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Two High Altitude Game Trap Sites in Montana

Bonnie Jean Hogan

The University of Montana

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TWO HIGH ALTITUDE GAME TRAP SITES IN MONTANA

By

Bonnie Herda Hogan

B.A., University of Montana, 1969

Presented in partial fulfillment of
the requirements for the degree of

Master of Arts

UNIVERSITY OF MONTANA

1974

Approved by:

[Signatures]

Chairman, Board of Examiners

Dean, Graduate School

Date
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The staff at the Yellowstone National Park Museum were most helpful to me in attaining ethnographic data for this report.
Last, I thank my husband, Steve, who enthusiastically accompanied me into the field and has been a source of encouragement since this project's beginning.
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CHAPTER I

INTRODUCTION

Archaeological field work and research into high altitude prehistory in Montana has come to the fore only recently. Although authors have repeatedly stressed the archaeological value of sites found to exist at high elevations, most of the work done thus far in Montana has been in the form of surveys, with no specific emphasis on site types. I, therefore, chose as my thesis topic, high altitude, aboriginal game traps. By means of field work during the summer of 1973, I gathered data and recorded one game trap located west of the Continental Divide in the Bitterroot Mountains, and one game trap found east of the Continental Divide in the Castle Mountains. In this way, I hoped to gain a good perspective of aboriginal, mountain game trapping from Montana's two main geographical provinces, and apply it toward my paper.

Hypotheses tested were: (1) the two trap sites were aboriginal; (2) mountain topography played a vital part in selection of the trap locales, and success in finally trapping the game; (3) the temporal aspect of the sites can be determined; (4) occupation of the sites by specific cultural groups may be ascertained; (5) faunal utilization in relation to the
traps is decipherable; (6) the two trap sites are each unique but in many ways comparable; and (7) the sites offer valuable insight into the archaeology of Montana, specifically in the subalpine zone. Results of the testing of these hypotheses are included within my paper.

The flora and fauna in various ecological zones of the Bitterroots and the Castles were exploited during different seasons of the year by many different aboriginal groups. The Bitterroot and Castle Mountains share similarities in flora and fauna, but are different in location, geology, glaciation effect, history, climate and somewhat in topographical features. Through experience, those people who depended upon the resources of the Castles and Bitterroots gained a keen knowledge of mountain topography and the foods available. A general understanding of the Bitterroot Mountain and Castle Mountain areas was invaluable to native groups of the areas, just as it is to this paper. (Figure 1).
FIGURE 1. Map of western Montana and adjacent areas from Fenneman (1931). Bitterroot Mountains and Castle Mountains are outlined.
CHAPTER II

GENERAL DESCRIPTION OF THE BITTERROOT MOUNTAINS AND THE CASTLE MOUNTAINS

Topography

Western Montana is described by Alden (1953: 4-5) as a series of irregular crests of a succession of practically continuous mountain ranges with intervening valleys. Within this series lies the Bitterroot Mountains, or the Bitterroot Range. Lindgren (1904:13) preferred to give only that part of the range running north-south and lying south of Missoula and forming the west side of the Bitterroot Valley the distinct name of "Bitterroot" because "it is extremely well defined topographically." However, for the purpose of this paper I will agree with Goode (1904:14) and Alden (1953:5) who have contended that the range extends along the Montana-Idaho border from Nez Perce Pass northward and northwestward to a point east of Pend d'Oreille Lake. "The whole of the Bitterroot Mountain area lies in the watershed of the Columbia River" (Lindgren 1904:12) with "the north slopes descending to and draining into the valley of the Clark Fork of the Columbia and the south and west slopes forming the headwaters of the Clearwater River of Idaho" (Fredlund 1971:2). In many
places these mountains attain elevations of over 9,000 feet and near the south end culminate in Trapper Peak (elevation 10,175 feet) (Lindgren 1904:13). The southern portion of the range appears to be slightly higher and more rugged than the northern half, which averages at the highest 7,000 to 7,600 feet in elevation.

