably lower elevations along valleys, and on the other hand, except for the uppermost forest zones, each attains its greatest elevation along summits of dry ridges and the upper parts of south-facing slopes. Owing to the resultant interfingering of the zones, their general altitudinal relationships are usually reversed along the sides of ravines.

Forests and Alpine Grassland include a variety of trees: lodge pole

pine, white pine, larch, Douglas fir, ponderosa pine, Engelmann spruce, and Colorado Blue spruce. There is a heavy growth of smaller bushes including juniper, snowbush and mahogany bush.

Undifferentiated Grasslands are dominated by a fairly uniform group of grasses. Where these are not overgrazed, they include: wheat grass, blue gamma grass, blue bunch wheat grass, blue grass, needle and thread, sandburg blue grass and blue stem.

Foothill Grasslands are a transitional zone and support both grasses and sagebrush. There is usually a low amount of ground water in these areas. Grasses of low nutrient value, such as cheatgrass and squirrel tail, grow in this zone.

Eastern Montana Pine Forest and Savanna identify areas of scattered forest with open stands of ponderosa pine. There are many grass meadows among the trees of these areas. This zone supports most of the deer and elk in the Clark Fork Region.

Sagebrush and Saltbush are usually found in semi-arid regions. These areas supported large stands of grasses in the past, but extensive grazing seems to have opened the way for sagebrush. Along with the sagebrush and greasewood, yucca and several varieties of cactus are found in this area.

Undifferentiated Stream Bottoms consist of deciduous trees, including: cottonwoods, willows, and alders. Patches of wet meadows are mixed with the trees in the wider floodplains. There is enough ground water in the valley floor to support this type of vegetation through the dry, late summer.

Away from the river bottoms, the vegetation changes to short grasses.

Figure Three

Figure Three

Outline map of Carbon County, Montana, showing the distribution of vegetative types. The Clark Fork River follows the distribution of Undifferentiated Stream Bottoms.

a. Forests and Alpine Grasslands

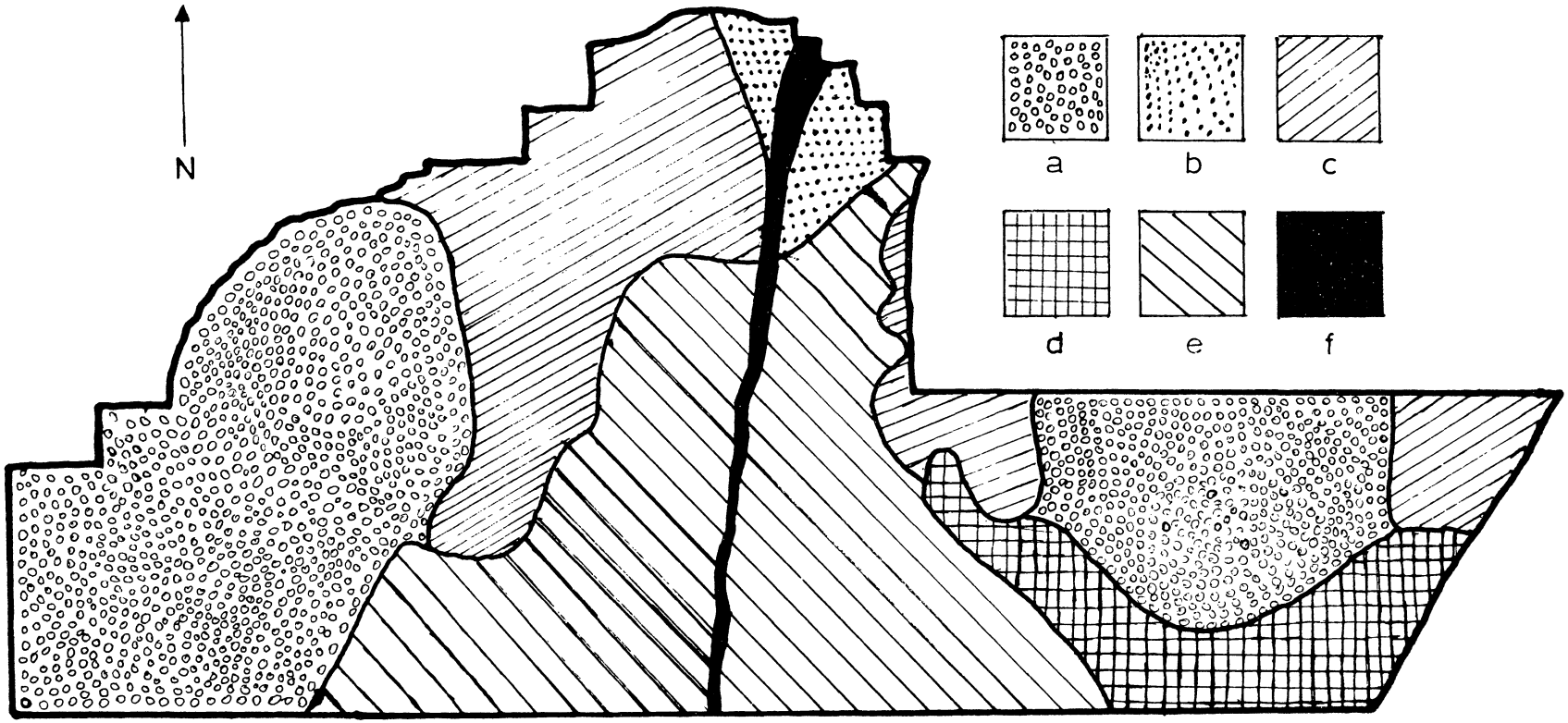
b. Undifferentiated Grasslands

c. Foothill Grasslands

d. Eastern Montana Pine Forest and Savanna

e. Sagebrush and Saltbush

f. Undifferentiated Stream Bottoms


N
a
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c
d
e
f

Soil Types in the Clark Fork Area

Soils are diagnostic of the environment in which they occur. This is an interesting fact to archaeologists for the following reason:

> The soils at an archaeological site, having formed under the environmental conditions prevailing at and since the time of occupation may be able to show significant differences between the ancient and modern environments at that place (Cornwall 1958:75).

So that these differences can be recognized, the archaeologist must know the distribution of modern soils of the area in which the sites are located.

Almost everywhere in the Clark Fork Drainage, soils form a mantle of varying thickness over the parent rocks, except where the surface is too steep, as is the case along the face of the Beartooth Mountains. The soil regions of the Clark Fork reflect environmental factors such as temperature, moisture, altitude, and vegetation.

A map is one way to show the distribution of soils. A map of the soil regions of Carbon County, Montana, can be found in Figure 4. This map is based on the soils distribution map in Soils of the Western United States (1964).

Immature Soils on Unconsolidated Upland Materials and Aeolian Sands have mainly Regosols and Lithosols in association. The physiographic conditions and parent materials on which these soils occur are greatly varied. Most of these soils have not had time to become highly developed.

Light-Colored Soils of the Arid Regions appear in the Clark Fork Drainage, even though the area has a higher precipitation and elevation than most

Figure Four

Figure Four:

Soil distribution of Carbon County, Montana. The Clark Fork River follows the area of Alluvial Soils.

a. Immature Soils on Unconsolidated Upland Materials and Aeolian Sands.

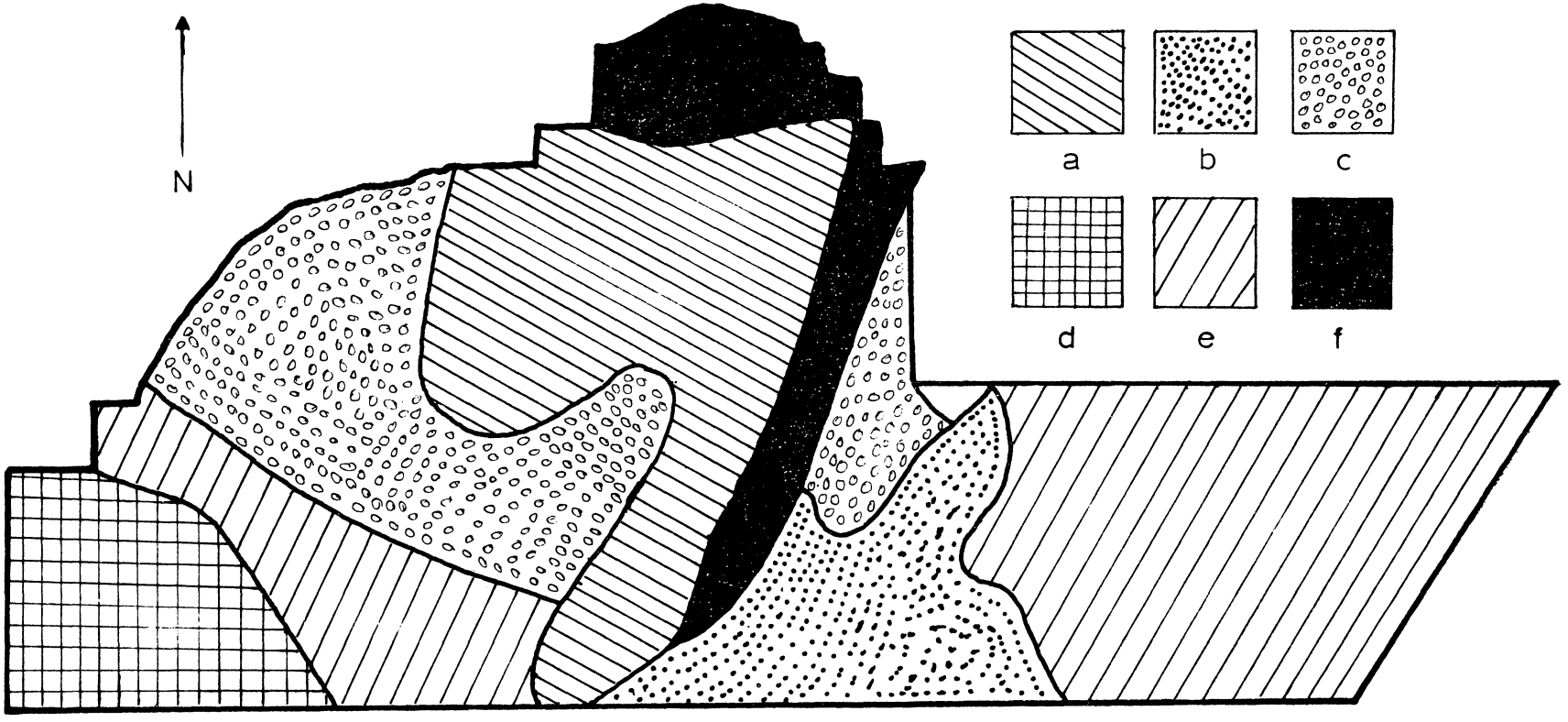
b. Light-Colored Soils of the Arid Regions

c. Dark-Colored Soils of the Semi-Arid Regions

d. Soils of the Cold, Nonforested Regions

e. Soils of Cool to Cold, Subhumid and Humid Forested Regions

f. Alluvial Soils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deserts. These soils are mainly an association of Sierozem, Lithosols, and Regosols.

Dark-Colored Soils of the Semi-Arid Regions are well to imperfectly drained and have dark, granular surface horizons with lower horizons of prismatic and blocky compound structure. The lower profile is usually a zone of calcium carbonate accumulation. Within the Clark Fork there are two sub-divisions of this soil group. One is mainly Chestnut with Lithosol and the other Chestnut, Lithosol, with some Alluvial soils.

Soils of the Cold, Nonforested Regions are located in areas above timberline. They are subjected to frost action during development and are frozen eight to ten months of the year. This soil region includes Alpine Turf, transitional Alpine Meadow, and Alpine Bog Soils.

Soils of Cool to Cold, Subhumid and Humid Forested Regions occur under forest vegetation and principally on foothill or mountainous topography. The parent materials are varied and include: loess, colluvium, alluvium, glacial fill, glacial outwash, igneous, metamorphic, and sedimentary residua. Within the Clark Fork, the major types in association are Gray Wooded and Brown Podzolic.

Alluvial Soils of recent deposition occupy the floodplains of streams and the floors of enclosed basins which might be flooded. The soils are developing from stream sediments, hence there is usually a graduation in the size of the particles deposited. The alluvial deposits in the Clark Fork flood plains are fine-grained, brown soils.

Animal Resources in the Clark Fork Area

Most of the hooved animals — bison, deer, antelope, elk, sheep, and goats — are known to travel on well-established trails. The Indians must have known these routes well and probably built snares, pens, or traps along them. Also, they could have waited along these trails for the game to come to them.

Antelope (Antilocarpa americana) The male antelope grows to a height of three and one-half feet at the shoulders and to a length of five feet. The average weight of a mature male is 130 pounds. Antelope live in the sagebrush flats and foothills of the Clark Fork Drainage.

Antelope were utilized by the Indians on the Northwestern Plains for meat, hide and horns. "Few people today realize that in old times the antelope in their domain were probably more abundant than the buffalo. They were found in vast numbers over all the plains, but because of their small size and inconspicuous coloring, they did not impress those who saw them as did the black herds of larger animals" (Grinnell 1923:I, 277).

The antelope is extremely curious; this trait enables the individual hunter to entice the animal close enough for a kill. Lowie writes about the stalking of antelope by the Shoshoni who dressed in antelope skins and headgear of antelope horns (1909: 185).

The Blackfoot surrounded antelope and drove them into narrow defiles and shot them with arrows and guns. The hides of antelope were prized for making fine clothing (Ewers 1958: 85).

They Cheyenne utilized the communal drive to capture antelope. The people of the village formed two diverging lines in the shape of a V, with a circle at its base. The shaman stood in the center of this circle, while the hunters drove the antelope down the V and into the circle. The people, waving blankets, surrounded them and formed a human corral. The antelope were then killed with clubs and sticks (Hoebel 1962:65).

They Cheyenne used variations of this technique, sometimes driving the antelope over a cliff or into a pit at the base of the V.

Bison (Bison bison) The male bison grows to a height of six feet at the shoulders and to a length of eleven feet. The average weight of a mature male is 2,000 pounds. The habitat of bison is grassland or open woods.

Bison are gregarious animals. They move in search of forage in herds of between fifty and three hundred animals. Bison have a keen sense of smell, but poor vision. This enables hunters to get very close to a herd by staying downwind and partially out of sight. When bison are frightened, they have a tendency to close ranks and stampede in a mass.

Montana is the center of bison drives (Malouf and Conner 1962: 40). The bison drive involves a technique of killing buffalo by driving them along a path between converging lines or piles of rocks toward a cliff. Near the drop-off, the bison would be made to stampede and would plunge headlong over the cliff to their death. Those who survived the fall would be quickly dispatched by waiting hunters.

The Plains Tribes, with the exception of the Shoshoni, used this technique

to kill bison. The Shoshoni, according to Lowie (1909: 185), were said to possess no knowledge of bison drives. With the advent of the horse, the bison drive became obsolete. It was easier for the individual hunter to ride alongside the bison and shoot an arrow into his vital parts. By hunting on horseback, the Indians could kill buffalo anywhere and anytime without a large force of men or the correct wind factors needed for a drive.

Elk (Cervus canadensis) The male elk or wapiti attains a length of ten feet and a height at the front shoulder of five feet. A bull elk can weigh as much as 750 pounds. Elk live in semi-open woodlands. They spend their summers in mountains and their winters in valleys.

Elk were probably killed by individual hunters, but since the elk is a herd animal, it is possible that surrounds might have been used. Unlike the antelope and the bison, the elk is a crafty animal and probably would be difficult to drive anywhere.

Elk have two ivory teeth which were prized by the Indians for decoration on clothing and necklaces. Denig (1961: 158) notes that, among the Crow, "The price of the elk teeth alone is 100 for a good horse or in money the value of $50."

Mountain Goat (Oreamnos americanus) The male goats grow to about five feet in length and to three feet in height and attain a weight of about 175 pounds. Goats live above the timberline on rocky mountain ridges. The mountain goat was probably not too widely sought for its meat or hide. Ewers (1958: 85) says that the Blackfoot "would lie in wait for mountain goats to

pass along their well-marked trails."

Mule Deer (Odocoileus hemionus) The male Mule Deer grows to a height of three and one-half feet at the front shoulder and a length of six and one-half feet. It can weigh up to 300 pounds. Mule Deer live in brushy areas and rocky uplands. They spend their summers at higher elevations. Deer, usually hunted by the single hunter, were captured in snares and pitfalls or by stalking, until the hunter could get close enough for a shot. The noiseless bow and arrow was preferred to the gun, for the hunter was able to take a second shot, if he missed his first one.

Mountain Sheep (Ovis canadensis) Mountain Sheep grow to a length of six feet and a height of over three feet. The male can weigh as much as 225 pounds. The habitat of Mountain Sheep is high alpine meadows. The Mountain Sheep or Bighorn Sheep were usually killed by the hunter who lay in wait along their trails. The Blackfoot "surrounded them and drove them into narrow defiles where they were shot with guns or arrows" (Ewers 1958: 84).

Whitetail Deer (Odocoileus virginianus) The male Whitetail Deer grows to a height of four feet at the front shoulder and attains a length of six feet. The average weight of a male is 250 pounds. Whitetail Deer live on the fringes of forests or in stands of second-growth timber. The Whitetail Deer is somewhat craftier than the Mule Deer and would have been harder to kill by stalking.

Moose (Alces alces) The male Moose attains a weight of as much as 1,500 pounds, a height at the front shoulder of seven feet, and a length of ten feet. Moose live in timbered areas with alpine swamps or lakes nearby.

There is little evidence that Moose were hunted by Indians.

Coyote (Canis latrans) Male coyotes grow to a length of fifty-four inches, and weigh as much as fifty pounds. They live in open sagebrush country. Coyotes were hunted mainly for their hides.

Wolves (Canis lupus) A male wolf can weigh as much as 100 pounds and grow to an overall length of six feet. Wolves live in upland woods and rolling sagebrush country. Ewers (1958: 85) says that wolves were captured in baited pits or deadfalls by the Blackfoot. A description of the pitfall used by the Cheyenne to capture wolves is found in Hoebel (1962: 66):

> The large gray wolf is taken in pitfalls... deep holes dug wider at the bottom than at the top so that the wolf cannot jump out. A pole with bait at the center is staked across the hole, which is roofed over with split reeds covered with earth and grass. As the wolf moves out on to the mat to seize the bait, the whole covering gives way beneath him. He may then be shot in his prison.

Wolves were sometimes eaten, but more often only the hide was used.

Fox (Vulpes fulva) The male fox can grow to a length of forty-two inches. Foxes live in dry wooded uplands. They were captured by the Cheyenne in deadfalls (Hoebel 1962: 67). Lowie (1909: 185) says that the Shoshoni snared them.

Black Bear (Euarctos americanus) Black Bears grow to a length of five and one-half feet and attain a height at the shoulder of three feet. They can be found to weigh as much as 350 pounds. Bears range from mountain forests to lowland brush country. They were used by the Indians for their meat, tallow, hides, and claws.

Grizzly Bears (Ursus horribilis) The ferocious Grizzly Bear can grow to a height of four feet at the shoulder and attain a length of eight feet. They usually weigh close to 500 pounds. The grizzly bear originally roamed the Plains and could certainly be called the king of his domain. Most Indians feared the bear, regarding it as a sacred animal with great supernatural as well as physical power.

Bobcat (Lynx rufus) Male Bobcats attain a length of forty inches. Bobcats range throughout the Clark Fork area. I was unable to find any ethnographic evidence as to how the Indians used them.

Mountain Lions (Felis concolor) The male Mountain Lion can grow as long as eight feet and weigh as much as 260 pounds. Mountain Lions live in alpine wooded areas and hilly uplands.

To the hunter, rodents and other small mammals have many advantages over larger game. They remain in restricted localities and do not require a long chase. Some species form large colonies and can be taken in considerable numbers, even warranting communal efforts to capture them. All of them reproduce rapidly. Many of them made large stores of seeds that could be robbed. Medsger (1939: 93) writes about the Indians' using pack rats' storage nests, "I found nearly every rat's nest pulled apart or turned over for the pine nuts." On the other hand, rodents do not supply much meat for the diet and most of them hibernate in the winter when food is needed most.

It should be mentioned that one probable reason for the hunting of small mammals was to obtain their pelts. "Beaver, marmot, ground

squirrel, otter, muskrat, coyote, wolf, fox, and other small game were hunted and snared chiefly for their pelts" (Teit 1930: 96). Certainly, capturing beaver, mink, and raccoons became important to the Indians after they were able to trade these pelts to the whites.

The following list contains the small mammals which could have been used by the Indians in the Clark Fork area. Most of the information has been drawn from a book by Henry Collins (1959) on American wildlife. The fact that the animals are present in the Clark Fork area is known by my own recognizance of them in the field.

Badger (Taxidea taxus) Badgers may have been used for their skins.

Beaver (Castor canadensis) Probably the most useful thing about beavers is that they build dams which conserve water for water fowl and fish.

Chipmunk (Eutamias minimus) The chipmunk is a small rodent which stores nuts, berries, and seeds for the winter.

Gopher (Thomomys bottae) The Northern Pocket Gopher lives at fairly high altitudes in the thin soil.

Marmot (Marmota flaviventris) The Yellow-Bellied Marmot lives in the rocky areas of the mountains.

Mink (Mustela vison) Mink emit a strong odor when frightened which might make them undesirable for food.

Mouse (Peromyscus maniculatus) The Deer Mouse reproduces several litters each year.

Muskrat (Ondatra zibethicus) Muskrats have a valuable pelt and are good to eat.

Porcupine (Erethizon dorsatum) Porcupines are easy to kill and very good to eat.

Prairie Dog (Cynomys ludovicianus) Prairie Dogs live in large communities; one of these prairie dog towns was said to be 250 miles long and 100 miles wide, with an estimated 400 million prairie dogs in it (Collins 1959:281).