The area of Montana that lies east of the Continental Divide and the main Rocky Mountain Range consists of undulating prairie occasionally broken by the Missouri and Yellowstone Rivers, their tributaries, and isolated mountain uplifts.

The Castle Mountains are a part of this province and occur as an isolated, plains, mountain uplift. They are of relatively small areal extent, and stand within a great eastward projection of the main Rocky Mountain front between the Little Belt Mountains on the north, the Big Belt Mountains and the Bridger Range on the west, the northern part of the Absaroka Range south and east of the Yellowstone River. They, along with the Belt and Little Belt Ranges, form a semi-detached mountain area nearly one hundred miles in diameter cut off from the main mass to the west by the valley of the Missouri River. These "ranges show a widespread dominance of accordant crests from 7,000 to 8,000 feet high. Isolated peaks or rounded knobs may rise 1,000 feet above the general level" (Fenneman 1931:218).
The Castle Mountain Range may be generally described as being rounded crests with steep-sided valleys indicating an old sedimentary surface dissected by rejuvenated streams. Occasional wide valleys with nearly flat or hilly floors seem to serve as enclosures of the plains-like environment (Mulloy 1958:15) that exists between the various ranges in the Castle Mountain area. At levels above 4,000 to 5,000 feet are woodlands or thick forests interspersed with open grasslands.

The "... Smith River drains the basin bounded by the Big Belt, Little Belt, and Castle Mountains, an area of about 1,800 square miles, and enters the Missouri [River]..." (Alden 1953:6). About 1,300 square miles on the northern and southern flanks of the Little Belt, Castle, and Crazy Mountains are also drained to the Missouri River by way of several different streams. The Musselshell River heads in the Little Belt Mountains and flows easterly between the Big Snowy Mountains and Bull Mountains, in a course approximately parallel with that of the Yellowstone River.

Geology

The Bitterroot Range is a vast uplifted block (Willard 1935:225, 322) of the Belt Supergroup, which consists mainly of granite from the Idaho Batholith along with Precambrian sedimentary rocks (Fryxell, Neff, Weiss 1965:23) of argillite, quartzite and limestone (McMurtrey, Konizeski, Stermitz 1959: 9-10). Also present is "border-zone gneiss" believed to be
the result of intrusion and metamorphism of this Belt Super-
group during the emplacement of the Idaho Batholith (McMurtrey, 
Konizeski, Stermitz 1959:9-10). The Idaho Batholith's "... 
mass forms on the whole an elongated area 300 miles from north 
to south and fifty to 100 miles from east to west, constituting 
one of the largest batholiths of this continent" (Lindgren 
1904:17).

The Castle Mountains are approximately 50,000,000 years 
old (Alt, Hyndman 1972:148) and are the final result of igneous 
rocks that have been forced up from the depths of the earth 
and through the original overlying sedimentary rocks in a molten 
condition. They consist primarily of granite with sedimentary 
formations such as limestone extending up and over the uplifted 
mass and flanking their sides (Willard 1935:105; Alt, Hyndman 
1972:148). Most of the sedimentary rocks in the Castle Moun-
tain area were deposited during the last part of the Paleozoic 
Period.

Glaciation

In western Montana, Fryxell, Neff, and Weiss (1965:234) 
have designated three glacial advances of the Cordilleran Ice 
Sheet:

(1) Earlier Advance of Wisconsin or Pre Wisconsin 
(beginning of Pleistocene in western Montana) 
50,000 BP-45,000
(2) Illinoian or Iowan 
45,000-32,000 BP 
INTERGLACIAL
Both Alden (1953:146) and Lindgren (1904:26) have concurred that the Bitterroot Range was thoroughly glaciated by local glaciers which oscillated in intensity, along with the main Cordilleran Ice Sheet, during the Pleistocene. At some places along the Canadian boundary the ice was 3,500-5,000 feet thick over major valleys, and the ice sheet blocked the Clark Fork River at Lake Pend d'Oreille at least five times, impounding Glacial Lake Missoula (Fryxell, Neff, Weiss 1965:231, 242; Antevs 1928:62). The final rupture of this natural dam and consequent violent flood about 7,000 years ago stripped the Clark Fork Valley bare, and it has since revegetated to coniferous forests. In the Bitterroot Valley itself "glacial debris accumulated on the western part of the valley while stream deposits accumulated to the east" (McMurtrey, Konizeski, Stermitz 1959:12-13). Today evidence of glaciation in low elevations of the Bitterroots consists of dried lake basins and moraines, while high elevations exhibit U-shaped valleys; polished outcrops of granite; cirques, and cirque lakes. The current appearance of this range is due to glacial sculpting for "very little weathered material mantles the bedrock of the Bitterroot Mountains" (McMurtrey, Konizeski, Stermitz 1959:9-10).