Rabbit (Lepus americanus) Showshoe Rabbits have a highly variable population. "During one peak year in Ontario a density of 3400 individuals to a square mile was reached. At the 10-year low, however, there may be only 1 or 2 per square mile." (Collins 1959:275)

Rabbit (Sylvilagus floridanus) The Cottontail Rabbit is our most common rabbit.

Raccoon (Procyon lotor) Raccoons are numerous in the wooded areas along the Clark Fork River.

Rat (Neotoma cinerea) The Bushy-Tailed Wood Rat can be found at all levels of elevation in the Clark Fork Drainage.

Shrew (Sorex cinereus) Shrews are uncommon in the Clark Fork Valley.

Skunk (Spilogale putorius) Aside from the unpleasant odor of skunks, they are said to be very good eating.

Squirrel (Tamiasciurus hudsonicus) The Red Squirrel is the most commonly seen mammal in the northwest.

Weasel (Mustela frenata) The weasel has a white tail in the winter which the Indians used for costume decoration.

Although many species of water birds were plentiful in the Clark Fork area, most of the Plains Tribes would not eat them. Certainly though, some of the Plains Tribes probably ate the flesh of water fowl or collected their eggs when other more desirable meat was not available.

Ducks (Anatinae sp) The Clark Fork is near the Central Flyway, hence ducks may have been abundant during the fall migration.

Eagles (Haliaeetus leucocephalus) and (Aquila chrysaetos) All of the Plains Tribes valued the eagles for their feathers. Eagle catching was a dangerous feat, performed only by men who claimed to have secret power. The Blackfoot caught eagles in the following manner:

> On the top of a hill a warrior dug a pit about four feet deep, large enough for him to hide in. He roofed the pit with poles, twigs, and grass. After he placed a large piece of meat or a dead rabbit or other small mammal on the roof for bait, he entered the pit and rearranged the cover to conceal himself from view. There he waited until an eagle swooped down to take the meat. Then he quickly reached through a crevice in the roof, grasped the eagle by both feet, pulled it into the pit, and wrung its neck. (Ewers 1958: 85)

Geese (Anserinae sp.) In 1806, when Captain Clark was on the return leg of his journey through the area, he noted the following, "Great numbers of geese, too, which raise their young on this river Yellowstone have passed the camp." (Coues 1965: 1145)

Prairie Chicken (Tympanuchus cupido)

Sage Hen (Centrocercus urophasianus) The Shoshoni drove Sage Hens into enclosures or trapped them with nooses. (Lowie 1909: 185)

Plains Tribes were not great fish eaters. Most of the Blackfoot regarded fish as unclean (Ewers 1958: 86), but the Cheyenne caught a few in weirs built across streams. In writing about the Big Horn River in 1805, Francis Larocque noted, "A Big Belly has done fishing here and in a little while he has taken fourteen medium catfish" (Phillips 1934: 19). It is possible that fish were eaten only when the Indians could not obtain other game. The following list is of the fishes that would have been available to their diet in the Clark Fork area:

Catfish (Ictaluridae sp.)

Grayling (Thymallus arcticus)

Trout (Salmonidae sp.)

Suckers (Catostomidae sp.)

Whitefish (Coregonidae sp.)

Edible Plants in the Clark Fork Area

Not many years ago, wild plants played an important role in the food supply of explorers, trappers and settlers. The Lewis and Clark party used wild plants several times to supplement their normal diet. Likewise, Indians must have relied on plants to carry them from times of animal scarcity to periods of animal abundance. A vast lore of plant knowledge must have existed. The following quote regarding the Cheyenne illustrates this:

> Of the wild plants gathered by the women for their family larder, some sixteen varieties are fruits, eight or ten are roots, and a dozen to fifteen are vegetable stalks or buds. Many of them add variety to boiled meat dishes or nourishing quality to soup. (Hoebel 1962:60)

The following list was compiled as the plants were recognized in the field. Most of them could have been used as a food source and this is why I include them. The list would grow considerably if one added medicinal plants or plants from which dye was extracted.

American Bistort (Polygonum bistortoides) The roots are good when roasted over coals, having a somewhat nutty flavor. They can also be eaten raw or boiled with meat.

American Vetch (Vicia americana) The tender seeds and stems of vetches can be eaten raw.

Arrowhead (Sagittaria cuneata) The nutritious tubers at the end of the roots contain starch and are edible raw or roasted. Raw they taste like potato; when roasted they are like chestnuts. "The tuberous roots of

the Arrowhead were much used for food by the Indians. They were boiled like potatoes, or sometimes roasted in hot ashes" (Medsger 1939: 170).

Arrowleaf Balsamroot (Balsamorhiza sagittata) The seeds, roots and stems can be eaten raw or cooked.

Bitterroot (Lewisia rediviva) The state flower of Montana was collected by the Indians in the early spring. The roots contain more starch then as it hadn't been utilized for the development of the flower. The outer shell peels off the root leaving a white fleshy core. This core can be boiled, baked, or powdered into meal.

Blazingstar (Mentzelia laevicaulis) The small oily seeds can be dried and ground into flour.

Blueflax (Linum lewisii) The twisted stem of this plant forms an excellent fiber and could be used in netting or ropes. The stems of the plant are also edible.

Buffalo Berry (Shepherdia argentea) The berries are edible raw.

Bulrush (Scirpus acutus) The stems are pithy and do not decay for several years. For this reason, they would make excellent weaving material. The stems and roots are both edible and actually quite tasty.

Bunchberry (Cornus canadensis) The berries are edible and can be eaten raw.

Burdock (Arctium minus) The young leaves can be eaten in salads, the stems eaten raw or cooked after they are peeled. The roots are also good to eat after boiling.

Cactus (Opuntia polyacantha) The fruits of many varieties of cactus are delicious if eaten raw and even taste like candy. Hoebel (1962: 60) says that the Cheyenne used cactus in the following manner:

> The fruit of the prickly pear cactus is collected in parfleche bags, worked over with twig brooms to remove the spines, and finally picked clean by the women, who wear deerskin thimbles especially made for the purpose. The fruit is then split, and seeds removed and the remainder sun dried. The product is added to meat stew and is also used as a soup thickener.

Camas (Camassia quamash) The bulb of this plant is starchy and nutritious. It can be eaten anytime, but is best in the autumn. The boiled bulbs are much like potato, but not quite as mealy. They can be baked, roasted, dried, boiled or eaten raw. Camas was probably one of the most important plants in the Indians' diet in the Rocky Mountains.

Chokecherry (Prunus melanocarpa) Chokecherries pucker the mouth if eaten before they are ripe, but were eaten from the tree or mixed and dried for storage by the Indians. Hoebel (1962: 60) says that the Cheyenne prepare their chokecherries in the following manner:

> Many varieties of berries are collected by the women, but most common is the chokecherry. The whole berry, including the pit, is pulped on stone mortars and made into sun-dried cakes. Mixed with dried, pounded meats, it produces the best pemmican.

Cocklebur (Xanthium strumarium) The seeds within the burs are edible raw or can be pounded into meal.

Coneflower (Ratibida columnifera) The leaves of this plant can be eaten if boiled or steeped for tea.

Cow Parsnip (Heracleum lanatum) The sweet, succulent, young stems of this plant can be eaten raw or cooked.

Common Cattail (Typha latifolia) The stems of cattail contain nearly pure starch. The roots can be eaten raw or cooked over coals. Large roots can be ground into meal, which is really quite tasty. The fuzz of seeding cattails can be used as an excellent tinder for fire starting.

Curlydock (Rumex crispus) The leaves and stems can be eaten raw in salad fashion or boiled with meat. Large quantities of the green act as a cathartic.

Currants (Ribes sp), Golden Currant (Ribes aureum), Sticky Currant (Ribes viscosissimum), Squaw Currant (Ribes cereum), Western Black Currant (Ribes petiolare) Currants are an important berry because of their wide distribution. "Many of our wild species are excellent to eat.... Indians added them to their pemican, a concentrated food produced by mixing dried fruit with rendered fat. The mixture was poured into bags or molded into loaves" (Craighead, Craighead, and Davis 1963:78).

Desert Parsley (Lomatium dissectum) This plant can be eaten raw, baked, or boiled. Some species taste like parsnips, while others have a nutty flavor.

Dogtooth Violet (Erythronium grandiflorum) The bulb can be boiled or dried and used in meal. The leaves can be used as a green and eaten raw or boiled with meat.

Elderberry (Sambucus pubens) Elderberries are very nutritious, having a high fat, protein, and carbohydrate content.

Elephanthead (Pedicularis groenlandica) The yellow roots of this plant taste something like carrots and can be eaten raw or cooked. The leaves can be brewed for tea.

Elk Thistle (Cirsium foliosum) The fleshy roots and stems were eaten by the Indians. Hoebel (1962:60) writes about the Cheyenne eating thistle, "Thistle stalks are peeled and eaten with great pleasure. Cheyennes compare it with the banana as a delicacy."

Engelmann Aster (Aster engelmannii) The leaves of this plant are edible when boiled with meat.

Fairybells (Disporum trachycarpum) The berries of this plant have a sweet taste and can be eaten raw.

Flowered Lettuce (Lactuca pulchella) A form of gum can be obtained by chewing the roots of this plant. The leaves and stems can be used as greens.

Gayfeather (Liatris puntata) The corm of this plant can be boiled and eaten.

Green Gentian (Frasera speciosa) The fleshy root of this plant is edible.

Gromwell (Lithospermum incisum) The roots of this plant are good to eat, after cooking.

Groundcherry (Physalis subglabrata) Groundcherries are of the same species as the common Chinese Lanterns grown in domestic gardens. They are sweet and edible raw.

Gumweed (Grindelia squarrosa) The leaves can be steeped for tea or eaten raw.

Hawkweed (Hieracium albertinum) "The milky juice was coagulated and used as chewing gum by the Indians." (Craighead, Craighead and Davis 1963:221)

Horsemint (Monarda menthaefolia) The leaves of this plant can be used in making tea or for flavoring in boiling meat.

Huckleberry (Vaccinium ovalifolium) Huckleberries are probably the most sought-after wild berry of all. They are sweet and delicious.

Indian Turnip (Psoralea lunceolata) Hoebel (1962:60) describes the preparation of turnips by the Cheyenne:

> Most conspicuous of the tubers used is the wellknown Indian turnip, also known by the French name pomme blanche. It is dug in the spring when still edible, and sometimes eaten raw, but more commonly boiled. After cutting it into slices, the Cheyenne women dehydrate it by sun drying for year-long preservation. Dried slices are pulverized and used as a thickening for soup. It is the major source of starch.

Juniper (Juniperus siberica) The berries can be eaten raw, or boiled and used as a flavoring agent.

Kinnikinnick (Arctostaphylos uva-ursi) The berries are edible and remain on the plant in the winter. They are sweet after boiling. The leaves were dried and used as a part of the tobacco smoked by Indians.

Leopard Lily (Fritillaria atropurpurea) The starchy corms are edible and best when boiled.

Meadow Salsify (Tragopogon pratensis) The juice of this plant can be coagulated and chewed. This was an Indian remedy for indigestion. (Craighead, Craighead and Davis 1963:233)

Mint (Mentha arvensis) Mint can be used as a flavoring agent; or, by lightly steeping the leaves, one can make a delicious beverage.

Mountain Ash (Sorbus scopulina) The berries stay on the tree into the winter

and are edible raw. They have a somewhat bitter flavor.

Mountain Sorrel (Oxyria digyna) This plant can be eaten as a pot herb or used in salads.

Nodding Onion (Allium cernum) The tuber can be eaten raw or mixed with meat when cooking.

Oregon Grape (Mahonia repens) The ripe berries can be eaten raw, but they are quite sour.

Pine (Pinus sp.) The small seeds found in the cone are highly nutritious and can be eaten raw or roasted.

Pink Milkweed (Asclepias speciosa) Young shoots, pods, leaves and flowers can be eaten and taste something like asparagus. E. Adamson Hoebel (1962:60) says that they Cheyenne used milkweed in the following manner: "Milkweed buds, collected just before the flower opens, are boiled in soup or stew. The "milk" of the plant is evaporated to make a favorite chewing gun."

Red-Osier Dogwood (Cornus sericea) The fruit is edible and can be eaten raw. The stem wood is very strong and was used by Indians to make bows. (Craighead, Craighead and David: 1963: 134) The bark of the Red Dogwood was used in a mixture with Kinnikinnick to make smoking material.

Red Raspberry (Rubus idaeus) Raspberries are sweet and tasty.

Red Twinberry (Lonicera utahensis) Twinberries are edible, but not good enough to be widely sought.

River Hawthorn (Crataegus rivularsis) The fruit of the Hawthorn is very high in sugar content, but low in fats and protein. Hawthorn fruit hangs on

in the winter and is an excellent food source during the frozen months.

Rose Berries (Rosa woodsii) Rose hips adhere to the plant during cold months and can be eaten raw or boiled when other food is unavailable.

Rushpink (Lygodesmia grandiflora) If boiled with meat, the leaves of this plant can be eaten.

Sego Lily (Calochortus nuttallii) This lily is the state flower of Utah, because it was part of the Mormons' diet during their first years in that state. The boiled bulb tastes like potato. It can also be ground for meal.

Serviceberry (Amelanchier alnifolia) These berries are somewhat mealy, but they would make fine pemmican.

Silverweed (Potentilla anseina) The long narrow roots of this plant can be eaten raw and taste like parsnips. When boiled, they taste like sweet potatoes and are highly nutritious.

Snowberry (Symphorecarpos racemosus) This plant has edible berries, although they are not too tasty. "Indians made a decotion for colds by pounding and steeping the roots" (Sweet 1962:31).

Springbeauty (Claytonia lanceolata) Raw, the roots and stems of this plant taste like radish. When boiled, they have a texture and flavor similar to baked potatoes.

Strawberry (Fragaria vesca) Wild strawberries possess a flavor and sweetness not found in the cultivated varieties. The leaves can be brewed into a tea-like beverage.

Sunflower (Helianthus annuus) This plant is the state flower of Kansas.

Its seeds can be eaten raw or roasted.

Thimbleberry (Rubus parviflorus) Thimbleberries have a somewhat acrid taste, but are easily found and picked.

Twisted Stalk (Streptopus amplexifolius) The berries can be eaten raw.

Watercress (Rorippa nasturtium-aquaticum) The leaves and stems of this plant can be eaten in salads.

Waterleaf (Hydrophyllum capitatum) In the spring, the young shoots of this plant can be cooked and eaten.

White Bog Orchid (Habenaria dilatata) The radish-like tubers can be gathered and eaten raw or boiled.

White Wyethia (Wyethia helianthoides) The roots and leaves are edible after boiling.

Wild Hyacinth (Brodiaea douglasii) The corm of this plant can be gathered in considerable quantities and is perhaps the tastiest of all the edible bulbs. It has a sweet, nutlike flavor when boiled.

Wild Plum (Prunus americana) The fruit is edible raw.

Wyeth Biscuitroot (Lomatium ambiguum) Biscuitroot has a thick, fleshy root which probably served as an important source of food to the Indians. It can be eaten raw or ground into meal.

Yampa (Perideridia gairdneri) The small sweet potato-shaped tubers are an excellent food source. Eaten raw, they taste like parsnips.

Yellow Evening Primrose (Oenothera rydbergii) The seeds can be eaten and the roots are especially tasty and nutritious when boiled.

Yellow Fritillary (Fritillaria pudica) The starchy bulb is edible raw or cooked. Raw, it tastes like potato, and cooked it has a flavor similar to rice.

Yellow Monkeyflower (Mimulus guttatus) The leaves of this plant can be eaten fresh like lettuce, although they are slightly bitter.

Yellow Pondlily (Nuphar polysepalum) The large seeds of this plant can be popped and eaten like popcorn.

INDIAN TRIBES IN THE CLARK FORK AREA

A short discussion of the Indian tribes known to have inhabited or visited the Clark Fork area is important to this thesis. Since the distribution of Indian tribes in the area is known, we can project this information to the archaeological sites. One of the earliest groups to enter Eastern Montana was the Crow.

Presumably the proto-Hidatsa-Crow group separated early from a block of Siouans in the Minnesota-Iowa area (Hewes 1948: 50). They moved into North Dakota and South Dakota where they met the Mandan and the Arikara on the Missouri River (Malouf 1967: 6). Here they lived in earth lodges, made pottery and grew corn. The Hidatsa stayed in North Dakota while the Crow moved farther west into the Yellowstone River country (Malouf 1967:6; Hewes 1948: 51). On the Yellowstone they continued some maize horticulture, but increasingly became oriented toward bison hunting and nomadism. Their movement into the Yellowstone Drainage is thought to have been in the late sixteenth or early seventeenth century (Hewes 1948: 51).

Some time after their arrival on the Yellowstone, the Crow split into the Mountain Crow and the River Crow. The date of this separation is not known, but it occurred before whites entered the area (Malouf 1967: 7). Not long after the Crow had established their territory on the Yellowstone, they had to reckon with the expanding Shoshoni-Commanche groups.

The proto-Shoshoni-Commanche were south and west of the Wind River

Mountains prior to 1450 to 1500 (Shimkin 1939). Before 1400, the Shoshoni-Commanche may have lived still farther south and west in what is now Nevada and Utah (Hewes 1948: 54; Malouf 1967: 13). After 1500, the Shoshoni- Commanche entered the Wind River, Wyoming, area and by 1690 to 1700 they had obtained the horse via the inter-montana trail from the New Mexico Spanish colony (Hewes 1948: 54). With the horse, the Commanche spread north and east onto the Plains and the Shoshoni ranged north as far as Canada.

At one time, the Shoshoni controlled a large portion of Southeastern Montana. According to Teit (1930: 304-5), the Flathead knew no other neighbors east of the Rockies than the Shoshoni.

> ...Shoshonean tribes occupied the Upper Yellowstone country, including the National Park, and they are said to have extended east to the Bighorn Mountains or beyond. To the south, both east and west of the Rockies the Flathead knew no tribes that were not branches of the 'Snake'. Most of these people depended chiefly on hunting buffalo, elk, and mountain sheep. Further north Shoshonean bands occupied the country around Livingston, Lewistown, and Denton. How far east and down the Yellowstone they extended is not known; but they are thought to have at one time held the country around Billings, and most, if not all, of the country where the Crow Indians now have a reservation. Some think they even stretched east almost to the present Cheyenne Reserve.

After 1750 to 1780, the Shoshoni were driven west of the Rockies, mainly by the Blackfoot and partly by the Crow (Hewes 1948: 55).

According to Mooney (1898: 156-7), the Kiowa were near the headwaters of the Yellowstone and Missouri Rivers before 1700. This would have placed them close to the Shoshoni and west of the Crow (Hewes 1948: 55).

Keim obtained the Kiowa migration tradition in 1868, twenty-five

> years earlier than Mooney. He was told that the old home of the Kiowas was in the mountains, where they had the Flatheads for neighbors. They left the mountains because of wars and migrated into the plains near the upper Yellowstone... (Hyde 1959: 138).

Most authors place the Kiowa in or near central Wyoming about 1735 (Hewes 1948: 55; Malouf 1967: 15). The Crow-Kiowa friendship may date from 1765 (Hewes 1948: 55).

The Blackfoot tribe consisted of three major bands: the Piegan, Northern Blackfoot, and the Blood. The Blackfoot were living in the Eagle Hills of Saskatchewan in the 1600's (Malouf 1967: 8). Restless eastern neighbors forced the Blackfoot to move southwest where they met opposition from the Shoshoni, Kutenai, and the Flathead. By 1800, though, the Blackfoot had wrested the entire territory east of the Rockies and north of the Yellowstone River from the Shoshoni (Hewes 1948: 53). Probably a large part of the reason the Blackfoot could take over Shoshoni lands was that they were receiving guns from the Cree by 1730, and they were the first tribe in the area to have the gun and the horse together. A second reason the Shoshoni were driven out of southeastern Montana was that the Crow were also fighting to gain territory on the Yellowstone. Third, the fact that the Shoshoni numbers were decimated by smallpox would have helped both the Crow and the Blackfoot (Stearn and Stearn 1945: 132).

The Atsina are closely related to the Arapaho and less so to the Cheyenne. Originally the Atsina and the Arapaho lived together in Minnesota and then moved westward into North Dakota and South Dakota. They divided

fairly late, with the Arapaho going south and the Atsina moving into Montana. The Atsina allied quite closely with the Blackfoot and early trappers often confused the two groups.

> The Atsina were also friendly with the Crow.
>
> > The Atsenas, usually friendly with the River Crows, had the custom of coming south with all their people on visits, and in the late summer of 1805, Larocque reported that a big camp of Atsenas was on the Bighorn. One suspects that the Atsenas were trading British goods, including some guns, to the River Crows and that they had helped drive the Snakes out of the Yellowstone and Bighorn country prior to 1790 (Hyde 1959: 178-9).

The Cheyenne are known to have been in central Minnesota in the seventeenth century (Hewes 1948: 52). Between 1700 and 1750, the lived on the Sheyenne River in North Dakota (Strong 1940: 339). During the next fifty years, they were forced west by the Dakota to the Missouri River. Their next home was the Black Hills in South Dakota, and by 1830 some had spread north and west into Montana and some had gone south into Oklahoma. The Cheyenne caused little trouble in the Clark Fork area, because the Crow had already claimed the land and were obtaining help from white men to retain it. The Indians who were bothersome in the Clark Fork in historic times were usually the Blackfoot and the Atsina.

> The hostile Indians, the Sioux, Cheyennes and Arapahos were seldom troublesome west of Pryor's Creek. The hostilities in that part of the country crossed by the Bozeman Trail were carried on by the Blackfoot Indians (Hebard and Brininstool 1922: 235).

HISTORICAL SKETCH OF THE CLARK FORK AREA

The first white person to enter the Yellowstone River Valley was Francis Antoine Larocque, a trapper and trader for the Northwest Fur Company, who in 1805 made contact with the Crow Indians. His journey started at River Fort de la Bosse, a Northwest Fur Company fort on the Assiniboine River in Canada. He entered the United States in the present state of North Dakota and moved south to the Yellowstone River, trying to establish trading relationships with the Indians he encountered. On September 10, 1805, Larocque camped on an island about ten miles east of the mouth of the Clark Fork River. From this point he started his return trip to Canada (Hazlitt 1962).

The Lewis and Clark party, on their return trip from the Pacific in 1806, divided their forces near the present site of Missoula, Montana. Captain Lewis, with nine men and several Indian guides, headed northeast up the Blackfoot River valley and over the Continental Divide to the Missouri River; they then followed that river downstream.

Captain Clark, with the remaining men and guides, went south up the Bitterroot River valley and then southeastward until they reached the Beaverhead River near Armstead, Montana. Clark's party then proceeded down the Beaverhead and Jefferson Rivers to Three Forks. At this point, the party again divided and a group of men went down the Missouri River to meet Captain Lewis. Clark and the remaining thirteen persons in his party traveled over

what is now Bozeman Pass and down the Yellowstone River to its junction with the Missouri River. The trip down the Yellowstone is that which is of interest to this thesis.

On the Yellowstone River, near the present town of Columbus, Montana, Clark decided to make use of the current in the river. Some of the party descended the river in dugout canoes, while the remaining members traveled overland with the horses. While they were camped to make canoes, on the night of July 20, 1806, twenty-four of their horses were stolen by Indians. This left twenty-six horses which Sergeant Pryor and two men took overland, while Clark and a party of nine set out in the canoes. The following quotation is taken from Elliot Coues' (1965: 1146) version of the trip:

> Thursday, July 24, 1806. At a distance of a mile from camp, the river passes under a high bluff for about 23 (?) miles, when the bottoms widen on both sides. At the distance of 29 (?) miles, a river falls in from the south. This is the river supposed to be the Bighorn; but afterward, when the Bighorn was found, the name of Clark's Fork was given to this stream. It is a bold river, 150 yards wide at the entrance, but a short distance above is contracted to 100 yards. The water is of a light muddy color and much colder than that of the Yellowstone; its general course is south and east of the Rocky Mountains.

Clark's canoes began to leak near the mouth of the Clark Fork and they decided to stop on an island to dry their boats. Clark noted that there was a pole lodge standing on the island:

> In the center is a large Indian lodge, which seems to have been built last summer. It is in the form of a cone, 60 feet in diameter at the base, composed of 20 poles, each 45 feet long and 2½ in circumference, and the whole structure covered with brush. The interior was curiously ornamented. On the tops of the poles were feathers of eagles, and circular pieces of wood, with sticks across them in the form of a girdle; from the center was suspended a stuffed buffalo skin; on the

> side fronting the door was hung a cedar-bush; on one side of the lodge, a buffalo's head; on the other, several pieces of wood stuck in the ground. From its whole appearance, it was more like a lodge for holding councils than an ordinary dwelling-house (Coues 1965: 1148).

In August of 1806, the Lewis and Clark party met two trappers, Dixon and Hancock, on the Missouri River. They were on their way to the Yellowstone River to trap beaver. These two trappers convinced John Colter, a member of the Lewis and Clark party, to return with them to the Yellowstone and, on August 17, 1806, Dixon, Hancock, and Colter set out by canoe.

Colter and his partners are believed to have spent the winter of 1806 in the canyon of the Clark Fork River. "They had constructed a combination lean-to and cabin by erecting two walls against the side of a cliff so as to take advantage of the recess in the rock" (Harris 1952: 54).

In the spring of 1807, Colter left his companions and started down the river with his furs. At the same time, Manuel Lisa was bringing a trapping party into Montana. Lisa and his party met Colter and again Colter was convinced to return to trap beaver.

> They left the Missouri at the mouth of the Yellowstone, turning up the latter stream to its confluence with the Bighorn, where, on the wooded point between the two rivers just above their conjunction, temporary shelters were erected, and the construction of Fort Raymond begun" (Oglesby 1963: 54).

Manuel Lisa and his trappers lived in the Yellowstone River country for the next sixteen years, trading with the friendly Crow Indians, but raids by Gros Ventre and Blackfoot Indians finally led to the demise of the Missouri Fur Company. Michael Immel and Robert Jones and their party

were trapping for the Missouri Company in the spring of 1823 when the entire party was ambushed and killed by Blackfoot Indians (Oglesby 1963: 187).

The summer of 1823 found young Jim Bridger in the Yellowstone River country. At the tender age of eighteen, Bridger had joined William Ashley's trappers and, under the guidance of Andrew Henry, had moved in to trap furs. For the next twenty years Bridger was connected with trapping and was in and out of the Clark Fork area, accompanied by such individuals as Hugh Glass, Kit Carson, Jebediah Smith, Thomas Fitzpatrick and many more.

Osborne Russell, who trapped the Clark Fork region from 1834 to 1843, wrote in his journal about several interesting experiences with Indians. In September of 1836, two trappers in the same group as Osborne Russell were attacked by Blackfoot Indians at the junction of Rock Creek and the Clark Fork River. A party of sixty Blackfoot surrounded the two trappers while they were looking in the brushy stream banks for a place to set their traps. One of the trappers was killed and the other escaped unhurt. Shortly after this mishap, Russell and some other trappers moved up Rock Creek to a camp near the mountains. In this camp, two bands of Crow visited them; the first of these bands had forty-nine members and the second 110 warriors. Both groups were enroute to steal horses from the Blackfoot, who were said to be camped near the three forks of the Missouri River (Haines 1955: 50).

In the fall of 1860 and the spring of 1861, the Stuart brothers, James and Granville, found gold while prospecting in what is now Gold Creek, Montana.

Writing to their brother, Thomas, of their lucrative find, they urged him to come to Montana and to bring a party of miners with him. John Bozeman was a member of that party which arrived in 1862. Bozeman became interested in shortening the distance from the United States to the mining communities of Virginia City and Bannack.

> In 1864 Bozeman brought back with him a large train from the Missouri, his line of travel being between the Black Hills and the Big Horn Mountains, his cherished road. Jim Bridger also was taking a train through a new way he had found possible on the west side of the Big Horn Mountains and down the Clark's Fork. Bridger had declared that Bozeman's proposed road east of the mountains was an impracticable route. Over the rival road on the west side of the Big Horn Mountains, Bridger, with several weeks' start, finally reached the Yellowstone ahead of Bozeman (Hebard and Brininstool 1922:219).

Bridger did not stay in the lead to the finish, for Bozeman was declared the winner by a few hours at Virginia City. The point of interest for us is that, after this race, the fastest route into the gold fields skirted the main Clark Fork valley.

In a treaty drawn up at Fort Laramie on May 7, 1868, the Crow Indians relinquished all their lands and accepted a permanent reservation extending westward from the one hundred and seventh meridian to about Yellowstone Park. The Yellowstone River formed the northern and western limits and the Wyoming line the southern.

During the government's campaign against the Sioux and Cheyenne Indians in 1876, Lieutenant James H. Bradley kept a diary of the movements of the Montana Column. The Column, under the direction of Colonel Gibbon, left Fort Shaw with orders to move south and east in such a manner as to deter

any escape of the Indians to the west. The Column marched down the Yellowstone River, and Bradley's account of the excursion gives an excellent commentary on the landscape and peoples they met (Bradley 1961).

Before the Montana Column could reach the Little Bighorn River, General George Custer and some 270 men of the Seventh Calvary had met their death at the hands of Sitting Bull and his warriors in a battle which would not easily be forgotten.

The dust of the Battle of the Little Bighorn had scarcely settled when Chief Joseph and the Nez Perce Indians, who had been forced from their reservation by white aggression, made their historic trek across Montana. The Nez Perce came into Montana via Lolo Pass, went through the Bitterroot Valley and over to the Big Hole. At the Big Hole, Colonel John Gibbon caught the Indians and the first white killed in the battle which ensued was Lieutenant James H. Bradley.

From the Big Hole, the Nez Perce went into Yellowstone Park and out across the Beartooth Plateau, down into the Clark Fork Valley, and north toward Canada. They were finally caught and forced to surrender in a battle in the Bear Paw Mountains of Montana.

Red Lodge, Montana, was started as a post office in 1886. It is said that the Crow Indians living in the area used a red clay paint on their tipis. Red Lodge is the county seat of Carbon County and the largest town in the county.

In 1889, the Northern Pacific Railroad had a spur line to Red Lodge which was used to haul coal. Coal mining was the major industry in Carbon

County in the early 1900's, but most of the once-booming communities are now abandoned.

In addition to coal, limestone, sulphur, plaster of paris, gold, silver, and copper have been mined successfully in Carbon County. There are also a number of profitable oil fields in the county.

The raising of alfalfa, timothy and clover had been the most profitable farm enterprise of Carbon County for many years. The soil and climate are well suited to the growth of hay. Oats, barley, wheat and sugar beets are also profitable crops.

Ranchers have started raising large herds of beef in the Clark Fork area. They feed the cattle hay in the winter and graze them on United States Forest Range during the summer.

The recreational potential of Carbon County has been only partially developed. The fishing in the streams and lakes is excellent. Big game hunting, too, is good. The Beartooth Mountains embrace scenic beauties which are a constant attraction to the tourist.

ARCHAEOLOGICAL SITES IN THE CLARK FORK AREA

Introduction

We found fifty-one sites during the course of the survey. Forty-one of these sites are located in Carbon County, Montana, five are in Bighorn County, Montana, and five are in Park County, Wyoming. Fifteen of the sites had previously been recorded by the Billings Archaeological Society. Several of these had been recorded by the Society but had not yet been visited. We visited each of the sites, made observations, and photographed them.

We assigned Smithsonian River Basin Survey numbers to each of the sites. These numbers are trinomial with 24 indicating Montana in the alphabetical order of the states and 48 signifying Wyoming. CB, BH, and PA are abbreviations for Carbon, Bighorn, and Park Counties. The third number is the number of the sites in the order that they were found.

In this thesis, the sites are divided into Tipi-Ring Sites, Occupation Sites, Cave Sites, Pictograph and Petroglyph Sites, and Burial Sites. The Tipi-Ring Sites and Occupation Sites ranged in size from $\frac{1}{4}$ acre to fifteen acres, the majority being $\frac{1}{4}$ to $\frac{1}{2}$ acre in size.

Legal Locations of the Sites

This list includes those sites found by me during the survey. Legal locations to other sites mentioned in this report can be found in the filed of the Billings Archaeological Society.

24CB451..... in the face of the western rim of the valley in the S.E. $\frac{1}{4}$ of the S.E. $\frac{1}{2}$ of Sec. 24, T. 4S, R. 22E.

24CB452..... as you leave Red Lodge on the Bearcreek-Washoe highway, the site is in the field to your right. Located in Sec. 3 and 34, T. 8S and 7S, R. 20E.

24CB453..... along the north bank of the North Fork of Grove Creek in Sec. 29, T. 8S, R. 21E.

24CB454..... rings located on the north rim of Davenport Ridge in Sec. 16, T. 6S, R. 24E.

24CB455..... the field above the Bluewater Creek Fish Hatchery in Sec. 9, T. 5S, R. 24E.

24CB 456..... 100 yards north of the Sage Creek Canyon-Bridger road in Sec. 19, T. 7S, R. 24E.

24CB457..... 200 yards south of the Sage Creek Canyon-Bridger road in Sec. 29, T. 7S, R. 24E.

24CB458..... 150 yards north of horizontal control point #5145 in Sec. 26, T. 7S, R. 24E.

24CB459..... along the banks of Piney Creek in Sec. 3 and 4, T. 9S, R. 25E.

24CB460..... located in the rims behind the Skorupa property in Sec. 26, T. 6S, R. 23E.

24CB461..... along the western banks of Elbow Creek in Sec. 31, T. 5S, R. 22E.

24CB462..... to the west of the Bridger-Roberts cutoff road in Sec. 10, T. 6S, R. 22E.

24CB463..... on John Skorupa farm in Sec. 8 and 17, T. 7S, R. 23E.

24CB464..... surrounding B.M. 5993 in Sec. 3, T. 8S, R. 20E.

24CB465..... about 2000 yards north of B.M. 5993 in Sec. 3, T. 8S, R. 20E.

24CB466..... located in the N.W. $\frac{1}{4}$ of Sec. 30, T. 8S, R. 24E.

24CB467..... on the ridge south of the Bluewater Creek Hatchery in Sec. 8, T. 5S, R. 24E.

24CB468..... above the Forest Service line shack in Sec. 33, T. 7S, R. 27E.

24CB469..... directly beyond the washout in the road in Sec. 29, T. 8S, R. 24E.

24CB470..... on the top of ridge in Scotch Coulee in Sec. 6, T. 8S, R. 21E.

24CB471..... on the east bench above Red Lodge in Sec. 3, T. 8S, R. 20E.

24CB472..... about 1200 feet west of B.M. 5993 in Sec. 3, T. 8S, R. 20E.

24CB473..... near the head of Five Mile Creek in Sec. 36, T. 5S, R. 24E.

24CB474..... near the head of the south fork of Grove Creek in Sec. 36, T. 8S, R. 20E.

24CB475..... on top of east Pryor Mountain in Sec. 35, T. 7S, R. 27E.

24CB476..... in the first large outcropping of limestone south-east of Bear Creek in N.E. $\frac{1}{4}$ of Sec. 26, T. 8S, R. 20E.

24CB477..... located on the southern end of Ruler Bench in S.W. $\frac{1}{4}$ of Sec. 13, T. 8S, R. 20E.

24BH501..... along the banks of Elk Creek in Sec. 15, T. 7S, R. 26E.

24BH502..... on the flat near Indian Springs in Sec. 15 and 22, T. 7S, R. 26E.

24BH503..... in Sage Creek Canyon below Teton Jack Cave in Sec. 21, T. 7S, R. 26E.

24BH504..... at the mouth of Sage Creek Canyon in Sec. 19, T. 7S, R. 26E.

24BH505..... near a small spring about one-half mile south of Indian Springs in Sec. 14, T. 7S, R. 26E.

48PA405..... at the mouth of Line Creek in Sec. 35, T. 58N, R. 102W.

48PA406..... located along the banks of the Clark Fork River in the Clark Fork Canyon in Sec. 9, T. 56N, R. 103W.

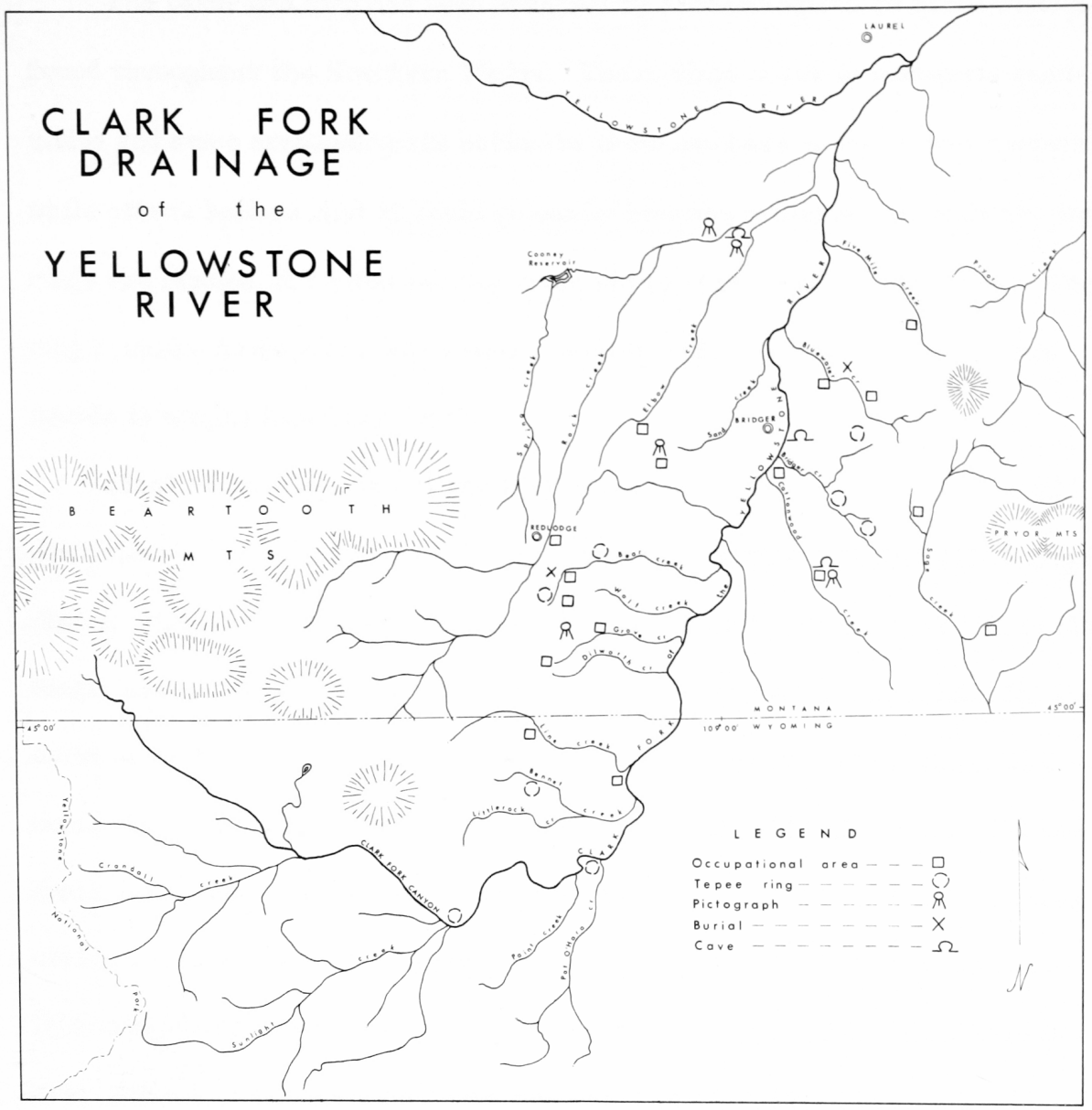
48PA407..... along Bennet Creek in Sec. 10, T. 57N, R. 103W.

48PA408..... along the banks of the Clark Fork River in Sec. 36, T. 57N, R. 102W.

Figure Five

Figure Five:

Map showing the locations of the sites in the Clark Fork Drainage.


CLARK FORK DRAINAGE
of the
YELLOWSTONE RIVER
LAUREL
YELLOWSTONE RIVER
Cooney Reservoir
BEARTOOTH MTS
BRIDGER
RED LODGE
PRYOR MTS
MONTANA
WYOMING
45°00'
109°00'
CLARK FORK CANYON
LEGEND
Occupational area
Tepee ring
Pictograph
Burial
Cave
N

Tipi Ring Sites

The term tipi ring has been assigned by archaeologists to stone circles found throughout the Northern Plains. These rings occur in numerous quantities and some archaeologists estimate their numbers to be in the thousands, while others believe that it could go easily into the millions. In essence, tipi rings are circles of stones varying from six to thirty feet in diameter. Each ring contains twenty to sixty stones, each of which averages about twenty pounds in weight (Hoffman 1953).

Most archaeologists believe that these stone circles were used to hold down the skin of a conical-shaped habitational structure. Malouf (1961) argues that in view of their sheer numbers, it is difficult to believe that the typical single-coursed stone circle, some twelve to twenty feet in diameter, did not serve in fact as a domiciliary tipi ring. Other archaeologists believe that some, but by no means all, stone circles represent habitation sites. Certain examples appear to be too small and others too large, and some have interior configurations of stones which would seem to have no place in a living area (Wormington and Forbis 1965). Other objections to the habitational theory are: there are very few artifacts found on most tipi ring sites, there is little evidence of the use of fire, there is a lack of the usual features of habitational sites such as floors and storage pits, and usually there are far more stones in the ring than would be necessary to hold down the skin cover of a tipi. Often they are located on wind-swept ridges which are far from

wood and water. Although these locations have a commanding view, they are usually very vulnerable to attack.

Obviously, in view of the fact that there are ethnographic accounts of the Indians' using stones to hold down the skins on their tipis, many tipi rings were habitation sites. Others were probably ceremonial in use and there are ethnographic accounts of Indian boys who sat in a circle of stones and waited for their supernatural powers. Aside from these possible reasons, it seems incredible that an archaeologist hasn't offered the possibility that these rings are caused by nature.

The presence of a permafrost layer, and freeze-thaw alternations at the surface, may produce ground patterns in the form of stone circles. These stone circles usually occur on flat ground, but if they occur on steep slopes they degenerate into stone stripes, running perpendicular to the contours. The rings are formed by frost weathering and the sorting is caused by the differential contraction among rock particles of varying sizes and mass. J.P. Schafer (1949) in writing about frost polygons says:

> Within inhomogeneous materials differential freezing may take place, resulting in differential segregation of ice and differential heaving as water is drawn to growing masses from adjacent unfrozen materials.

The formation of stone polygons does not always indicate a particular environmental situation. The occurrence of patterned ground is probably determined most by vegetation cover, but it would be safe to assume that during the ice age, conditions would have been favorable for the formation of stone rings.

During the survey, we found eleven sites with circles of stone on them. One of these had as many as sixty-five rings; another had only two.

24CB454: The site is located near the Bluewater Creek Hatchery on Davenport Ridge, overlooking a small creek known locally as Frosty Jack Creek. There are five rings on the site, ranging in diameter from six to ten feet. The stones used are mainly sandstone and somewhat smaller than those usually found in tipi rings. Some of them weigh no more than two or three pounds. One of the interesting aspects of this site is the location of the rings. They are situated on the eroded areas of exposed sandstone. The entire site is on the edge of a precipitous cliff. These rings were probably not domestic in use. It is possible that they were used as part of the vision quest ritual.