Although adequate evidence could not be accumulated to
indicate that the Castle Mountains were thoroughly glaciated during the Pleistocene Era, the presence of glacial drift near the eastern and southern fronts of the Castle Mountains and in other ranges as far south as the southern Rocky Mountains of Colorado and New Mexico has been noted and documented. Although "...at most places the outermost moraines of the mountain glaciers along the eastern front of the Rockies are of the Wisconsin Stage" (25,000 to 8,000 years BP) (Alden 1953:165), bouldery deposits indicating glacial drift have been noted to be capping high-level benches on the southern front of the Castle Mountains, and have been dated as early Pleistocene, or 50,000 to 45,000 years BP.

Climate

Thornthwaite (1931:648) has positioned the entire Bitterroot Range in the "B" or "Forest region" of his eight climatic categories. On maps on pages 654-655 and 642 he has further designated the Bitterroots as "humid microthermal with adequate precipitation at all seasons." According to Shelford (1963:153) rainfall in northern Montana and the lower mountains of southern British Columbia ranges from twenty to thirty inches. Snow may begin to fall in the state line area in September and begins to stay on the ground by October. Snow depth in mid-winter may reach from five to ten feet, and the temperature may stay well below zero for many days in succession, thus excluding habitation in the area for all but the hardy burrowing
animals and hibernators. Snow usually stays until early May, with intermittent spring rain-snow showers that melt off quickly. During the summer months the weather is usually warm (67° at 2:00 p.m. July 4, 1973) and quite dry, with the most abundant rainfall in June.

The Continental Divide exerts a marked influence on the climate of areas adjacent. East of the mountain barrier climatic characteristics are decidedly continental. Winters are harsh with intermittent cold waves. In those areas ideally situated for radiation cooling, temperatures can fall to -50° or lower. Between cold waves there are periods, sometimes longer than ten days, of mild, windy weather known as "chinooks." The warm winds can average twenty-five to fifty miles per hour. Precipitation is erratically distributed. Although drought in its most severe form is practically unknown, dry years do occur mainly from July to August and infrequently in June and September. Severe windstorms and tornadoes develop infrequently and in very open country. Summer hot weather occurs fairly often in the eastern parts of the state, the record being 117° in Glendive and Medicine Lake in 1893 and 1937 respectively. However, hot spells nowhere become oppressive because summer nights almost invariably are cool and pleasant. In the areas with elevations above 4,000 feet, extremely hot weather is almost unknown (Cordell 1971:1-3).

In an effort to compile pertinent climatic data on the Castle Mountains in particular, it has been necessary to rely
on information compiled at weather stations in towns near the general Castle Mountain area within the "Central Division" of Montana. Depending on increasing and decreasing altitude within the Castle Mountains, there is bound to be slight deviation from the following mean statistics. All are derived from Cordell (1971:9-19):

**WHITE SULPHUR SPRINGS.**

<table>
<thead>
<tr>
<th>Temperature (degrees F.)</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>June</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>20.1</td>
<td>22.8</td>
<td>28.6</td>
<td>40.6</td>
<td>50.1</td>
<td>56.7</td>
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<tr>
<td>July</td>
<td>Aug</td>
<td>Sept</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
<td></td>
</tr>
<tr>
<td>65.2</td>
<td>63.3</td>
<td>53.6</td>
<td>44.2</td>
<td>31.2</td>
<td>24.8</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Precipitation (inches)</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.95</td>
<td>1.17</td>
<td>1.68</td>
<td>1.40</td>
<td>2.32</td>
<td>3.28</td>
</tr>
<tr>
<td>July</td>
<td>Aug</td>
<td>Sept</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
<td></td>
</tr>
<tr>
<td>1.36</td>
<td>1.45</td>
<td>1.38</td>
<td>1.17</td>
<td>1.19</td>
<td>1.11</td>
<td></td>
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</table>