24CB456: The site is located about seven miles southeast of Bridger, Montana. The rings are situated on a small plateau just above the valley floor. There is a creek which flows in the valley now, but we learned that it is overflow from an artesian well recently dug by an oil company. The three rings on the site range from fifteen to twenty-one feet in diameter. The rocks used in the rings are sandstone; some are as small as six inches in diameter while others are as large as twenty inches. The number of stones in the rings ranges from thirty-seven to fifty-one. All of the rings have as many as five stones clustered in the center of them.

24CB457: (Figure 6) The site is located about nine miles southeast of Bridger, Montana. There are nine rings still intact on the site and the rem-

nants of what could have been ten more. The rings are located on the talus-covered terraces near the head of a small canyon. Above these terraces tower sandstone cliffs, some reaching a height of more than fifty feet. On the flat below the rings is a small spring, around which is found the only vegetation of the site. There are no trees on the site.

All of the stones used in the rings are sandstone slabs, some of which are as large as three feet in length and one foot in width. Some of these stones would weigh as much as eighty pounds. Two of the rings are double in course (two stones wide), and the other seven are the single course type. The rings in every instance showed some type of stone pile or configuration within the circle. One of these configurations was in a double course ring. There are eight stones inside the ring which are arranged in the shape of a half circle and connect to the edge of the outer circle. The inner half circle has a diameter of three feet.

The rings on the site ranged in diameter from fifteen to twenty-six feet, with the average diameter being eighteen feet. The number of stones utilized in the rings varied from forty-five to eighty-six, the average number being sixty-two. The main concentration of chipped stone is around the spring.

24CB464: The site is located about two miles south of Red Lodge, Montana. The rings are situated along the lip of a high bench which overlooks the Bear Creek valley. There is a good view of the surrounding countryside from this point. There are nine rings still intact and the possible remnants of several more. All of the rings are the single course variety. The number

of stones in each ring varies from twenty-one to forty-four, with the average number being thirty-two. The diameter of the rings ranges from sixteen to twenty-two feet and the average diameter is nineteen feet.

24CB470: The site is located in Scotch Coulee near the old town of Bear Creek, Montana. A total of three rings can still be found intact and the remnants of possibly twelve more are visible. The site is situated on the east edge of a high ridge overlooking Bear Creek. The ridge is barren of vegetation and has an unpleasant climate, being hot in the summer sun and cold in the winter wind. The three intact rings have an average diameter of seventeen feet.

24BH502: The site is located in Sage Canyon near a spring known as Indian Springs. There are twenty rings in the flat, open meadow around the spring. The rings have an average diameter of sixteen or seventeen feet. Sage Creek flows nearby and the spot would have been an ideal camping place.

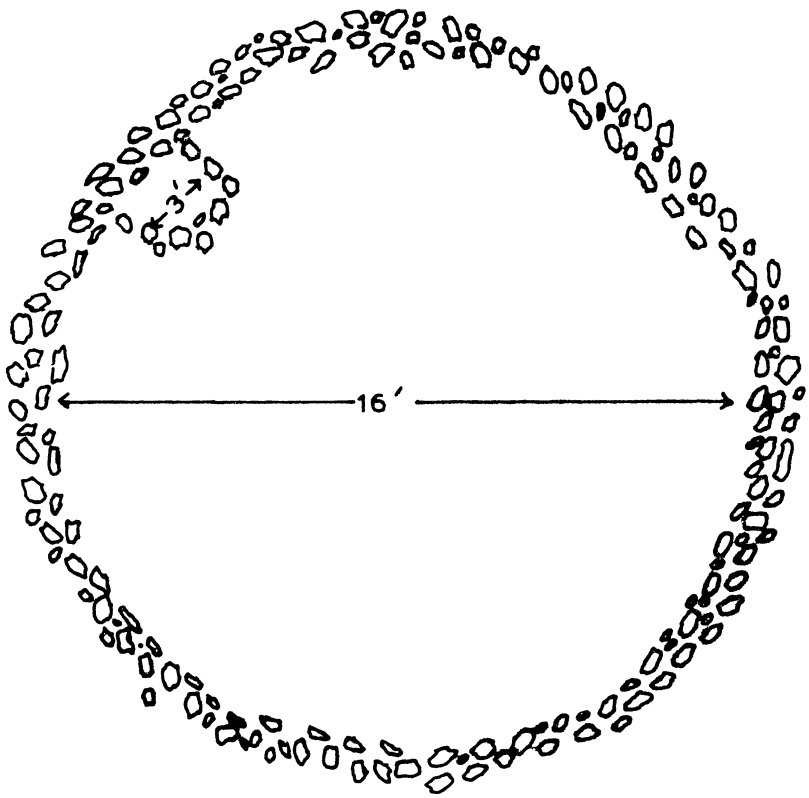
24BH503 - 24BH423: The site is located in Sage Canyon near the confluence of Elk Creek and Sage Creek. This site was numbered by both the Billings Archaeological Society and me. It should be referred to by the first number, 24BH423, in the future. These rings are undoubtedly the ones mentionned by Nelson (1941) in his Sage Canyon Cave excavations. The rings are situated on the grassy banks along Sage Creek where the canyon is fairly narrow. The main vegetation on the site is willows and chokecherries.

24BH504: The site is located at the entrance of Sage Canyon. There are fifteen rings along the bank of Sage Creek at a wide spot in the canyon. The area is covered with sagebrush and alders and chokecherries line the

Figure 5b

Figure Six:

Double course tipi-ring showing inner configuration of stones.



DOUBLE COURSE RING — 24CB457

creek. The rings were not measured, but appear to be from fifteen to twenty feet in diameter. They were all the single course type.

48PA406: The site is located in the banks of the Clark Fork River in the Clark Fork Canyon near where the river comes from Montana into Wyoming. Unfortunately, this site was found on the last day of the survey and we were unable to map in the rings. The rings have an average diameter of about seventeen feet and each ring has about fifty stones. I counted sixty-five rings on the site. All of the rings were of the single course variety. A large number of them had a circular arrangement of rocks in the center. In several of these central smaller circles there were bits of charcoal, which would certainly seem to indicate a central fire pit. The area is strewn quite heavily with flakes of chipped stone. These flakes are found both inside and outside the rings.

Perhaps the most impressive thing about this site is its location. The rings are situated on the valley floor on a flood plain of the river. Some of the rings would be underwater during the spring high water period. Surrounding the site are the steep sides of the canyon, towering some seventy-five feet above the floor. The walls are of Madison Limestone formation and in one place there is a large cavern carved into the rock. The vegetation on the site is sagebrush and juniper, for the most part, with a few trees along the river.

48PA407: The site is located on the bank of Bennett Creek about one mile downstream from the Tolman Ranch on an alluvial fan at the creek's mouth. There are nineteen rings on the site, which have an average dia-

meter of sixteen feet. All the rings are single course and six of them have inner circles of rocks. The Beartooth Mountains stand out very impressively to the west of the site. The vegetation is mainly sagebrush, although a few willows grow on the creek bank.

48PA408 - B.K. Site: The site is located about three miles south of the town of Clark, Wyoming. This site was found by O.J. Salo of Red Lodge, Montana, in the 1930's. Mr. Salo labelled this site the B.K. Site in a system where he gave various drainages an alphabetical letter — the B standing for the Clark Fork Drainage and the second letter for the order in which he found the site.

Lithic material is scattered along both sides of the river for nearly two miles, in an area about 1,000 yards wide on the south side of the river and about 100 yards in width on the north. In the southern half of the site there are three well-defined tipi rings on a small terrace about 100 yards from the river. The rings vary in diameter from thirteen to twenty-one feet with the average being seventeen feet. The stones used in the rings are cobble stones similar to those which line the river shore now. There are approximately fifty stones in each ring.

Occupation Sites

I am using the term occupation sites to denote those sites at which there is lithic material scattered over the surface of the ground. Other archaeologists have referred to these sites as chip-strewn areas, camp sites, surface sites and open air sites. Any site which had tipi rings on it is not included in this category. This is not meant to imply that tipi ring sites were not occupational sites, but that I am employing this classification only for the convenience of description.

Occupational sites varied in size from as small as one-quarter acre to five or six acres. Often one of the key factors in locating occupation sites was the presence of water. As has been previously mentioned, a large portion of the Clark Fork area is quite dry, and, when a spring is found, there is usually lithic material around it.

24CB405: The site is located on the Meeteetsee Trail where it crosses Bear Creek and turns to go through the gap between Ruler Bench and the Palisades. Bear Creek is surrounded by heavy vegetation of sagebrush, juniper, and Cottonwood trees. The creek flows year round down a steep gradient from the near-by Beartooth Mountains and is an excellent source of drinking water. It is made up from springs at various altitudes on the mountainside. Bear Creek is a tributary stream of the Clark Fork River.

The site is situated on the sloping Bear Creek valley side. Rainwater and snow melt have cut a deep arroyo through the site. The area most hea-

vily scattered with lithic material is a small flat terrace, which has a spring on it. This terrace is about one-hundred yards square.

One of the outstanding features of this site is a large mud swamp. This bog presently dries up in the late fall, but it seems possible that it could have been used for capturing game in the past.

Lithic material is quite thinly distributed and is found in areas eroded away by water. Chipped stone material could be more abundant under the surface. The erosion cuts have exposed at least one and possibly two fire hearths. One hearth is a definitely fire-reddened band of soil, around which are rocks which have been discolored by fire.

We excavated a test pit into one of the water cuts. This pit was five feet wide and advanced two feet into the bank of the arroyo. The depth of the pit was seven feet. We thought it necessary to go this deep because we were attempting to locate the culture-bearing zone associated with a Scottsbluff projectile point. This point was found out of situ on the wall of the water cut about eight feet below the surface. The test did show a black humic zone about five and one-half feet below the surface. One chalcedony flake was recovered from the zone, but it was not determined whether or not the level was associated with the Scottsbluff point. Above the humic zone is about four feet of brownish grey clay which does not have any cultural material associated with it. On top of the clay zone is another humic zone. This zone is the one in which the fire hearths are exposed. There are corner-notched projectile points found in this level as well as bits of burned bone.

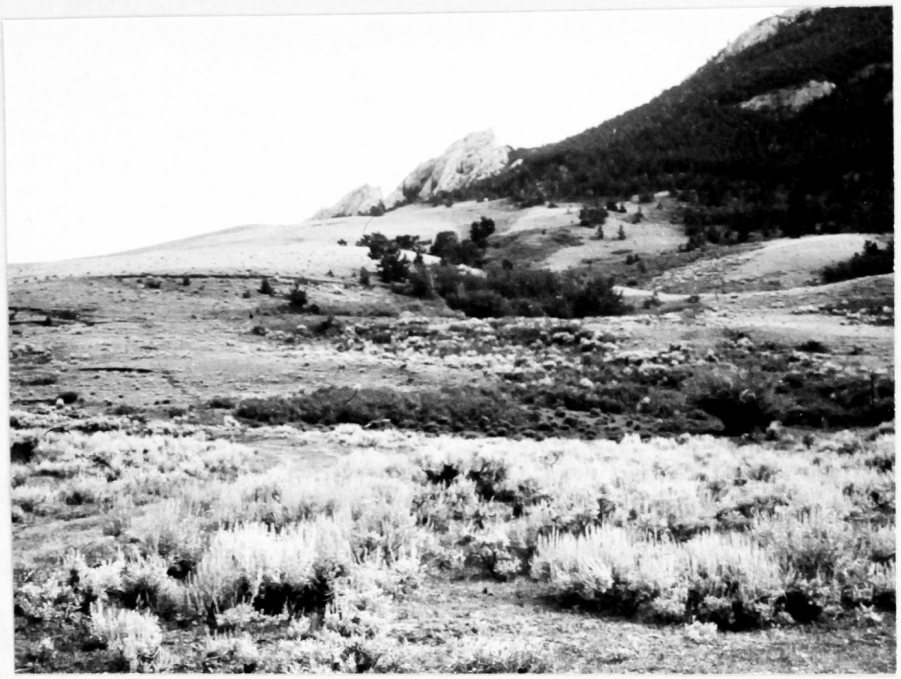


Figure Seven:

Looking south across 24CB405. Note the proximity of the Beartooth Mountains.

Figure Seven

Two fragments of the bone were identified as modern bison. Above this zone is about one and one-half feet of top soil.

24CB452: The site is located in a large field near Red Lodge, Montana. Rock Creek flows along the west edge of the site. The area consists of a plowed field about four acres in extent, with lithic material lying on the surface and extending to a depth of about four inches. There is no indication of habitational structures on the site.

24CB453: The site is located along the North Fork of Grove Creek, about five miles southeast of Red Lodge, Montana. Grove Creek flows intermittently during the year. Immediately adjacent to the site stand the Beartooth Mountains. The total area of the site is about one acre. Several flakes and two side-notched projectile points were found on the surface of the site. No indication of habitational structures could be located.

24CB455: The site is located in a field directly above the Bluewater Creek Fish Hatchery . The lithic material is concentrated around a large spring, where burned bone, fire-heated rock, as well as chipped stone are eroding out of the ground. The land owner finds several artifacts each time he plows the field. The culture-bearing zone seems no deeper than a few inches. The main vegetation on the unplowed areas of the site is sagebrush.

24CB458: The site is located about ten miles south of Bridger, Montana. Lithic material is scattered around a small spring in a shallow depression which runs along the top of a sandstone rim. Mr. Nick Becker of Bridger,

Montana, told us about this site, saying that there were tipi rings there. Careful search, though, did not reveal the rings, so we may have been in the wrong area. The main vegetation on the site is juniper and scrub pines.

24CB459: The site is found along the banks of Piney Creek near the town of Warren, Montana. A permanent stream, Piney Creek runs several different courses through the site. The banks of the creek as well as the connecting fields are covered with chipped stone, a few burned bones, and fire-cracked rocks. None of the material seems to be more than four or five inches below the surface. There is a large array of different material types, some of which is native to the area. Possibly the site was used for quarrying basalt. There is no surface indication of habitational structures on the site.

24CB461: The site is situated on Elbow Creek about six miles west of Bridger, Montana. There are a few pieces of burned bone and numerous flakes eroding out of the banks of Elbow Creek. Elbow Creek flows throughout the year. The site is fairly extensive, and lithic material covers about four acres.

24CB462: The site extends along Cedar Creek about six miles west of Bridger, Montana. Visible over most of the area are sandstone cliffs and steep-sided hills. There is the typical semi-arid type of vegetation which consists of sagebrush, low shrubs, grasses and scattered stands of cedar and pine. Chipped stone material is eroding out over an area of about two acres and seems to be no more than a few inches below the surface.

24CB463 — The Skorupa Farm Site: The site is located about four miles south of Bridger, Montana. The lithic material is scattered along the bank of the Clark Fork River. Mr. John Skorupa, the landowner, says that every year when they work in the fields they see evidence of fire hearths. At present they have not plowed the field, only leveled it. The field has had some trees cleared from it and appears to be part of an old island. The water in the side channel has been diverted back to the main stream of the Clark Fork.

The extensive collection of chipped stone the Skorupas have from the field indicates the site was occupied for a number of years. Mr. Nick Becker, an old timer in the Bridger area, says that he was told the Crow Indians used this site in historic times, mainly as a winter campsite. The Skorupas say that this area is sheltered and extremely mild in the winter. No indication of habitational structures can be seen.

24CB467: The site is located on the ridge overlooking the Bluewater Creek Fish Hatchery. The lithic material is scattered throughout the broken sandstone ridges which stand adjacent to Bluewater Creek. Bluewater Creek is a permanent stream. Scattered with the chipped stone are fragments of bone and fire-heated rocks. There is no indication of house structures on the site.

24CB468: The site lies on Sage Creek-Pryor Mountain road just above the Forest Service Line House. A small spring-fed stream flows through the area. Flakes, chips and artifacts are scattered along the mountainside.

There are no level spots on the site. The elevation is about 7000 feet above sea level.

24CB469: The site is located about ten miles south of Bridger, Montana. The area is an open, flat valley bottom with sandstone cliffs on all sides. Cottonwood Creek, which flows near the site, is dry during the late summer months. Lithic material is fairly sparsely scattered over an area of about one acre.

24CB471: The site is found about four miles southeast of Red Lodge, Montana. It is situated on a small finger ridge which runs east into the Bear Creek valley. Chipped stone material, broken bone and heat-cracked rocks are quite abundant in an area about one acre square along the ridge. The main vegetation on the site is pine trees.

24CB473: This site lies near the head of Five Mile Creek. Typical semi-arid landscape and vegetation surround Five Mile Creek, which flows throughout the year. Lithic material is scattered along the creek for several hundred yards and is found in eroded areas no deeper than a few inches below the surface.

24CB474: The site is situated in a high meadow on the top of the steep Beartooth face at the head of the South Fork of Grove Creek. The approach to the site is a dirt road which winds up the nearly vertical face between towering limestone cliffs. This opening is known locally as Solomon's Gate. The view of the surrounding country is overwhelming. Chipped stone material is eroding out along the creek bank and seems to be no deeper than a few

inches below the surface.

24CB475: The site is found near the top of East Pryor Mountain about one-half mile west of the Dryhead Rim. It consists of an open meadow with a few scattered pine trees. Found with the lithic material are bits of burned bone and fire-cracked rocks. The material seems to be eroding out from about six inches below the surface. Heavy grass cover on the site makes surface collecting difficult. The elevation of the site is 8822 feet above sea level.

24BH505: The site is located along the terraces of Line Creek near the junction of Line Creek and the Clark Fork River. Line Creek, a permanent stream, has eroded a trench through the site to a maximum depth of twelve feet. In this sandy cut two culture-bearing zones can be seen. The upper level is five to six inches below the surface and several fire hearths can be seen in this zone. The second level is three feet below the surface. Mr. John Schulte of Billings, Montana, found an obsidian side scraper in this zone. The surface of the site has a scattering of lithic material which may or may not be part of the upper level. There is no indication of habitational structures on the site.

Cave Sites

The Clark Fork is an excellent cave area, with sandstone overhangs and rockshelters in the lower foothills and limestone caves or grottoes in the mountain canyons. We searched seventy-five of these caves for evidence of Indian occupation.

24CB451: This cave is located about one mile southeast of Joliet, Montana. It is a small, natural shelter which has been formed by two sandstone slabs standing together in a conical shape. The interior is about eight feet wide and twelve feet deep. The height varies from the back to the front, with the average being about ten feet. The deposits have been screened by many curio seekers, but a few seed beads are still present.

Outside the shelter the surrounding terrain is broken sandstone rim country. Elbow Creek flows through the valley. The main vegetation is juniper shrubs and scrub pine.

24CB460: The overhang is located about three miles east of Bridger, Montana. The cave is situated in a sandstone cliff near the head of a small canyon. The area is broken sandstone with large sandstone slabs scattered throughout the valley bottom. There is steep, talus-covered slope with dense vegetation below the cave. The interior of the shelter is about 100 feet long by twenty-five feet deep. Much of the roof has collapsed and covers entirely the floor area. Several pieces of chipped stone were picked up along the back wall of the shelter.

24CB466: The cave is located about ten miles south of Bridger, Montana, on Cottonwood Creek. It is situated near the head of a narrow finger canyon which runs perpendicular to the main canyon. Cottonwood Creek flows through the main canyon.

The overhang is 270 feet long and forty-six feet deep at its maximum. The approach to the shelter is by way of a steep, sandstone talus covered with little vegetation other than greasewood and an occasional juniper. Near the lip of the shelter, there is a very small amount of flat floor area due to the large slabs which have broken off the roof. Situated in this roof collapse area are eight wooden poles which stand together in a conical fashion. The diameter of the poles is eight to ten inches; they range in height from twelve to twenty feet.

Along the back wall of the shelter, where sluff from the roof has not fallen, there is an open sandy floor. On this floor are five rectangular outlines formed by piled slabs of sandstone. These slabs are piled to a height of twelve to fifteen inches on three sides. The wall of the cave forms the fourth side of the rectangles. One of these rectangles has two logs incorporated within the slab wall. These outlines range in length from nine to twenty-two feet and their width varies from six to fifteen feet. Inside each rectangle, large flat slabs of sandstone cover the interior floor. Beneath these slabs are bits of charcoal mixed with ash and pieces of burned logs. Thousands of pine nut hulls cover the floor of the entire shelter. We collected a few pieces of chipped stone and a fragment

of a stone pipe.

In my opinion, this overhang does not represent a continuous occupation area, but rather that of intermittent occupation or a stay of a few days by some peoples who perhaps were waiting out a blizzard. The rectangular outlines probably represent the bases of house structures where logs were stacked against the back wall of the cave. The inner slabs of stone may have been laid on a bed of coals in order to make a warm sleeping surface. The conical pile of poles near the lip of the shelter may be the work of a rancher who stole the poles from the rectangular outlines and stood them up in the front where he might later collect them for fence posts.

24CB476: The cave lies about five miles southeast of Red Lodge, Montana. This cave might be better defined as a series of natural arches which were cut into the limestone by wind erosion. There are three arches which span the top of the shelter, with two windows, one between each arch, cut open to the sky. The longest of the arches is about 250 feet and the shortest is only about twenty feet. The shelter is in one of the high, exposed peaks of the Beartooth face, nearly 2000 feet above the Clark Fork valley. Access to the shelter is extremely difficult. Beneath the largest arch is a sheltered area. On the wall of this shelter are two streaks of red paint and on the floor are bits of charcoal. No chipped stone was found in the cave.

24BH501: The cave is located in a steep-sided limestone canyon in the Pryor Mountains. The cave, which is carved into the limestone cliffside,

is 100 feet long and twenty-one feet deep. On the east wall of the cave, there is a red pictograph representing a human figure. This is the only painting in the cave.

No testing was undertaken at the site, but by probing it was determined that the deposits were three feet deep. No artifacts were found on the surface of the cave, but undoubtedly a cultural sequence would be revealed by excavation.

Figure Eight

Figure Eight:

Floor plan of 24CB466. Note the stone slab outlines against the back wall of the overhang.

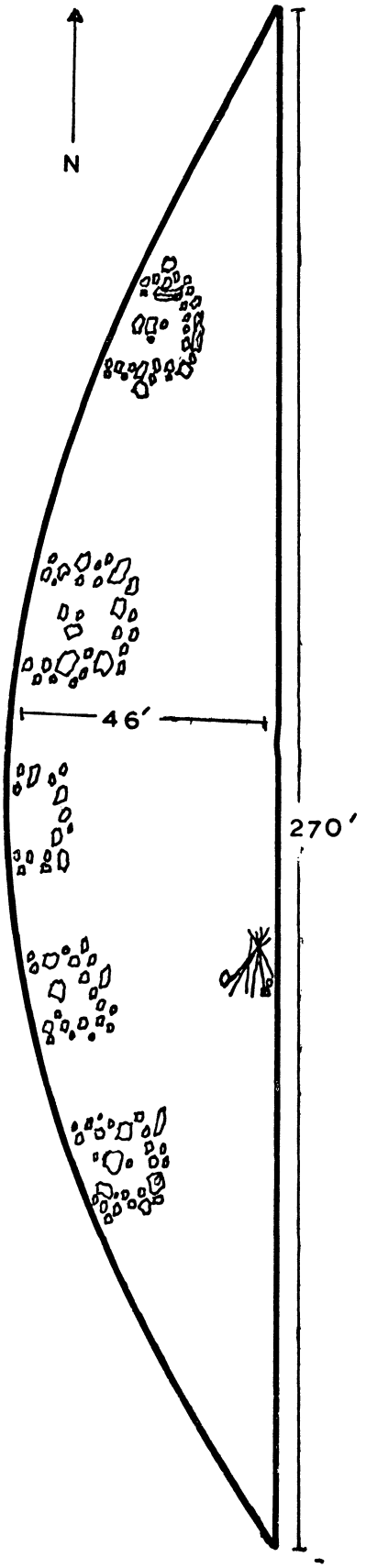

N
46'
270'

Figure Nine:

Looking north at 24BH501 — Elk Creek Cave.

Figure Nine

Pictograph Sites and Petroglyph Sites

Pictographs are paintings made on rock surfaces or on skins, whereas petroglyphs are designs which are carved, pecked or abraded into rock surfaces. In Montana, pictographs are more common in the mountains while petroglyphs seem more common in the foothills. This distribution might be simply explained by the fact that it is easier to make a petroglyph in sandstone than in granite or limestone.

Four types of pictographs are recognized for Montana by Malouf (1961:1). The first type consists of fairly realistic and predominately animal figures. They are usually painted solid, rather than outlined. Anthropomorphic designs are usually full face, by zoomorphic drawings are side view. The second type is characterized by more human figures than the previous type. Both animals and humans are portrayed less realistically than in type one, and there are also more bodies in outline in type two. Malouf (1961b: 2) has found type two superimposed over type one. Type three represents comparatively rare and highly conventionalized drawings. They are less realistic than either type one or type two. Type four represents a composite of the other three types (Malouf 1961b: 3). In type four, human figures are more realistic again and there are more animal figures. Type four has been found superimposed on the other three types.

In addition to these four types, there are several other distinct kinds of pictographs. These include the human handprints with the fingers extended. These are sometimes in outline, but more often solid. A second distinct kind

of pictograph is the shield-bearing warrior. These appear as a human head and legs protruding from behind a circular object which covers the entire torso (Conner 1962: 8). The circular object or shield often has designs on it. Some may be interpreted as phallic while some represent head gear (Conner 1962: 9).

V-shaped anthromorphs represent a third distinct drawing. These have a rectangular outline with V-shaped shoulders. The heads are circular outlined placed in the V. The legs are an extension of the body sides.

Much less is known about petroglyphs than pictographs (Malouf 1961: 10). However, petroglyph styles appear to be very similar to the pictograph types. Of the eight rock art sites which we saw during the survey, six had been previously recorded by the Billings Archaeological Society.

24CB402: This petroglyph site was recorded by Stuart W. Conner on April 15, 1962. The panel, which is between thirty and forty feet long, is located a few miles from Joliet, Montana. It contains what appear to be several hunting and battle scenes. The petroglyphs are highly conventionalized side viewwanthromorphs on foot or mounted. The presence of what are likely to be horses led Conner (n.d. unpublished) to date the drawings between the mid-1700's and the late 1800's. In view of the fact that the country was traditionally Crow Indian territory in historic times, Conner feels that Crow Indians were the artists. Conner notes that the hair styles and personal adornment portrayed are typically Crow.

When I visited this site, I was impressed by the detail in some of the

drawings. In my opinion, all efforts should be made to preserve this site.

24CB406 — Hilej Pictographs: This site is on Rock Creek near the town of Joliet, Montana. The paintings are situated on a narrow ledge running along a cliff about fifty feet above Rock Creek, which flows along the base of the cliff. From the ledge there is a good view in either direction. The site was recorded by Stuart W. Conner and Robert J. Lane of Billings, Montana, on December 1, 1963.

The pictographs consist of three shield-bearing warriors. One is in red paint, one in black paint, and a third in a combination of black and red. The figures are all more than two feet in height.

Perhaps the most interesting thing about this site is that the land owner, Raymond W. Brady, reported that on several occasions in the past few years, several carloads of Indians had asked his permission to visit the site. They offered no explanation as to their visit, and Mr. Brady did not watch their proceedings, but he was under the impression that they had a service or ceremony on the ledge. Stuart Conner has made several attempts to learn from what tribe the visitors were, but thus far has been unsuccessful.

24CB407 — Cedar Creek Rockshelter: This site was recorded by Donald E. Nordstrom of the Billings Archaeological Society on March 13, 1964. The site consists of a small, egg-shaped cave eroded into a vertical sandstone face. The opening is six and one-half feet wide, four and one-half feet high, and four and one-half feet deep (Nordstrom 1964). It con-

tains twelve pictographs on the ceiling and wall. All are executed in black. The drawings are so obscure that it is difficult to make out the intended designs.

24CB408 — Provinse Pictographs: The site is located about ten miles south of Bridger, Montana. There are three separate panels of legible designs on the site. The first panel is thirty-two feet long on an east-facing sandstone cliff. Nearly all surfaces had been abraded smooth before the paintings were made. Included among the drawings of panel one are several shield motifs which were done in red, orange and bluish-green paint pigments. In some instances, the paint has protected the outline of the design and prevented it from eroding as rapidly as the surrounding cliff face. This creates a raised ridge along the outline. These ridges were measured by very crude means to be three sixty-fourths of an inch high at their maximum. These shield motifs were as large as two feet in diameter and most of them displayed some inner design. Among the shield motifs are several series of vertical lines. The second set of paintings are on a large boulder, which has a diameter of about twelve feet. Two paintings are on the east side of the boulder and one is on the bottom of the rock. In the sandy soil below the rock there is a hollowed-out cavity into which one can crawl to view the bottom painting. This painting is the outline of a human figure done in black. The two motifs on the side of the rock are circular in outline (Figure Ten). One of these is solidly painted in red pigment except for an unpainted side view of an animal in the center. This animal looks somewhat

like a bear. The other drawing is a polychrome design of a circle divided into eighths. The divisions are alternately colored with red, yellow and pink pigments. There are some radiating lines around the design. This design might represent a shield. On the cliff near the boulder are some streaks of red paint, but the outline is too obscure to make out the design.

The third panel of paintings are northeast of the boulder along a cliff face. There are two paintings in the panel. One is an inverted V which has been solidly colored in a yellow pigment. There is a triangular projection attached to the top of the design. It may represent a tipi. The other painting is a circular motif with one quadrant solidly colored. The whole design is yellow. Both of these paintings were done on smoothed surfaces.

Below the paintings in the third panel are four petroglyphs. One of these appears to represent a shield-bearing warrior and the other three are rectangular designs with fringes radiation from them.

There are several more obscure paintings in the canyon that will not be mentioned here.

<u>24BH501</u>: (Figure Eleven) The pictograph in Elk Creek Cave is a representation of a human figure. The figure is eight and one-half inches in height. It has a full-length garment on, which could indicate a woman's dress or a robe. The painting is in red pigment and is the only one in the cave. The arms of the figure are raised, with the hands pointing skyward.

Figure Ten

Figure Ten:

Pictographs at 24CB408. Each of the circular motifs is about fourteen inches in diameter.

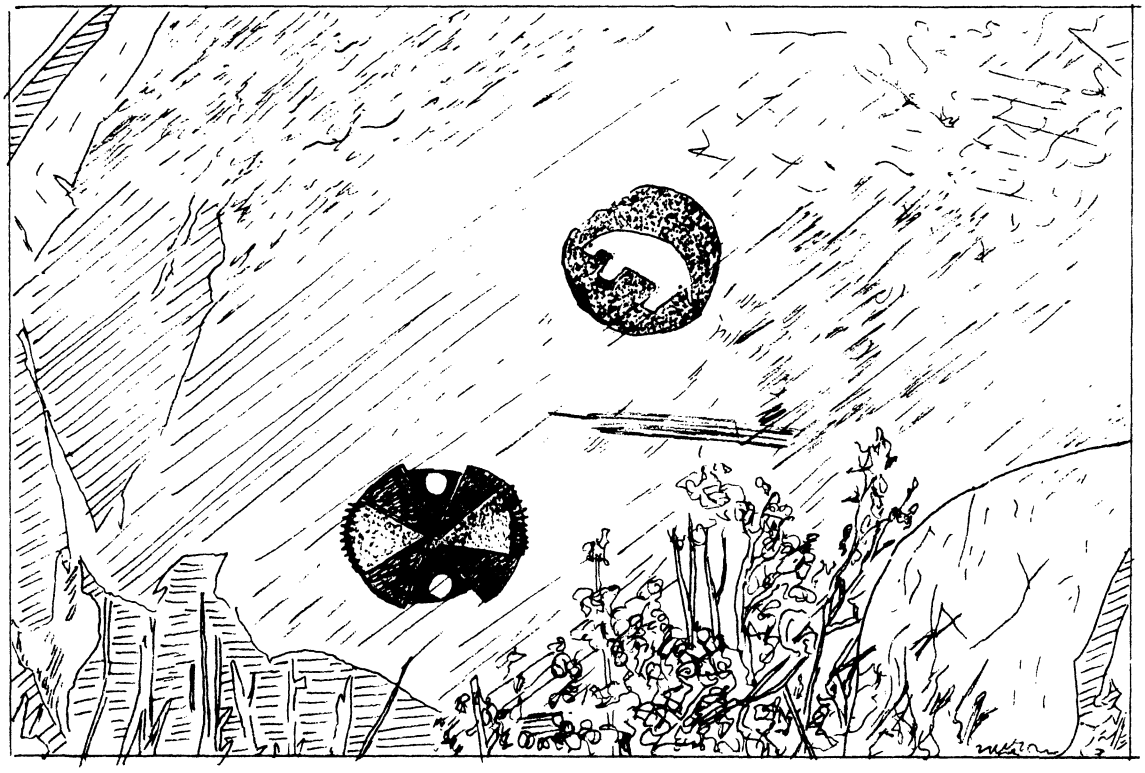
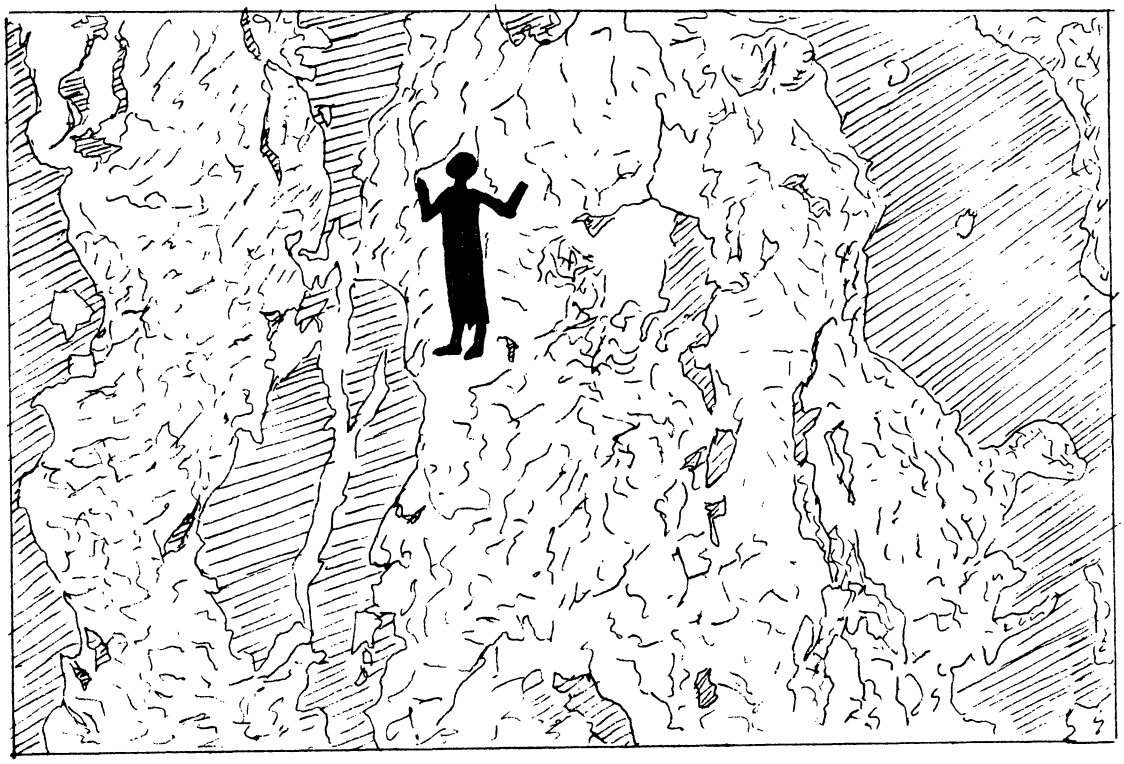


Figure Eleven

Figure Eleven:

Pictograph at 24BH501. The red figure is ten inches high.



Burial Sites

The Indians in the Clark Fork area used several different methods of burial. The most common of these was probably the tree burial, or the practice of wrapping the body and tying it to a large limb of a tree. Several early residents of the Clark Fork area remember tree burials. Mr. Chilcott, an old timer of Silesia, Montana, said:

> ... in 1889 there was an Indian burial ground at the butte on the McGeorge place... skeletons and scraps of blankets in the trees yet. The Indians had wrapped their dead in blankets and tied them up in the trees. There also could be found Indian artifacts and beads on the ground under the trees (Butler, 1966).

Another common type of burial was in the talus slopes where small burial chambers could be eked out with little effort. Other burials were sometimes in shallow graves on a prominent ridge under a tumulus of rocks.

Burial sites seem quite rare in the Clark Fork area. Only two burial sites were located during the survey, both of which had been looted by relic hunters. Fortunately, the Billings Archaeological Society was able to salvage some of the information from one of these.

24CB404: This burial site is located on Bluewater Creek about eight miles southeast of Bridger, Montana. The burial was found by Albert Schwartz who contacted the Billings Archaeological Society after he had removed the skeleton.

The burial was located on a steep talus slope in a small chamber which had been formed by erosion out of the side of a large sandstone block. The opening of the shelter faces south and the floor slopes toward the opening.

Several blocks of sandstone seem to have been placed in front of the opening to prevent dislodging of the bodies.

Only osseous, shell and stone materials were preserved. One adult skeleton and one infant skeleton were found. The adult skeleton lay extended on its back with the head at the east end of the shelter. One femur had become inclined so that it protruded above the light soil skeletal covering, leading to its discovery (Fehyl 1962:3). Near the abdominal area were found an assortment of stone implements, a bone awl and a group of tiny long bones and part of a skull which appeared to be those of an infant. The chipped stone included ovoid knives, scrapers and flakes of nondescript size.

By way of interpretation, Fehyl (1966:5) says:

> The absence of any trade items suggests a pre-contract burial. The artifact assemblage strongly suggests the remains to be those of a woman and the condition of the teeth and the bone sutures are those of a young adult. The infant bones and their position at the abdominal area lead one to think, of course, that perhaps the young woman died in childbirth or as a result of it, taking the baby with her.

24CB465: The burial site is located about two miles east of Red Lodge, Montana. The site consists of a pile of stones which have been looted and strewn. Originally, according to O. J. Salo of Red Lodge, Montana, the pile was about four feet by seven feet and contained a human skeleton. Of special interest at this site is the fact that there are several smaller piles of stone radiating out from the main one. These have been scattered to the point that they are almost beyond recognition. The larger pile of stones is located on a very commanding point, with a view of the Beartooth Mountains to the

south.

One small "copper ring" was found on the hillside near the larger stone pile. This specimen is a small piece of copper wire in a circular shape with a small blue bead on it.

Site Summary

On the basis of materials collected and the sites observed during the course of the survey, it is possible to make a few broad generalizations about sites in the Clark Fork area. The campsites indicate small nomadic bands, which were on the move, never stopping more than a few weeks or months at one site.

The economy of the prehistoric residents of the Clark Fork was mainly big game hunting. The movements and habits of the big game animals would have greatly dictated the movements of the hunters.

Water was needed in the Clark Fork to support the vegetation upon which the animals lived. Water for human and animal consumption was also needed. It is easy to see why nearly every freshwater spring in the valley has cultural debris scattered around it. In dry years when these springs had no water in them, the peoples would have been forced to move elsewhere.

Assuming there was a lodge for every tipi ring and an average of six people lived in each lodge, the larger sites would have had 250-350 people and the smaller sites only 10-20 residents. The difference in the size of the camps may reflect seasonal shifts from large bands to small family units. I suggest that this shift took place in the spring. The families grouped together in the Clark Fork Valley for the winter. When spring arrived, or when the dried meat from the autumn hunt was gone, the villages broke into family units who traveled to the mountains to hunt.

The value of an archaeological survey is to locate sites worth excavating; the following list includes those I would excavate. First, I would test and dig 24CB405. With the Scottsbluff point and the corner-notched material, the site could produce an interesting cultural sequence. Also, there have been some plans to reconstruct the Meeteetsee Stage Trail. If this is done, 24CB405 will be ruined.

The second site I would excavate is 24CB466. This overhang could reveal some valuable information about the habits of Neo-Indians. A crew of four men could fairly well remove the deposits in ten to fifteen days.

24BH501 should be excavated and this will probably be done by the crew which does the archaeological work in the Yellowtail Dam Recreation Area.

The fourth site that I think should be tested and possibly excavated is 48PA405. The cultural layers are quite sub-surface at this site, which may indicate considerable antiquity.

ARTIFACT TYPOLOGY

An important section of any archaeological report is the classification of artifacts or the lumping together of specimens on the basis of shared attributes. This is necessary when large numbers of specimens are to be reported, and it is not feasible to describe each one of them individually.

The procedure used in this classification was first to group the artifacts according to technique of manufacture, i.e., chipped stone, ground stone, etc., and then subdivide the groups on the basis of shape, technique of manufacture, weight, and inferred function. The first division is referred to as a class and the second as a type.

In most cases this typology is very similar to the ones used by Taylor (1964) in the report on Yellowstone National Park and followed by Arthur (1966) in the report on the Upper Yellowstone River. These two typologies do an excellent job of classifying and comparing the artifacts on the Northern Plains; and rather than create a new typology for the Clark Fork material, I have used the existing types postulated by Taylor and Arthur and created new types only when necessary.

This typology is not to be considered an end in itself, but rather a framework within which to carry on research.

Chipped Stone Artifacts

The divisions of chipped stone artifacts include projectile points, blades, plano-convex scrapers, side scrapers, drills, gravers and cores.

Specimens which were too fragmentary for good identification are not included in the typology.

Projectile Points

Since projectile points differ from other chipped stone artifacts in that their traditional shapes have changed through time, it is possible to compare the projectile points found in the Clark Fork to similar types which are known to have been made during a certain time period in other areas. We may not be able to say whether the projectile points from the Clark Fork are older or younger or of the same age as the dated specimens, but at least there are some clues as to the approximate age. With this, one can develop a tentative relative chronology.

Type I "Folsom" point

Folsom points are described by Wormington (1957:263) as:

> They range in length from three quarters of an inch to three inches with an average of about two inches. They are lanceolate in outline and have concave bases usually marked by ear-like projections. There is frequently a small central nipple in the basal concavity. The points were fluted through the removal of longitudinal flakes. The flutes usually extend over most of the length of the point. In most cases one major channel flake was removed from each face but sometimes only one face was fluted. Most specimens have a fine marginal retouch. The lower edges usually bear evidence of grinding.

The Clark Fork specimen may be described as:

> A broken basal fragment of a "Folsom" blade. One ear is broken from the base. Both faces have a large channel flute removed. There is a slight retouch along the lateral edges and the lower sides show evidence of smoothing.

Sample: One basal fragment.

Material: Obsidian

Size: Length: broken, Width: 2.5 cm., Thickness: 6 cm.

Provenience: Found between Paint Creek and Pat O'Hara Creek in Northern Wyoming by Mr. O.J. Salo of Red Lodge, Montana.

Comparable Specimens:

Otho Mack Collection.....Gardiner, Montana
Jasmann 1963..... Southwestern Montana
Forbis and Sperry 1952..... Helena, Montana
Roberts 1936..... Lindenmeier Site, Colorado

Type II "Scottsbluff" points (Figure 12)

Scottsbluff points are described by Wormington (1957: 267) as two types:

Type I — Points with somewhat triangular or parallel-sided blades, small shoulders and broad stems. The flaking is usually of the transverse parallel type, but it may be more irregular. The cross-section is a thick oval. The stem edges are usually ground. The range in length is from two to five inches. Most specimens are between three and four inches long and about one inch wide. Many of those that are less than three inches long compare with the longer specimens in breadth and may represent points that were reworked after the tips had been broken.