Mean annual precipitation for the general Castle Mountain area is fourteen to sixteen inches based on rainfall during the period 1931-1955. Mean maximum temperature in January for the general Castle Mountain area is 28° to 32° based on records for the period 1931-1955. Mean minimum temperature in January for the general Castle Mountain area is 8° based on the period 1931-1955. Mean maximum temperature in July is 80° and mean minimum temperature in July is 48° based on the same time periods.

**History**

Although I could not locate documented evidence to indicate that early trappers, traders, or explorers spent periods of time
in the general Bitterroot state line area in particular, it seems logical to assume that they did since what literature there is available continually refers to their crossing and recrossing the mountains (i.e., the Bitterroot Range) in order to traverse parts of what are now Montana, Idaho and Washington.

On September 2 and 3, 1805, the Lewis and Clark expedition to the Pacific crossed the state line area of the Bitterroot Mountains. Under great hardship suffered by men and horses due to steepness, dense thickets of trees and brush, and freezing snows, they crossed mountains of 7,000 feet or more elevation. They inadvertently passed from Idaho back into Montana but did not recross from the Pacific to the Atlantic watershed:

They had passed this continental divide from Shoshone cove [Montana into Idaho], gone down the Lemhi, thence down Salmon river to Fish creek, up this creek to its forks, up the left hand fork, and so over the interstate boundary mountains and into Montana again. (Coues 1965:581)

On a trek from his trading post (Kuliyspell House) near Lake Pend d'Oreille to Saleesh House near Thompson Falls in 1809, David Thompson had to cross the Bitterroots. It was not easy going, and an historical publication (Cheetham 1960:16), written to commemorate 150 years since his journeys in and out of Idaho, described each day of his travel as one of "little progress." In his journal Thompson has repeatedly described the difficulty and travail of beast and men in progressing
through and over mountain terrain:

With occasional cutting away of few trees we should have made several miles a day, but the forests are so frequently burned and occasions so many windfalls, that the Horses make very slow progress, thus the dense forests are destroyed and meadows formed. (Tyrrell 1916:441)

And in talking with an old Indian prior to a trip to explore the Clark Fork River country around St. Regis, Thompson stated:

. . . looking at our Horses he told us they were too poor for the country of the South Branch, which was hilly and required strong Horses and sent a young man to bring three of his Horses, which he lent us for the journey; sending ours to feed and rest. (Tyrrell 1916:543-544)

The Journal of John Work lists trappers and traders Alexander Ross, Jedediah S. Smith, and himself as having crossed the Bitterroots from areas west in the 1820's to trade with the Flatheads, Kutenais, and Nez Perces (Lewis, Phillips 1923: 28, 37, 56, 83-87).

In 1859 John Mullan wrote while on a military expedition to build a road from Fort Walla Walla to Fort Benton:

Sir: An Indian enroute to Walla Walla enables me to drop simply a line. Our road across to Bitterroot Mountains is completed, after a laborious and severe work. But it speaks for itself. The road is now opened to a point five miles east of the range. . . . (Mullan 1861:23).

In a later volume he included an itinerary of travel from Fort Walla Walla to Fort Benton:

Nineteenth day--make an early start and cross summit of Bitterroot Mountains; may have to double teams at second curve. Move to Five-Mile Prairie, on St. Regis Borgia River; wood and water abundant. (Mullan 1865:13).
On page 59 of the same volume he stated:

In this latitude the main chain of the Rocky Mountains is much less difficult than some of its spurs. This is particularly so with the Bitterroot Range, which though it does not attain the same altitude, is in winter covered with a depth of ten feet of snow, and offers so many obstructions to continuous travel, that it has become the dread and terror of those whose duties compel them to cross this range in winter.