Type II — Points that resemble Type I but have wider triangular blades, are thin and lenticular in cross-section, and have more clearly defined shoulders.

The Clark Fork specimen may be described as:

Exhibiting transverse parallel flaking with some retouch along the sides. The sides are parallel and the cross-section is oval. The remaining portion of the broken stem exhibits lateral grinding.

Sample: One broken specimen of Wormington's Type I.

Material: Discolored tan chert.

Size: Length: broken, Width: 2.6 cm., Thickness: .8cm.

Provenience: 24CB405

Comparable Specimens:

O.J. Salo collection, Red Lodge, Montana..... Mary's Lake, Montana
Vern Waple collection, Red Lodge, Montana... Clark Fork area
Jepsen 1953..... Horner Site, Wyoming
Mulloy 1958..... Pictograph Cave, Montana
Forbis and Sperry 1952..... MacHaffie Site, Montana
Forbis and Wormington 1965..... Alberta, Canada
Arthur 1966..... Upper Yellowstone, Montana

Scottsbluff points are found throughout the Northern Plains. One of the better Scottsbluff sites is the Horner Site located about four miles northeast of Cody, Wyoming. The site is thought to have been a butchering area and the parts of 200 bison skeletons have been recovered. All of these are thought to be a modern species (Jepsen 1953:20).

The artifacts found at the Horner Site have been labelled the Cody Complex, which includes Scottsbluff points, Eden Valley points, Cody knives and various other non-diainostic artifacts. The Cody Complex has several radio-carbon dates which average at 6,920 $\pm$ 500 years ago (Libby 1955).

Scottsbluff points were found at the MacHaffie Site near Helena, Montana (Forbis and Sperry 1952). The Scottsbluff level at the MacHaffie Site was 2 feet below the surface and consisted of greyish clay. The radiocarbon date on this level was 8,100 $\pm$ 300 (Forbis 1962:252).

Type III "Agate Basin" points (Figure 12)

Agate Basin points are described by Wormington (1957:269):

> Long slender points with sides slightly convex or almost parallel. The maximum breadth of specimens with curved sides is usually above the mid-point. Bases are straight or convex. In some instances the bases are almost as pointed as the tips. Flaking is usually of the horizontal parallel variety, and there is a fine marginal retouch and pronounced grinding of the lower lateral edges; the base is rarely ground. There is considerable variation in size with a range of between two and a half and six inches.

The Clark Fork specimen may be described as follows:

> The basal portion of a parallel sided point with the sides expanding away from the base. The base is slightly convex. The flaking is parallel with some retouch along both edges. The lateral sides near the base are heavily ground, but the base shows no evidence of grinding.

There is indication that a few flakes were taken off in the direction of the base of the tip to produce basal thinning.

Sample: One broken specimen

Material: Brown chert

Size: Length: broken, Width:1.9 cm., Thickness: .8 cm.

Provenience: 24CB463

Comparable specimens:

Arthur 1966, Type II..... Upper Yellowstone River, Mont.
Husted 1965..... Big Horn Canyon, Montana

Type IV "Angostura" points (Figure 12)

Angostura points are described by Wormington (1957:269) as:

Slender lanceolate points, the symmetrical sides of which incurve to the tip and taper to the narrow base forward from the base about two-fifths to one-half of the total distance from base to tip. The base is either shallowly concave or irregularly straight. Normally each face bears parallel ripple flake scars running obliquely from upper left to lower right. The ripple flake scars are usually of approximately equal length and the cross-section is lenticular, but in some instances the presence of flake scars of unequal length has produced one or two longitudinal ridges and some specimens are asymmetrical or trapezoidal in cross-section. In a few cases the flake scars are horizontal. Points range in length from two and a half to three and a quarter inches. The bases were thinned by the removal of small longitudinal flakes. The lower portion of the lateral edges, but not the basal edge, were smoothed by grinding.

The Clark Fork specimen may be described as:

A narrow parallel sided lanceolate point with parallel flaking running obliquely from the upper left to the lower right. The flake scars are unequal in length giving the specimen two longitudinal ridges. The base of the point is broken, but there is still some evidence of basal thinning. The sides near the base show grinding.

Sample: One specimen with a partially broken base.

Material: Greyish-purple colored chalcedony

Size: Length: 5.7 cm., Width: 1.6 cm., Thickness: .4 cm.

Provenience: 24CB475

Comparable specimens:

Vern Waple collection, Red Lodge, Montana... Broadwater Lake, Montana
Arthur 1966..... Upper Yellowstone, Montana
Wheeler 1954..... Angostura Reservoir, South Dak.
Taylor 1964..... Yellowstone Park, Wyoming

On the basis of specimens found behind Angostura Dam in South Dakota, Jack Hughes (1949) identified a new point type which he called the "Long" point. Because people thought that the name referred to the length of the points, Richard Wheeler (1954) proposed the name "Angostura".

It should be pointed out that the Angostura Type Station lies only thirty miles from the Agate Basin Type Station. This has led several authors to believe that they are the same type, even though Wheeler still maintains the "Angostura" points should be separate (Wormington and Forbis 1965:23). A carbon sample taken from an unprepared hearth in the Angostura level produced a date of 7073 $\pm$ 300 (Libby 1955:126).

George Arthur's Type VI (1966:99) is very similar to the Clark Fork specimen. He describes them as "short, thick, lanceolate points with irregular straight or slightly convex bases."

Type V "McKean" points (Figure 12)

McKean points are described by Wheeler (1952:46-47) in the following manner:

Form

Outline: Generally, the sides of the blade are incurved toward the tip and tapered toward the base; less commonly, the sides of the blade are parallel, and are tapered toward the tip and incurved near the base; rarely, the sides of the blade are incurved toward the tip and toward the base. The base has a deep, symmetrical notch, 3.5 to 7 mm. deep and approximately 8 to 10 mm. wide; or less commonly, a shallow, usually symmetrical notch 1.5 to 2.5 mm. deep and approximately 4.5 to 9 mm. wide.

Cross-section: Generally, lenticular; rarely, plano-convex.

Longitudinal section: Same as above.

Manufacturing Technique:

Blade: Moderately well-controlled pressure flaking. Usually both

faces of the blade are fully flaked but in 5 cases (out of 28), one face of the blade is fully flaked and the opposite face is retouched along the edges only. In every instance the edges of the blade are thin, slightly sinuous, and somewhat uneven. There is no evidence of edge-smoothing or grinding.

Base: The basal notch was apparently produced by removing one flake or several flakes from each face in the direction of the tip. The lateral projections are usually thinned bifacially and are rounded, pointed or irregular in outline; they are rarely of the same length and breadth. The edge of the notch is thin and sharp.

The Clark Fork specimen may be described as:

Having sides which incurve toward the tip and taper to the base. The base is notched by the removal of several flakes toward the tip. The cross-section is lenticular. The sides show no evidence of retouch and neither the base nor the sides show grinding.

Sample: One specimen

Material: Yellow-colored jasper

Size: Length: 3.1 cm., Width: 1.4 cm., Thickness: .5 cm.

Provenience: 24CB459

Comparable specimens:

Arthur 1966, Type VII	Upper Yellowstone, Montana
Bentzen 1961	Powers-Yonkee Bison Trap, Powder River County, Montana
Davis 1956	Big Sandy Reservoir, Southwestern Wyoming
Coe 1959	Edgar Site, Cody, Wyoming
Mulloy 1954	McKean Site, Wyoming
Mulloy 1958	Pictograph Cave, Montana
O.J. Sale collection, Red Lodge, Montana	Clark Fork area
Vern Waple collection, Red Lodge, Montana	Clark Fork area
Taylor 1964	Yellowstone Park, Wyoming
Wheeler 1952	Keyhole Reservoir, Crooke County, Wyoming

Type VI "Duncan" points (Figure 12)

The Duncan point is described by Wheeler (1954:7) as:

... a chipped stone projectile point characterized by a straight converging or bilaterally convex blade; insloping, non-barbed shoulders; and a straight parallel-sided or slightly expanding stem with shallowly notched base. It is 31.5 mm. or more in total length and the stem represents about one-fourth of the total length. The blade is 15.5 mm. or more in maximum breadth and 4.5 mm. or more in maximum thickness... The blade and stem are fully chipped by pressure on both faces from the edges in random fashion. The blade is lenticular in cross-section. The base is notched by pressure chipping on both faces from the base toward the tip. The edges of the blade are generally thin, straight, even, and sharp. The sides of the stem are usually smoothed by retouching or grinding.

The Clark Fork specimens may be described as:

Having convex blades which constrict at the base to a parallel-sided stem. The base of each specimen has a U-shaped indention. The points are chipped on both faces by pressure and there is no evidence of retouch along the lateral edges. There is no indication of basal or lateral grinding.

Sample: Three specimens

Material: One grey-colored chalcedony, two purple-colored chalcedony

Size: One unbroken specimen: Length: 5 cm., Width: 1.9 cm., Thickness: .8 cm.

Provenience: 24CB463 and 24CB459 (2)

Comparable specimens:

Arthur 1966, Type IX	Upper Yellowstone, Montana
Bentzen 1961	Powers-Yonkee Bison Trap Powder River County, Montana
Coe 1959	The Edgar Site, Cody, Wyoming
Mulloy 1943	Red Lodge Site, Montana
Mulloy 1954	McKean Site, Wyoming
Mulloy 1958	Pictograph Cave, Montana
Taylor 1964, Type VIII	Yellowstone Park, Wyoming
Wheeler 1954	Wyoming
O.J. Salo collection, Red Lodge, Montana	Clark Fork area
Vern Waples collection, Red Lodge, Montana	Clark Fork area
Davis 1956	Big Sandy Reservoir, Southwestern Wyoming
Frison 1965	Spring Creek Cave, Wyoming

Figure Twelve

Figure Twelve:

Projectile Points: Type II, "Scottsbluff," a; Type III, "Agate Basin," b; Type IV, "Angostura," c; Type V, "McKean," d; Type VI, e-f; Type VII, g-h.

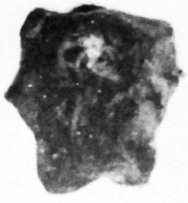
a

b

c

d

e



f

g

h

Type VII "Hanna" points (Figure 12)

The "Hanna" point is described by Wheeler (1954: 8) as:

> ... a chipped stone projectile point characterized by straight converging and incurving blade; straight or insloping and slightly barbed shoulders; and an expanding stem with shallowly notched or straight, thinned base. It is 25.0 mm. or more in total length and the stem represents from one-fourth ro one-half of the total length. The blade is 13.5 mm. or more in maximum breadth and 3.5 mm. or more in maximum thickness.... The blade and stem are either fully chipped by pressure on both faces in a random fashion, or fully chipped by pressure on one face and retouched only along the edges of the other face, or retouched only along the edges of both faces. The blade is lenticular or plano-convex in cross-section. The base is notched, or thinned, by pressure chipping on both faces from the base toward the tip. The edges of the blade are generally thin, straight, even, and sharp. The sides of the stem are usually smoothed by retouching or grinding.

The Clark Fork specimens may be described as:

> Projectile points characterized by a stemmed, expanding, indented base. The outline of the blade is both triangular and leaf shaped. The concave base gives the specimens two projecting ears on the stem. The points are pressure flaked in random fashion on both faces. One specimen shows evidence of smoothing on the lower lateral edges.

Sample: Three specimens

Material: One grey chalcedony, one brown jasper, one basalt

Size: Length: 2.9 cm. to 4.8 cm., Width: 1.5 cm. to 1.8 cm., Thickness: .3 cm. to .5 cm.

Provenience: 48PA406
24CB470
24CB467

Comparable specimens:

Arthur 1966, Type X..... Upper Yellowstone River, Mont.
Taylor 1964, Type IX..... Yellowstone Park, Wyoming
Vern Waples collection, Red Lodge, Montana.. Clark Fork area
O.J. Salo collection, Red Lodge, Montana..... Clark Fork area
Davis 1956, plate VIII, C, m-o..... Big Sandy Reservoir, Southwestern Wyoming

Coe 1959..... Edgar Site, Wyoming
Mulloy 1958..... Pictograph Cave, Montana
Frison 1962, Figure 1, b..... Wedding of the Waters Cave, Wyoming

Type VIII (Figure 13)

The Clark Fork specimens may be described as:

Corner-notched points with triangular blades. The blades have convex sides and the notches are of various sizes, but all tend to reduce the width of the base. The bases vary from straight to convex, but none are concave. The specimens are well made with nicely executed pressure flaking on both faces. There is no evidence of lateral retouch or basal grinding.

Sample: Four specimens

Material: Two jasper, one chalcedony and one "Knife River" flint

Size: Length: 3.5 cm. to 4.8 cm., Width: 2.4 cm. to 2.7 cm., Thickness .5 to .8 cm.

Provenience: 24CB475
24CB473
24CB467
Random surface find

Comparable specimens:

Mulloy 1958..... Pictograph Cave, Montana
Bliss 1950..... Birdshead Cave, Wyoming
Frison 1965..... Spring Creek Cave, Wyoming
Bentzen 1958..... Bentzen-Little Bald Mountain Site, Wyoming
O.J. Salo collection, Red Lodge, Montana..... Clark Fork area
Coe 1959..... Edgar Site, Wyoming
Grey 1963..... The Turk Burial Site, Wyoming

Type IX (Figure 13)

The Clark Fork specimens may be described as:

Corner-notched points with the bases nearly equalling the width of the blade. The blades are triangular in outline and the sides of the blade are straight. The bases are usually convex or in some cases, straight, but in no instance are they concave. The points are pressure

Figure Thirteen

Figure Thirteen:

Projectile Points: Type VIII, a-c; Type IX, d-i; Type X, j-k; Type XI, 1.

a

b

c

d

e

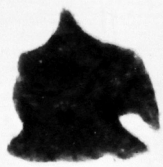
f

g

h

i

j



k

l

flaked on both faces and some show retouch along the edges of the blade. There is no evidence of basal grinding.

Sample: Nine specimens

Material: Jasper, obsidian, chalcedony, basalt and chert

Size: Length: 2.3 cm. to 4.3 cm., Width: 1.6 cm. to 2.6 cm., Thickness: .4 cm. to .7 cm.

Provenience:		
	24CB405	24CB468
	24CB457	24BH502
	24CB464	48PA407
	24CB467	Random surface finds (2)

Comparable specimens:

Arthur 1966, Type XIII	Upper Yellowstone River, Mont.
Grey 1963	The Turk Burial Site, Wyoming
Bentzen 1963	Bentzen-Little Bald Mountain Site, Wyoming
Grey 1962	Bentzen-Kaufman Cave Site, Wyoming
Frison 1962	Wedding of the Waters Cave, Wyoming
Coe 1959	The Edgar Site, Wyoming
Mulloy 1958	Pictograph Cave, Montana
Frison 1965	Spring Creek Cave, Wyoming
Vern Waples collection, Red Lodge, Montana	Clark Fork area

Type X (Figure 13)

The Clark Fork specimens may be described as:

Triangular, corner-notched points with the sides of the blade straight to slightly outcurving. The bases are convex and have been significantly reduced in width by the presence of the notches. All of the notches are thin and deep, leaving delicate ears projecting out from the lower portion of the blade. The specimens are pressure flaked on both sides. There is evidence of basal grinding on all of the points, but no lateral grinding.

Sample: Four specimens

Material: Siltstone, jasper and chalcedony

Size: One unbroken specimen is: Length: 3.9 cm., Width 2.4 cm., Thickness: .6 cm.

Provenience: 24CB405 24CB462
24CB460 48PA405

Comparable specimens:

Bliss 1950..... Birdshead Cave, Wyoming
Bentzen 1958..... Bentzen-Little Bald Mountain Site, Wyoming
Mulloy 1958..... Pictograph Cave, Montana
Vern Waples collection, Red Lodge, Montana.. Pryor Mountains, Montana

Type XI (Figure 13)

The Clark

The Clark Fork specimen may be described as:

A corner-notched point with a triangular outline. The sides of the blade are straight. The base of the specimen is notched near the middle. The three notches on the point produce four ears, two on the blade and two on the base. The specimen is pressure flaked on both faces and shows evidence of light retouch along the edges of the blade.

Sample: One specimen

Material: Tan quartzite

Size: Length: 3.3 cm., Width: 2.4 cm., Thickness .6 cm.

Provenience: 24CB468

Comparable specimens:

Arthur 1966, Type IV..... Upper Yellowstone River, Mont.
Vern Waples collection, Red Lodge, Montana.. Pryor Mountains, Montana
Coe 1959..... The Edgar Site, Wyoming

Type XII (Figure 14)

The Clark Fork specimen may be described as:

Side-notched projectile points with convex sides. The outline is more leaf shaped than triangular. The bases are shallow to deep

concave, which produces ears on the base of the specimens. The side notches are very shallow. The specimens are well made with chipping on both faces. There is no evidence of basal or lateral grinding.

Sample: Three specimens

Material: One chalcedony and two jasper

Size: Length: 2.0 cm., to 3.9 cm., Width: 1.6 to 1.8 cm., Thickness: .5 cm. to .7 cm.

Provenience: 24CB459 (2)
48PA408

Comparable specimens:

O.J. Salo collection, Red Lodge, Montana..... Clark Fork area
Vern Waples collection, Red Lodge, Montana.. Clark Fork area
Wettlanfer 1955, plate 5, 1..... Mortlach Site, Saskatchewan, Canada
Grey 1963..... The Turk Burial Site, Wyoming
Mulloy 1958..... Pictograph Cave, Montana
Mulloy 1943, Fig. 20, A.28..... Red Lodge Site, Montana

Type XIII (Figure 14)

The Clark Fork specimen may be described as:

A triangular shaped, side-notched point with straight to slightly convex sides on the blade. The notches are a wide U-shape indentions placed low on the blade. The base is shallowly concave producing sharp ears on the point. The flaking is well executed pressure work on both faces. The base shows evidence of heavy grinding.

Sample: One specimen

Material: Grey-colored chalcedony

Size: Length: 2.2 cm., Width 1.2 cm., Thickness: .3 cm.

Provenience: 24CB461 (1)

Comparable specimens:

Kehoe 1966..... Gull Lake Bison Drive, Canada
Husted 1965..... Big Horn Canyon, Montana
Mulloy 1958..... Pictograph Cave, Montana

Type XIV (Figure 14)

The Clark Fork specimen may be described as:

Triangular-shaped, side-notched points with out-curving sides on the blade. The notches are shallow U-shaped and sometimes so low on the blade that they are difficult to distinguish from corner-notches. The bases are all slightly convex. The flaking is irregular with large unflaked and rough areas on the blade. There is no evidence of basal or lateral grinding.

Sample: Five specimens

Material: One obsidian, two jasper and two chert

Size: Length: 2.5 cm. to 3.3 cm., Width: 1.7 cm. to 1.9 cm., Thickness: .4 cm. to .6 cm.

Provenience: 24CB405 (1) 24CB458 (1)
24CB463 (2) 48PA407 (1)

Comparable specimens:

Kehoe 1966..... Boarding School Bison Drive, Montana (radio-carbon date demonstrates these points had disappeared before AD 1590 $\pm$ 150)
Forbis 1962..... Old Women's Buffalo Jump, Alberta, Canada
Bliss 1950..... Birdshead Cave, Wyoming
Mulloy 1958..... Pictograph Cave, Montana

Type XV (Figure 14)

The Clark Fork specimens may be described as:

Triangular side-notched points with slightly convex sides on the blade. The notches are poorly made shallow indentions so near the base that they appear corner-notched. The bases are straight and oftentimes aslant of the outline of the point. The flaking is poorly executed with large portions of the blade unflaked. There is no evidence of basal or lateral grinding.

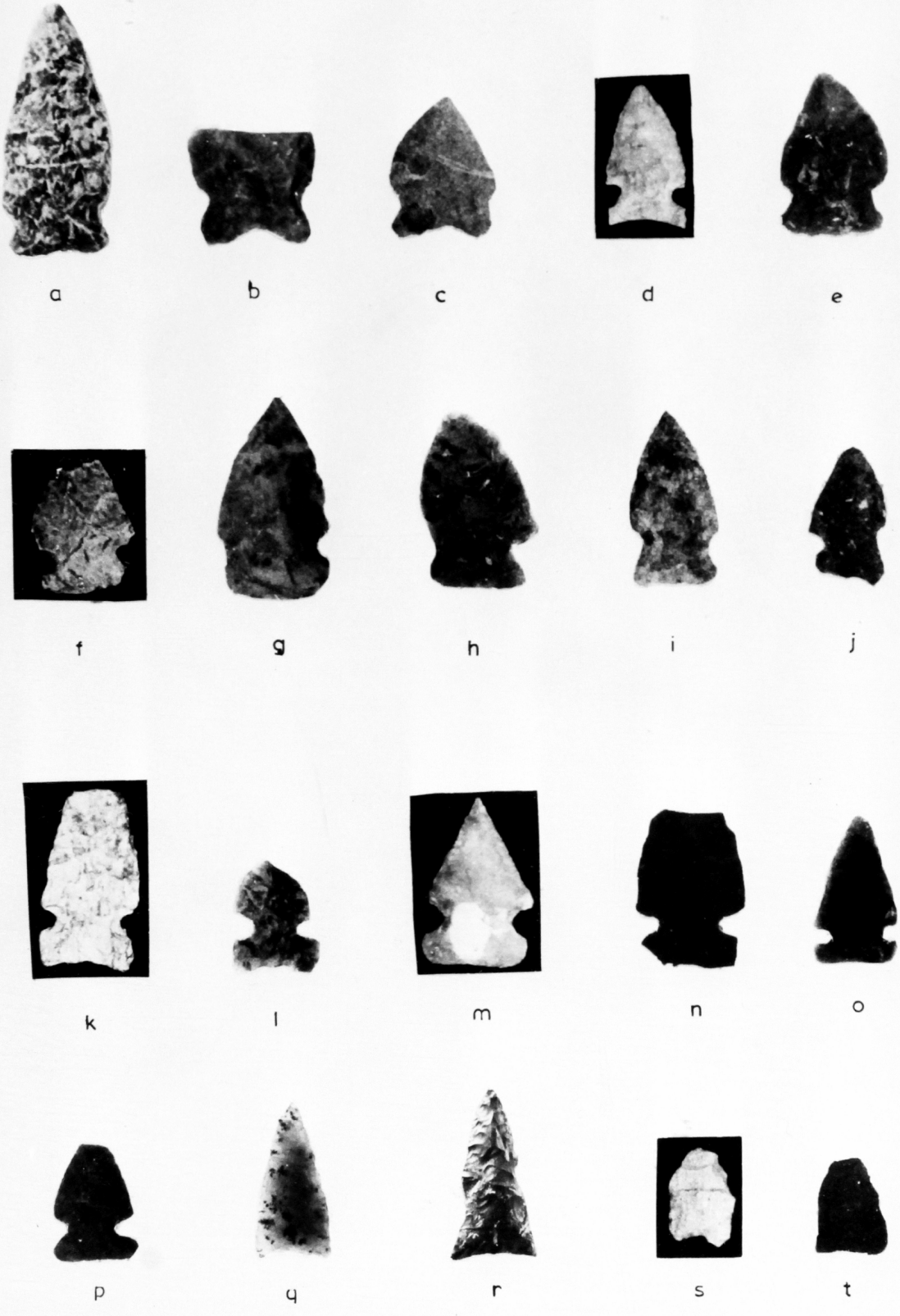
Sample: Four specimens

Material: Two jasper and two chalcedony

Figure Fourteen

Figure Fourteen:

Projectile Points: Type XII, a-c; Type XIII, d; Type XIV, e-g; Type XV, h-i; Type XVI, k-m; Type XVII, n-p; Type XVIII, o-q; Type XIX, s-t.


a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
s
t

Size: Length: 1.9 cm. to 2.6 cm., Width: 1.3 cm. to 1.5 cm., Thickness: .4 cm. to .5 cm.