Mullan's party found gold by 1853 on the eastern slopes of the Bitterroots, and in the summer of 1860 gold was discovered on the western slopes by a party under a Captain Pierce.

In 1910 there were extensive forest fires in western Montana and Idaho. The consequent burning of much timber allowed for the formation of lush alpine grasslands. This good grass cover was discovered by sheep ranchers in the 1920's, and grazing permits were issued by the United States Forest Service into the 1930's, until the delicate alpine zone was almost reduced to barren, eroding slopes. Sheep grazing permits were eventually abolished, but evidence of both the 1910 fire and land-resource mismanagement are still evident on the state line today.

The southwestern portion of what is now Montana, including the general Castle Mountain area, was traversed by many early fur traders, trappers and adventurers. On July 15, 1805, Lewis and Clark discovered and named the Smith River:
At six miles we came to an island opposite a bend toward the North side; and reached at 7 1/2 mile the lower point of a woodland, at the entrance of a beautiful river, which in honor of [Robert Smith] the Secretary of the Navy, we called Smith's River. This stream falls into a bend on the south side of the Missouri, and is 80 yards wide. As far as we could discern its course, it wound through a charming valley toward the southeast, in which many herds of buffalo were feeding, till at the distance of 25 miles it entered the Rocky Mountains, and was lost from our view. (Coues 1965:414-415)*.

Jim Bridger is mentioned as being in the Musselshell River area while being on a beaver fur trapping expedition with a party enroute to the Great Falls of the Missouri and the Three Forks of the Missouri in 1823 (Vestal 1972:25). In the spring of 1847, a partner of John Johnston ("Liver Eating Johnson") went trapping in the Big Snow Mountains; and during the winter of 1868-1869 Johnston himself accompanied a friend to trap in the Big Belt Mountains. There are repeated notations of campsites and rendezvous along the headwaters of the Musselshell River.

Although he makes no specific note of it, it appears that Luther S. Kelly (Yellowstone Kelly") spent time trapping and camping in the outlying Castle Mountain range, noting that the most abundant game was to be found on higher ridges within the area:

*Note: on "A Map of Lewis and Clark's Track across the Western Portion of North America. From the Mississippi to the Pacific Ocean, By Order of the Executive of the United States, in 1804, 5 and 6," reproduced in facsimile from the Philadelphia Edition of 1814, Lewis and Clark apparently lumped all mountains located west of the Musselshell River as "Rocky Mountains." In this case, they were actually speaking of the Castle Mountains."
The summer of 1875 I spent mostly in cruising in and about the Judith Basin and vicinity. The basin proper was too open and exposed to afford good hunting, but southeast of Judith Mountain on the slopes and cedar ridges extending to the Musselshell River and beyond to the breaks of the Yellowstone was a veritable hunters paradise for game of all kinds. (Quaife 1973:117).

The term "Castle" or "Castle Mountains" apparently was not documented until quite late in history. The first discovery of mineral deposits were found along Aellebaugh Creek in the Castle Mountains by H. H. Barnes in 1882 and 1885. Diggings were begun by the Hensley brothers and yields contained mostly silver with a heavy infiltration of lead. Some 1,600 claims were quickly located in the area. On April 21, 1887, the town of "Castle" was christened--deriving its name from the surrounding mountain peaks that seemed to resemble turrets crowning the walls of an ancient castle:

In Castle's prime, she boasted nine stores, one bank, two barber shops, two butcher shops, two livery stables, two hotels, a photo gallery, dance hall, church, school, jail, brass band, fourteen saloons, four newspapers, three smelters, and a vigilance committee. The Castle Water and Power Company was formed, with A. M. Holter of Helena as president, which could supply water for a possible 50,000 inhabitants. (The Meagher County News 1968:67).

Castle and surrounding towns (Bonanza, Giant, Smith's, Blackhawk, and Robinson) had a population of over 2,000 each before Congress demonetized silver in 1893, and the mines were forced to close down.

Currently, the Castle Mountains are included within Lewis and Clark National Forest, Jefferson Division. Specific areas
are utilized for the grazing of domestic stock by Forest Service permit; are within private land ownership; or remain as natural reserves.

It is the natural environment that offers man the resources by which he may subsist, and it is his culture that determines what he will use within the natural environment. Within mountainous areas there exists a wealth of plant and animal foods, for:

Mountains have one feature which the plains can never claim: a fantastic diversity of ecological zones within a relatively small area. Specific vegetable resources seem to last forever in the mountains. For example, huckleberries begin to bear fruit about the first week in July in sunny areas at low elevations and are finished by the end of that month; but at higher elevations they can still be found at the end of August or the first of September. (Fredlund, Fredlund 1971:48).

Both sites to be considered in this paper exist in subalpine ecological zones that offer relatively similar and abundant food, shelter, and water resources. They also exhibit similar environmental limitations upon cultural utilization of these areas. That is, vertical zones of ripening flora; and faunal movement that depends on climate, forage capacity, and water availability. Thus, aboriginal movements into the mountains was not primarily to obtain one resource, but to harvest all that was desired and available in a particular ecological zone at a specific time, dependent upon the season.
Pydberg (1915:11) has divided mountain regions into four zones: "(1) the Alpine Zone, above the timberline; (2) the Subalpine Zone; (3) the Montane Zone; (4) and the Foothill Zone." He did not set a definite limit between the alpine region and the subalpine region, but viewed it as a transition zone between the alpine grasslands and the forest. Shelford (1963:152) expressed a similar opinion, as animals pass freely between and through both regions. Gray and Hooker (1880:4) have confined alpine flora in general from 5,000 to over 14,000 feet above sea level. Thus, it may be seen that the area of the Bitterroot Mountains of principal concern in this paper—the Montana-Idaho state line area—lies within the alpine-subalpine zone(s).

The subalpine zone in the northern range of the Rocky Mountains extends from an altitude of about 6,500 feet to the timberline. Trees found within the area are the engelmann spruce (Picea engelmannii); subalpine fir (Abies lasiocarpa); white-barked pine (Pinus albicaulis)—the delicious nuts were harvested when ripe in late August and early September--; lyall's larch (Larix lyallii); aspen (Populus tremuloides Michx); lodge-pole pine, limber pine, and douglas fir (Pseudotsuga menziesii)—of which the needles were boiled to make a tea, the wood was used to make implements, and the pliable roots utilized in the weaving of baskets (Rydberg 1915:16-18; Kirk 1970).
The grasses of the subalpine zone resemble those of the alpine zone but are of less extent, being almost a continuation of alpine meadows. The following grasses are found in the subalpine zone throughout the whole Rocky Mountain region, offering nutritious forage for herbivores as well as some use to humans:

- *Muhlenbergia racemosa*
- *Phleum pratense* and *Phleum alpinum*
- *Alopecurus aristulatus*
- *Agrostis asperifolia*
- *Calamagrostis Langsdorfii*
- *Deschampsia atropurpurea*
- *Trisetum subspicatum*
- *Graphephorum muticum*
- *Danthonia californica*
- *Poa pratensis*
- *Panicula nervata—*
- *the seeds of many species were eaten raw or ground and used in mush or cakes and Hordeum jubatum (Rydberg 1915:631; Kirk 1970)*

Shrubs existing in an alpine environment in the northern Rockies are rose (*Rosa woodsii*)—the edible fruits were eaten raw or in stews, the petals are sweet tasting--; queens cup; black twinberry (*Lonicera utahensis*)—the berries were eaten raw or dried for further use--; viburnum (represent species of cranberry tree, mooseberry, and high bush cranberry)—all species' berries were eaten--; and bunchberry (*Cornice canadensis*)—the fruits were eaten raw or cooked into puddings, the fresh bark was used as a cathartic, and the boiled roots were used as a cold and fever remedy (Shelford 1963:153; Kirk 1970).