Provenience: 24CB451 (2)
24CB453 (1)
24CB463 (1)

Comparable specimens:

Grey 1962..... The Bentzen-Kaufman Cave Site, Wyoming
Mulloy 1958..... Pictograph Cave, Montana
Vern Waples collection, Red Lodge, Montana.. Clark Fork area

Type XVI (Figure 14)

The Clark Fork specimens may be described as:

Triangular side-notched points with straight to slightly convex blades. The notches are deep, narrow, U-shaped indentions fairly high on the blade. The bases are all concave with the result being wide ears. The flaking is well done and covers both faces of the specimens. There is no evidence of retouch or smoothing on the bases or blades of the points.

Sample: Seven specimens

Material: Obsidian, jasper, chert, basalt and quartzite

Size: Length: 1.7 cm. to 3.3 cm., Width: 1.4 cm. to 1.7 cm., Thickness: .4 cm. to .5 cm.

Provenience: 24CB451 (1) 24CB463 (3)
24CB453 (2) 24BH503 (1)

Comparable specimens:

Mulloy 1958..... Pictograph Cave, Montana
Hurt 1957..... The Swan Creek Site, South Dakota
Hurt 1962..... Four Bear Site, South Dakota
Bliss 1950..... Birdshead Cave, Wyoming
Gebhard et al., 1964..... Horned Owl Cave, Wyoming

Type XVII (Figure 14)

The Clark Fork specimens may be described as:

Triangular side-notched points with straight sides on the blade. The notches are deep, narrow U-shaped indentions. The bases are straight. The flaking is well executed on both faces of the blade. There is little evidence of retouch or lateral or basal grinding.

Sample: Six specimens

Material: Four flint and two jasper

Size: Length: 1.9 cm. to 2.8 cm., Width: 1.4 cm. to 1.8 cm., Thickness: .4 cm. to .7 cm.

Provenience: 24CB405 (2) 24CB463 (1)
24CB458 (1) 24CB454 (2)

Comparable specimens;

Davis 1956	Big Sandy Reservoir, Southwestern Wyoming
Hurt 1962	Four Bear Site, South Dakota
Hurt 1957	The Swan Creek Site, South Dakota
Bliss 1950	Birdshead Cave, Wyoming
Bentzen 1958	Bentzen-Little Bald Mountain Site, Wyoming
Grey 1962	Bentzen-Kaufman Cave Site, Wyoming

Type XVIII (Figure 14)

The Clark Fork specimens may be described as:

Triangular un-notched points with straight-sided blades. The bases are shallowly concave. The flaking is well executed on both faces of the blades. There is no evidence of retouch or smoothing.

Sample: Two specimens

Material: One agate and one chalcedony

Size: Length: 1.7 cm. to 2.4 cm., Width: 1.3 cm. to 1.7 cm., Thickness: .4 cm. to .6 cm.

Provenience: 24CB463 (2)

Comparable specimens:

Arthur 1966, Type XXIV..... Upper Yellowstone River, Montana
Taylor 1964, Type XXI..... Yellowstone Park, Wyoming
Frison, 1962, Figure 1, r.....Wedding of the Waters Cave, Wyoming
Hurt 1962, Figure 7, d-f..... Four Bear Site, South Dakota
Vern Waples collection, Red Lodge, Montana.. Clark Fork area

Type XIX (Figure 14)

The Clark Fork specimens may be described as:

> Small triangular un-notched points with slightly convex sides. The bases are shallowly indented. The flaking is very poorly done on both faces with areas untouched. There is no evidence of retouch or grinding.

Sample: Two specimens

Material: One chert, one chalcedony

Size: Length: 1.4 cm. to 1.5 cm., Width: 1.1 cm. to 1.2 cm., Thickness: .5 cm. to .6 cm.

Provenience: 24CB454 (1)
24CB471 (1)

Comparable specimens:

Hurt 1957, Figure 17, no. 12..... The Swan Creek Site, South Dakota

Blades

The artifacts which the author feels were used for cutting are included under this heading. It is difficult to determine whether a blade was used for cutting or as a projectile point, but in all cases those artifacts labeled blades show some criteria such as size which would make them undesirable as projectile points. All of the blades are bifacially flaked and several of them show secondary retouch along the edges.

Type I (Figure 15)

The Clark Fork specimens may be described as:

Ranging in outline from piriform to ovoid. The convex sides constrict to the pointed tip and round to the convex base. The widest part of the specimens is from one-third to one-half of the way up from the base. The sides have been shaped by percussion with the edges showing pressure retouch.

Sample: Three specimens

Material: Basalt, chalcedony and quartzite

Size: Length: 4.3 cm. to 5.5 cm., Width: 2.7 cm. to 3.6 cm., Thickness: .6 cm. to 1.1 cm.

Provenience: 24CB459 (1)
24CB463 (1)
24CB465 (1)

These blades have been found throughout Montana and adjoining areas. They seem to have been used during all the prehistoric period.

Type II (Figure 15)

The Clark Fork specimens may be described as:

Long, slender lanceolate blades with rounded points. The sides are always convex. The blades are well flaked and one of them shows a medial ridge running lengthwise.

Sample: Three specimens

Material: Chert and siltstone

Size: Length 10.5 cm. to 11.3 cm., Width: 3.6 cm. to 4.0 cm., Thickness: 1.0 cm. to 1.1 cm.

Provenience: 24CB463 (2)
48PA408 (1)

Type III (Figure 16)

The Clark Fork specimens may be described as:

Figure Fifteen

Figure Fifteen:

Blades: Type I, a-c; Type II, d-f.

a

b

c

d

e

f

An asymmetrical ovoid shaped blade. One side is convex and the other nearly flat. Both ends are pointed. The convex side of the blade shows retouch, while the flat side has been smoothed. This could indicate hafting.

Sample: One specimen

Material: Grey-colored chalcedony

Size: Length: 8.1 cm., Width: 4.0 cm., Thickness: 1.1 cm.

Provenience: 24CB463 (1)

Type IV (Figure 16)

The Clark Fork specimen may be described as:

Triangular-shaped blades resembling an isosceles triangle. The sides and base are straight. The specimens appear to have been knocked out by percussion and then pressure retouched along the edges.

Sample: Five specimens

Material: Basalt, chert, and jasper

Size: Length: 3.1 cm. to 5.7 cm., Width: 2.2 cm. to 3.9 cm., Thickness: .6 cm. to .8 cm.

Provenience: 24CB454 (1) 24CB463 (2)
24CB459 (1) 48PA406 (1)

Forbis (1955) found a triangular blade in the Folsom layer at the McHaffie Site, which indicates that the form has changed little through time.

Type V (Figure 16)

The Clark Fork specimens may be described as:

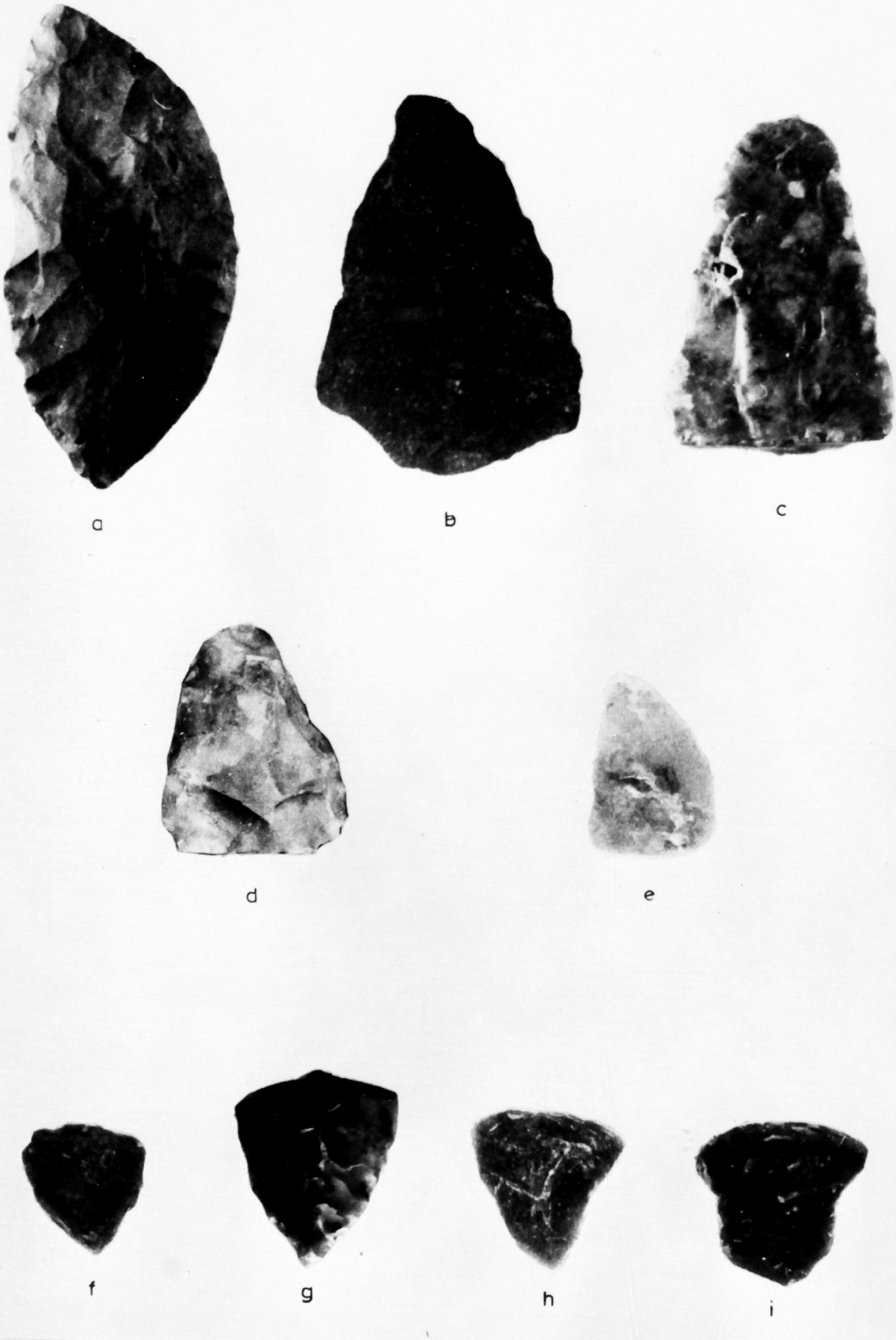
Having a right angle triangle outline. The blades have a straight base and one straight side forming a right angle at the base. The third side is convex. The specimens are bifacially flaked by pressure work.

Sample: Two specimens

Figure Sixteen

Figure Sixteen:

Blades: Type III, a; Type IV, c-d; Type V, e.
Plano-convex Scrapers: Type I, f-i.


a
b
c
d
e
f
g
h
i

Material: Chert

Size: Length: 3.0 cm. and 4.1 cm., Width: 1.9 cm. and 2.6 cm., Thickness: .5 cm. and .7 cm.

Provenience: 24CB405 (2)

Plano-convex Scrapers

All of the scrapers reported are unifacially flaked and this is the most importnat criteria for labeling them as scrapers. The plano-convex variety, or as they are commonly called "turtle back" scrapers, range from a triangle to piriform to ovoid in shape. The primary function of scrapers was the cleaning of flesh and hair from hides to prepare them for tanning. The specimens often show retouch, especially along the wide end of the tool.

Type I (Figure 16)

The Clark Fork specimens may be described as:

> Having a triangular outline with three convex sides on each scraper. The two corners on the scraping end are rounded while the back corner is pointed. There is a steep face along the scraping end which shows extensive retouch.

Sample: Four specimens

Material: Two red jasper and two "Knife River" flint

Size: Length: 2.4 cm. to 3.6 cm., Width: 2.1 cm. to 3.1 cm., Thickness: .6 cm. to .8 cm.

Provenience: 24CB452 (1)
24CB458 (1)
24CB463 (2)

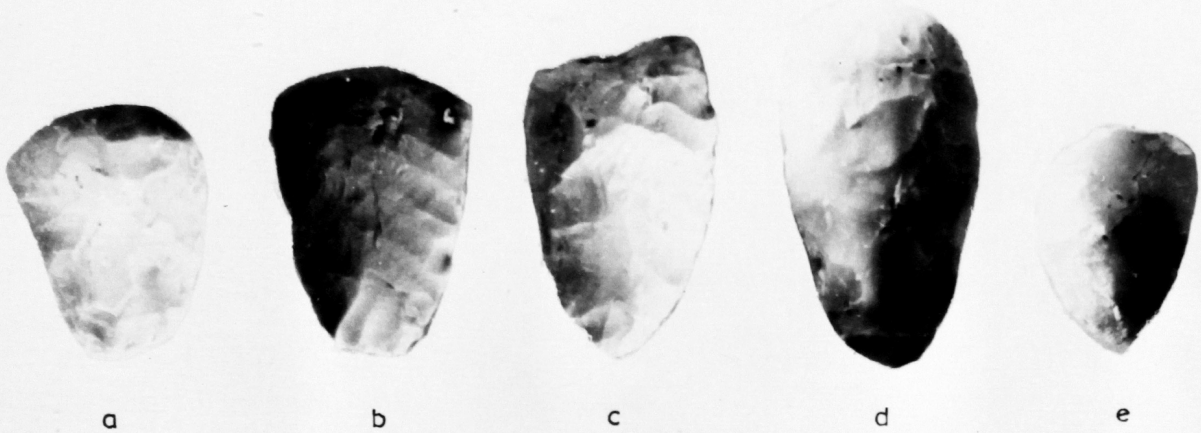
Type II (Figure 17)

The Clark Fork specimens may be described as:

Figure Seventeen

Figure Seventeen:

Plano-convex Scrapers: Type II, a-o.



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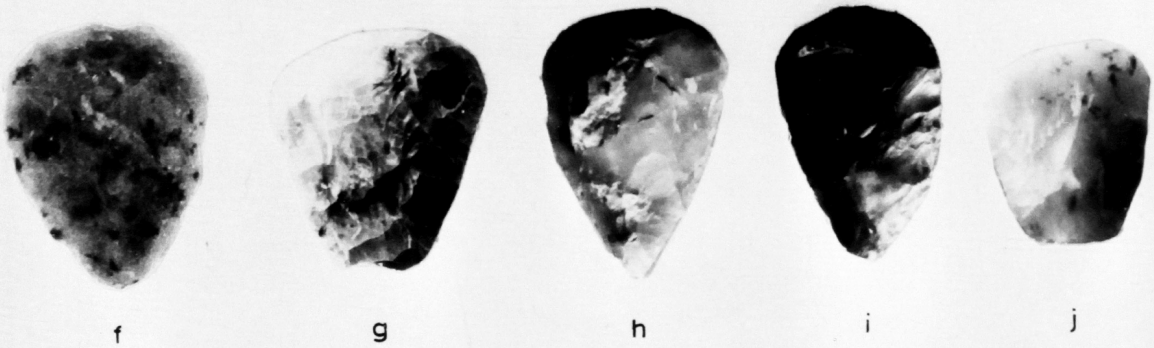

f g h i j

k l m n o

Ranging from piriform to ovoid in outline. All of the sides are convex. The edges slope up to a median ridge running longitudinally with the steepest face on the scraping end of the specimens. All the specimens are unifacially flaked and most show retouch along the working edge.

Sample: Twenty-three specimens

Material: Chert, agate, jasper, chalcedony and basalt

Size: Length: 3.8 cm. average, Width: 2.8 cm. average, Thickness: .9 cm. average

Provenience: 24CB463 (17) 48PA405 (1)
24CB475 (2) 48PA406 (2)
24BH505 (1)

Type III (Figure 18)

The Clark Fork specimens may be described as:

Having a non-diagnostic shape; the only uniform thing about them is that the scraping edge shows retouch and is usually convex. The other sides may be straight, convex or even concave. The outline varies from piriform to circular to nearly square.

Sample: Seven specimens

Material: Jasper, chalcedony and chert

Size: Length: 2.3 cm. to 3.9 cm., Width: 1.8 cm. to 5.1 cm., Thickness: .6 cm. to 1.2 cm.

Provenience: 24CB405 (2) 24CB468 (1)
24CB455 (1) 24BH503 (1)
24CB463 (2)

Side Scrapers

Side scrapers are in many ways similar to plano-convex scrapers. The main difference is that they are usually larger and bear evidence of retouch along the sides. Their function was undoubtedly scraping hides, perhaps doing some of the more crude work while plano-convex scrapers were used for finer

Figure Eighteen

Figure Eighteen:

Plano-convex scrapers: Type III, a-g.
Side scrapers: Type I, h-k.


a
b
c
d
e
f
g
h
i
j
k

work.

Type I (Figure 18)

The Clark Fork specimens may be described as:

Scrapers which range in outline from piriform to ovoid. The specimens appear to have been roughed out by percussion and show secondary retouch along both sides of pressure work.

Sample: Four specimens

Material: Basalt, chert, and jasper.

Size: Length 5.4 cm. to 7.1 cm., Width: 2.2 cm. to 4.1 cm., Thickness: 1.1 cm. to 2.0 cm.

Provenience: 24CB462 (1)
24CB463 (2)
24BH502 (1)

Type II (Figure 19)

The Clark Fork specimens may be described as:

Side scrapers with an elongated ovoid outline. The sides are straight to convex and run nearly parallel for the length of the scrapers. Each specimen had a longitudinal medial ridge and the edges of each side show retouch.

Sample: Four specimens

Material: Quartzite, siltstone and chalcedony

Size: Length: 6.1 cm. to 12.0 cm., Width: 3.4 cm. to 3.7 cm., Thickness: 1.0 cm. to 2.5 cm.

Provenience: 24CB463 (4)

Type III (Figure 19)

The Clark Fork specimens may be described as:

Side scrapers made from unshaped flakes and spalls. These specimens might be more properly labelled flake scrapers because each is merely a flake with pressure retouch along the edges of

Figure Nineteen

Figure Nineteen:

Side Scrapers: Type **II**, a-d; Type **III**, e-f.

a

b

c

d

e

f

of one side.

Sample: Three specimens

Material: Basalt, chert and jasper

Size: Length: 4.6 cm. to 8.2 cm., Width: 2.7 cm. to 6.2 cm., Thickness: 2.1 cm. to 3.3 cm.

Provenience: 24CB405 (1)
24CB459 (1)
24CB467 (1)

Drills

Only two drills were found during the survey. Both of these have circular tops with narrow shafts protruding from one side. One specimen is made on a very thin flake. Both are bifacially flaked.

Sample: Two specimens

Material: Basalt and quartzite

Size: Length: 3.9 cm. and 4.1 cm., Width: 2.4 cm. and 2.9 cm., Thickness: .7 cm., and .8 cm.

Provenience: 24CB463
48PA408

Gravers

Only two specimens which might be laveled gravers were found during the survey. One of these has been made from a plano-convex scraper and the other from a broken corner-notched projectile point. On both specimens a small protruding teat has been made by removal of small pressure flakes to form a very sharp point.

Sample: Two specimens

Material: Jasper

Size: Length of teat: .3 cm.

Provenience: 24CB405 (2)

Cores

Six multi-faced cores were found during the survey. Each of these shows evidence of prepared striking platforms and each remains in the characteristic diamond shape as a result of use from both ends.

Sample: Six specimens

Material: Jasper, obsidian, siltstone and chert

Provenience: 24CB405 (2) 24CB461 (1)
24CB459 (2) 48PA406 (1)

Ground Stone Artifacts

Within the category of ground stone are five stone mauls, one tanning stone, one net weight and one fragment of a pipe. Ground stone refers to those artifacts which were abraded, pecked, or carved into the desirable shape. The pipe fragment is in this category instead of a separate one for polished stone, because the author feels that polishing stone is an elaborated form of abrasion.

Stone Mauls

The term stone maul refers to the stream-folled cobbles which have

Figure Twenty

Figure Twenty:

Stone Mauls: Type I, a-b.

a

b

had a groove pecked into them around their medial circumference. It is assumed that this groove was to facilitate the hafting process.

Type I (Figure 21)

The Clark Fork specimens may be described as:

> Large stream-rolled stones with a groove pecked three-quarters of the way around the medial circumference. Two of these specimens have been flattened on both ends from use and one had only been flattened on the lower or larger end.

Sample: Three specimens

Material: Fine grained granitic stone

Size: Length: 12.0 cm. to 15.4 cm.
Width: 9.0 cm. to 11.0 cm.
Width of groove: 2.5 cm. to 2.8 cm.
Circumference: 26.0 cm. to 36.0 cm.
Circumference of groove: 24.1 cm. to 35.2 cm.
Weight: 1380 grams to 2650.9 grams

Provenience: 24CB463 (3)

Type II (Figures 20-21)

The Clark Fork specimen may be described as:

> A large ovoid-shaped rock with a groove pecked fully around the specimen. Both ends show evidence of extensive use.

Sample: One specimen

Material: Banded granitic stone

Size: Length: 13.0 cm.
Width: 12.4 cm.
Circumference: 30.7 cm.
Circumference of the groove: 28.5 cm.
Weight: 1887 grams

Tanning Stone (Figure 22)

The specimen is a hard stream-rolled rock. It is nearly rectangular

in outline, with one edge rubbed smooth. This smooth surface has been rubbed against a finer surface, because there are no striations on it. It is possible that this stone was used in hide tanning.

Sample: One specimen

Material: Granitic stone

Size: Length: 18.5 cm.
Width: 9.2 cm.

Provenience: 24CB463

Net Weight (Figure 22)

One specimen which might be labeled a net weight is recorded from the survey. The specimen is a small stone with a groove cut around the medial circumference. The specimen is impregnanted with bits of mud and the stone is discolored indicating that it may have been in a river bed. The weight was found near the Clark Fork River in a dry channel where the river used to flow.

Sample: One specimen

Material: Carves with metal, possibly steatite

Size: Length: 5.6 cm.
Width: 4.2 cm.
Circumference: 12.5 cm.
Circumference of groove: 12.0 cm.
Weight: 108.4 grams

Provenience: 24CB463

Pipe

One broken piece of a pipe was found during the survey. The pipe is

Figure Twenty-One

Figure Twenty-One:

Stone Mauls: Type I, a; Type II, b.

a

b

too fragmentary to determine much about it. It does show evidence of having been burned on the inside.

Sample: One broken specimen

Material: Dr. Robert M. Weidman of the Geology Department at the University of Montana examined the pipe under a binocular microscope and in thin section under a petrographic microscope. His conclusion was that the pipe could be either ceramic material or carved from fine-grained hornfels. The material contains an abundance of biotite which is fairly well oriented to the wall of the pipe. This could be the result of biotite rich clay being molded.

Size: Unknown

Provenience: 24CB466

Beads

Twenty-three small seed beads were found at 24CB451 in the sandy deposits. They were blue, white and pink in color. One other small bead was found on a copper wire ring. The bead is blue, and is not symmetrical in shape, but rather like a cylindrical tube with the ends cut. The copper wire is too small to fit anyone except a child.

Sample: Twenty-four specimens

Material: Ceramic glass

Provenience: 24CB451 (23)
24CB465 (1)

Figure Twenty-Two

Figure Twenty-Two

Tanning Stone: a; Net Weight: b.

a

b

CONCLUSIONS

Introduction

The conclusions in this thesis are based on the information gathered from the surface collections in the Clark Fork area. It is very difficult to make any concrete assumptions from surface finds, and all that can really be done is to compare the artifact assemblage with other similar artifact assemblages which have been excavated from stratified sites or with other surface collections. This becomes even more difficult when one realizes that only four or five sites have been excavated in Southeastern Montana, and to compare artifact assemblages, one has to go to more removed areas.

Fortunately, the Clark Fork can be compared to Pictograph Cave in Montana and Birdshead and Wedding of the Waters Cave in Northern Wyoming, and to various surface collections (Yellowstone National Park, Taylor 1964; Upper Yellowstone River, Arthur 1966; Yellowtail Dam, Husted 1965).

Paleo-Indian Period

During the Paleo-Indian Period the peoples were nomadic big game hunters, who wandered from one area to another in search of large species of mammals now extinct. Three basic cultures are recognized in the Paleo-Indian Period by Stephenson (1965: 690). These are called the Llano Culture, the Lindenmeier Culture, and the Plano Culture.

The Llano Culture includes Clovis points, associated artifacts and a fauna containing elephants. Dates on the Llano Culture vary, but most

data indicates an antiquity of between roughly 9,000 and 13,000 years ago (Mason 1962:230). There is no absolute evidence of Paleo-Indians which are known to be older than the Llano Culture. Sandia Cave, New Mexico, and Tule Springs, Nevada, are thought to be older than the Llano Culture, but the evidence is not wholly convincing. In any event, there are no reported archaeological remains in Montana that are thought to be older than the Llano Culture. Although no stratified sites have been found with Clovis points in Montana, there have been several surface finds (Arthur 1966; Taylor 1960) and undoubtedly Clovis hunters lived in and traveled through the state.

The Lindenmeier Culture, named after an assemblage of chipped stone artifacts from the Lindenmeier Site in Colorado, includes Folsom points, cutting tools, scraping tools, and fauna that contained forms of bison now extinct. Radiocarbon dates on Folsom material tend to cluster around 10,000 years ago (Wormington 1957: 40). There is some temporal overlapping of Folsom and Clovis, but in sites where both are found, Folsom points are stratigraphically above Clovis points. Folsom points exhibit fluting as well as the beginning of parallel ribbon flaking. Folsom can be viewed as linking the fluted tradition with the later parallel ribbon flaking tradition (Mason 1962: 230). Montana has Folsom points from the MacHaffie Site (Forbis and Sperry 1952) and Folsom points have been found fairly frequently on the surface in Southeastern Montana. A Folsom point was recovered in the upper eight to ten inches of soil by the crew excavating the basement for the new Post Office Building in Gardiner, Montana, at the northern edge of Yellowstone Park

(Jasmann 1963: 12, 18). I have seen Folsom points in several different collections in Southeastern Montana; Mr. Nick Becker of Bridger, Montana, the museum at Pryor, Montana, and Mr. Carl Barz of Billings, Montana, possess Folsom points which they say were found in Southeastern Montana. The Folsom point found on Pat O'Hara Creek indicates that Folsom hunters were in the Clark Fork area.

The Plano Culture includes Scottsbluff, Eden, Allen, Agate Basin, Milnesand and similar points which are sometimes associated with extinct forms of bison. The Plano Culture spans that time on the Paleo-Indian continuum from 9,500 to 6,000 years ago (Mason 1962: 321). Although these dates overlap with Folsom and Clovis dates, Plano Culture is found stratigraphically above Folsom and Clovis in sites where they both occur. All of the characteristic Plano Culture points have been found in Montana, and at the Mac Haffie Site, Scottsbluff was found overlying Folsom (Forbis and Sperry 1952). The Scottsbluff layer at the MacHaffie Site has a date of 8,100 $\pm$ 300 years ago and this falls within the time span for the Plano Culture (Forbis 1962: 252). Scottsbluff and Agate Basin points were found in the Clark Fork area. During the period of the Plano Culture the extinction of mammoths and bison antiquus occurred and the rise of modern bison started.

Although a variety of projectile point forms exist in the Paleo-Indian Period, it seems probably that a single lifeway is represented — one oriented toward big game hunting, even though the animal species hunted changed through time. Perhaps, the Paleo-Indians continued longer where the game

they hunted was able to survive.

At present there is scanty evidence of seed or other plant gathering recognized in Paleo-Indian sites, and it seems reasonable to view Paleo-Indians as small bands of wandering hunters, who were constantly in search of game. The question, then, is how and what did the Paleo-Indians hunt in the Clark Fork area.

A recent Mammoth discovery in Southwestern Montana has a radio-carbon date of 8,800 $\pm$ 300 years ago. This represents the most recent date known for a mammoth throughout the Northern Plains (Conner, unpublished manuscript). As far as is known now, there is no lithic material associated with this mammoth, but in my opinion it is only a matter of time until a mammoth and artifacts characteristic of the Llano Culture are found together in Montana.

With the extinction of the mammoth, several forms of bison became the food staple in Paleo-Indian Cultures. Bison would supply large quantities of meat as well as hide and other body parts. Small groups of bison could have been ambushed as they came to water and in many instances the Paleo-Indians' campsites were situated in such asposition so that they had a good view of watering spots (Egan and Agogino 1965: 37).

Perhaps the well-watered areas around the two Pleistocene lakes (Lakes Musselshell and Glendive) in Southeastern Montana would have been ideal havens for bison and likewise Paleo-Indian hunters. Unfortunately, little work has been done with the reconstruction of the temporal and spatial aspects of

these lakes.

The bison, being a gregarious animal, travels and grazes in herds. Mass slaughter by drives was known to Paleo-Indians. At the Simonsen Site in Iowa, bison were driven over a cliff (Agogino and Frankforter 1960: 414) and at the Olsen-Chubbock Site in Colorado, they were driven into an arroyo (Wheat 1966).

The Folsom, Scottsbluff, Agate Basin and Angostura points found in the Clark Fork indicate that Paleo-Indian hunters were living in or at least traveling through the valley. Excavation at 24CB405 could reveal some type of Paleo-Indian kill site.

Meso-Indian Period

Some authors call this period the Middle Prehistoric Period (Mulloy 1958), the Forager Period (Malouf 1961) or the Archaic (Stephenson 1965); most authors are inclined to divide it into two halves — an early and a late. Likewise, it is divided in this discussion into the Early Meso-Indian Period and the Late Meso-Indian Period.

The Early Meso-Indian Period is characterized by the McKean-Duncan-Hanna series of projectile points and the dates are between 4,500 years ago to 2,000 years ago. The Late Meso-Indian Period is characterized by small corner-notched points and Besant points and dates from 2,000 years ago to A.D. 500 (Wormington and Forbis 1965: 192).

Meso-Indian sites in Wyoming commonly have milling stones and it is inferred that seeds, berries and roots were utilized. Also in Wyoming there

is a reliance on small game animals and from this is inferred a "forager" lifeway. This "forager" lifeway probably spread eastward into Wyoming from the Great Basin, but it does not seem to have wholly overspread the Northwestern Plains.

In Montana, every site reported which falls within the Meso-Indian Period shows a primary dependence on big game hunting. There are more bison than any other animal represented in the faunal remains at all levels of Pictograph Cave (Mulloy 1958: 226-229). Although there are some grinding tools in Meso-Indian sites on the Northern Plains (e.g. Pictograph Cave), they are never in significant enough numbers to overshadow hunting tools. Arthur (1966: 170). suggests a seasonal transhumance during the Meso-Indian Period with the peoples exploiting different food crops which matured at different elevations. The people would spend the winters in the valleys and the summers in the mountains. He points out that the sites with grinding tools are usually at low elevations and the sites at higher elevations have a hunting tool assemblage. The Meso-Indian sites in the Clark Fork are larger along the valley bottoms and smaller at higher elevations, which would tend to support this seasonal transhumance.

The lifeway represented is one of central based wanderers which are defined as a community that spends part of the year wandering and the rest at a settlement or "central base" to which it may or may not return in subsequent years (Beardsley et al 1956: 138). Perhaps Pictograph Cave represents a "central base."

Hunting methods employed by the peoples of the Meso-Indian Period are not fully understood. The Powers-Yonkee Site in south central Montana (Bentzen 1962) indicates that some type of corral method was employed in capturing bison during the Early Meso-Indian Period. McKean-variant points were found in association with bison bones which have been identified as being intermediate between Bison bison and Bison antiquus. A charcoal sample found in association with the bison bones and the artifacts produced a date of 4450 $\pm$ 125 years ago.

The buffalo jump was employed by hunters during the latter part of the Meso-Indian Period. The Billings Bison Trap near Billings, Montana, (Mulloy 1958) is an example. An abundance of Besant points were found in the lowest level of the Billings Trap.

It is interesting to speculate why the buffalo jump was ever started. Possibly it was because there was no wood available for the corrals or pounds in the open plains (Wormington and Forbis 1965: 193). Once Meso-Indian hunters could employ mass slaughter without the use of corrals, they could move out into the plains.

There seems to be evidence that the stone circles commonly called "tipi rings" started in the Meso-Indian Period (Mulloy 1954a). Probably, though, they did not reach their full expression until the later Neo-Indian Period.

On the basis of the artifacts found (McKean, Duncan, Hanna), there are two sites in the Clark Fork area which I have assigned to the Meso-Indian Period. These two sites are 24CB459 and 48PA408. Both of these sites are

large with lithic material scattered over acres. Both are located in the valley bottom on long terraces which is in accordance with the seasonal transhumance discussed earlier.

Neo-Indian Period

In the Neo-Indian Period, the Northern Plains were inhabited by large herds of bison. Hunting these bison were bands of nomadic Indians. The most successful method of hunting was the buffalo jump. Moss (1951: 28) says:

> For primitive hunters such as the Plains Indians, certain unique characteristics of the bison made him an ideal source of food. In the first place, although he was fast and could only be killed instantly by being struck in a relatively small area behind and below his left shoulder, his mental peculiarities provided hunters with a definite advantage. For defense, the bison relied on his numbers rather than on his individual fighting qualities. Instead of standing his ground and fighting like the grizzly bear, or using the scatter maneuver of the antelope, the bison, when surprised, tended to consolidate his herd and flee in a straight line into the wind if possible. He could readily have routed his pursuers by charging at them en masse, but the only defense he conceived of was to escape from them at the greatest possible speed.

The buffalo jump was a highly co-ordinated group effort. Correct wind factors and precise timing were required for a successful jump. If the hunters could predict the flight of the bison into the wind, all they needed was a drop-off in the path of the fleeing herd to make the hunt a success.

Bison supplied large quantities of meat, hide and horn which could be utilized. A large, male bison often weighed over 2,000 pounds. The thick layers of bone in most buffalo jumps indicate that thousands of buffalo were left to spoil and rot. Since it is thought that most jumps were used in the

late autumn, the Indians were probably only interested in getting enough meat, hides and horn to survive the winter (Wormington and Forbis 1965: 196).

Environmental conditions must have played a large role in the habits of the bison and subsequently in the habits of the Indians. Climatic conditions would expand or narrow the bison's range and hunters would be able to move into new ranges or be barred from former ones. It is, therefore, important to understand the conditions which affected the range of the bison. Bison required water to support the vegetation he fed on and for his own consumption. Extreme aridity and deficient summer rain would bring about his disappearance from an area just as rapidly as slaughter by the white man (Moss 1951: 31-32).

The fact that most of the Clark Fork area is in a rain shadow of the Beartooth Mountains would have made it an undesirable habitat for large herds if bison. No buffalo jumps were found during the survey, although the Neo-Indians in the Clark Fork area were probably hunting bison and utilizing the bison drive. It is possible that they took an annual trip in the Autumn to the Yellowstone River or some other area which had larger herds of bison.

Other big mammals, small mammals, fish and plants must have been used to supplement the diet of the Neo-Indians in the Clark Fork. The net weight found along the river suggests fishing or at least the use of nets. The nets may have been used to capture rabbits or other small mammals, but no matter what the use of the nets, they suggest outside influence from the Shoshoni peoples. Probably other food sources were insignificant in com-

parison to the bison, but they may have played a greater role than we credit them.

For the most part, the Neo-Indians lived in conical-shaped tipis with bison hide covers. These dwellings were easily collapsed and hauled on a dog travois.

The tipi ring site in the Clark Fork Canyon had smaller stone hearths within the rings. Some of these hearths still had bits of charcoal in them. It is reasonable to assume that these rings are associated with a dwelling. Furthermore, since the hearths are inside the rings, the site was probably occupied in the winter. The fire was inside for warmth and cooking.

The pictograph and petroglyph sites found in the Clark Fork area are undoubtedly associated with the Neo-Indian period. It seems unlikely that any paint pigment which is exposed to weathering would survive more than four or five hundred years.

A successful and fruitful life for the Neo-Indian depended on the success of the buffalo jump. An adequate food supply gave Neo-Indians more leisure time to develop their technology and ideology. Larger groups of peoples were able to live together and campsites in the Clark Fork area of Neo-Indian age are larger than sites of Meso-Indian and Paleo-Indian.

The buffalo jump would have required coordination and would have only been possible with a leader. Such a leader may have been famed for his hunting prowess or perhaps for his ability to organize a group of hunters.

Since the Neo-Indians were foot nomads, there was probably little

chance of acquisition of large territories. The problems encountered in transportation and defense against trespassers in a large area would be too great for foot nomads. The acquisition of large territories came after the arrival of the horse and the gun.

By 1690 A.D. to 1700 A.D., the Shoshonis on the Snake River south of Yellowstone National Park had horses. By 1730 A.D. horse riders were on the middle Yellowstone River north of the Park and in all areas of the Plains by 1770 A.D. (Haines 1938; Hoffman 1961: 100).

Throughout the Neo-Indian Period, the Clark Fork was probably inhabited by Shoshonean peoples. The Shoshoni anciently appear to have been centered in a large area in southern Nevada and adjoining portions of Utah, California, and Arizona (Malouf 1967: 13). From this homeland in the Great Basin, small bands moved northward in search of better grounds for collecting plants, animals and their general livelihood. In regard to this migration, Malouf (1967: 13) says:

> Gradually, they passed through western Utah and eastern Nevada into southern Idaho. From here they continued their slow but constant migration eastward into Wyoming while others went northward up the Snake River system into southwestern Montana. The migration, it might be noted, was not one of great hordes of people, but was on a small scale with small groups moving into adjoining valleys in the Great Basin and intermountain area. Eventually, some of those who went into Wyoming broke away and became the Comanche. The route into Montana for others, it seems to me, was up the North Fork of the Snake River, and through Targhee Pass and Raynolds Pass into the Madison and Jefferson river systems. This movement seems to have occurred before horses entered Shoshoni life.

Shoshonis could have entered the Clark Fork area from the Yellowstone River to the west or they could have come into the Clark Fork from the

Wind River area in Northern Wyoming. These Shoshoni brought pottery, steatite vessels, milling stones and other artifacts into the area.

The spread of side-notched points, often made of obsidian, is sometimes credited to the rapid expansion of Shoshonean peoples into the Northwestern Plains (Taylor 1964: 195). These points are found on the surface at several sites in the Clark Fork area.

When the artifacts found in the Clark Fork are compared with artifacts from archaeological horizons in the Great Basin and the Northwestern Plains, it appears that cultural influences moved back and forth across the region. There is no evidence that the Clark Fork was ever the location of a cultural climax. It is more likely that the significance of the archaeological remains in the Clark Fork is in its role as a transitional area between the Northwestern Plains and the Great Basin. The artifacts recovered would indicate the Clark Fork was more often utilized by the hunting peoples from the Northwestern Plains than it was by the gathering peoples from the Great Basin. There were bison in many parts of Southeastern Montana and the High Plains equestrian hunting culture was spread as a thick overlay upon the native Shoshonean culture (Steward 1940: 475; Kroeber 1939: 82).

Ethnological and archaeological evidence suggests that in earlier times, Southeastern Montana and Western Wyoming were culturally an arm of the Great Basin (Steward 1940: 450). In the still more remote past, the hunters who killed bison with Scottsbluff points at the Horner Site in Northeastern Wyoming were related, in technology at least, to the big game hunters of the

Plains and to those in the Clark Fork at 24CB405. Thus the cultural position of the Clark Fork appears to have fluctuated. The significance of the area seems primarily to lie in its peripheral position to both the Northwestern Plains and the Great Basin and in its role as an avenue of contact between the two culture areas.

Influences from the Plateau appear to be absent in the artifact assemblage from the Clark Fork. In view of the fact that the archaeological survey in Yellowstone National Park (Taylor 1964) revealed Plateau influence, it is significant that the Clark Fork has little.

There appears to have been continuous occupation of the Clark Fork Valley from 10,000 years ago to the present. Mulloy (1958:219-222) and other archaeologists have postulated a human hiatus between 5,000 and 7,000 years ago. I think that too few sites have been excavated to know whether the hiatus existed or not. I believe that future excavation will span the hiatus and fill the blank in the archaeological continuum.

Possibly errors in carbon dating from fluctuations in atmospheric carbon 14 are responsible for the postulated hiatus.

> If the fluctuation of atmospheric carbon 14 at the beginning of the hiatus alternated with the known fluctuation at the conclusion of the hiatus, the appearance of a time gap would be created when, in fact, if one existed it would be considerably shorter than indicated by present carbon dating techniques (Conner n.d. unpublished manuscript).

In my opinion, the size of the populations living in the Clark Fork Valley was highly variable. Some of the peoples may have been moving through the valley. The river could have been used for canoe travel, although neither his-

toric Plains or Basin peoples are known to have used canoes. Foot and horse travel would not have been difficult. The location of the Clark Fork would have made it desirable for a north-south travel route.

Undoubtedly the Clark Fork supported some permanent populations. With the mountains on both sides, these peoples probably spent their summers in the mountains and their winters in the valley. After the autumn bison hunt, they would have had enough food to live in large villages. As the meat supply ran low in the spring, the peoples would have left their winter encampment in search of food. Probably they divided into smaller hunting bands in the spring.

In summary, the Clark Fork area has revealed a number of what are essentially surface sites. They are workshop and occupation sites of migratory hunting and gathering peoples who made stops in the Clark Fork to avail themselves of the water supply and other resources. Some of them did a little hunting and possibly spent the winter months along the river. The artifact assemblage indicates that peoples lived in the valley from recent times to the Paleo-Indian Period, as far back as 10,000 years or more.

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