On the basis of compared elevations in the Bitterroot Mountains and Castle Mountains, and information acquired from the United States Department of Agriculture, Forest Service, Lewis
and Clark National Forest, Jefferson Division, 1963 Timber Inventory Map, it appears that plant cover in the Castle Mountains' high altitudes is similar to that of the subalpine zone of the Bitterroot Mountain state line area. Predominate trees are the englemann spruce; whitebark, limber and bristlecone pine; western larch; alpine and corkbark fir; western red cedar (Juniperus virginiana L.); douglas fir (Pseudotsugs taxifolia Britton); grand fir (Abies procera Reh1); lodge-pole pine (Pinus contorta); ponderosa pine (Pinus ponderose Laws); and western white pine (Pinus strobus L.). Aspen (Populus tremuloides Michx) are found in moist areas on the sides and floors of intermountain valleys. An occasional juniper tree (Juniperus siberica) is found on dry, rocky points at high altitudes as well as in more protected, timbered areas and along stream banks. All juniper species have edible berries that were often dried and eaten, or ground and used in mush or cakes. Willows (Salix lucida Muhl), and cottonwood trees (Populus deltoides Bartr.) are noted along lower stream banks and ponds. The inner bark of both aspen and cottonwoods were eaten as emergency food by western Indians (Kirk 1970).

Grasses are thick in the alpine meadows and near streams and springs. Those to be found in the Castle Mountains are the same as those found in the alpine-subalpine zones of the Bitterroot Mountains. Grasses existing below the subalpine zone in the Castles are found within what Rydberg (1915) has termed the "Montana Zone" and tend to resemble more those of
the Great Plains and the foothills:

In the large open valleys or so-called parks, many of the grasses are the same as those found in the valleys of the Plains regions, in fact many have followed the streams up from the prairies.... The grass flora of the mountain slopes consists more exclusively of grasses peculiar to the mountain regions. (Rydberg 1915:634).

In the Castles' lower elevations, grasses include:

- *Andropogon furcatum*  
- *Muhlenbergia richardsonis*  
- *Sporobolus airoides*--the seeds were ground into a flour  
- *Bouteloua oligostachya*  
- *Poa crocata*  
- *Koeleria gracilis*  

- *Agropyron violaceum*--the root stocks were dried and ground into meal  
- *Hordeum jubatum*  
- *Sitanion elymoides*  
- *Elymus triticoides*--the grain was eaten raw  
- *Sporobolus airoides*--the seeds were ground into a flour  
- *Koeleria gracilis*  

Shrubs that may be found in the Castle Mountains are rose; huckleberry (*Vaccinium membranaceum*--the berries were eaten raw or sometimes dried--; strawberry (*Fragaria pauciflora*)--the sweet berry was eaten raw, tea was made from the leaves--; bristly red currant (*Ribes Montigenun*)--the berries were used in the making of pemmican, also used by some Indian groups for the treatment of stomach aches--; and red raspberry (*Rubus strigosus*)--the sweet berries were eaten raw (Mulloy 1958:21; Kirk 1970). Prairie sage (*Artemisia tridentata*) is currently multiplying rapidly over valley floors as a result of domestic cattle over-grazing in some areas. The seeds or fruits of this plant were eaten raw or ground into meal. It was used medicinally for treatment of round worm infestation, and made into teas to help relieve cold and sore eye symptoms.
Fauna

Shelford, Jones and Dice (1926:60, 538) have placed the Bitterroot Mountains and state line area within two biotic provinces: "Alpine Steppe or High Tundra; and Mountain Coniferous Forest." Included in the sedge, grass, and herb covered areas of the first province are big-horn sheep (*Ovis canadensis* subspp.); Rocky Mountain goat (*Oreamnos americanus* subspp.); black bear (*Euarctos americanus*); grizzly bear (*Ursus horribilis*); rosy finches and white-tailed ptarmigan as characteristic birds; and various species of spiders, mites, flies, and beetles. Included in the subalpine forest regions of the second category are the navigator shrew (*Neosorex N. navigator*); grizzly bear; hoary marmot (*Marmota caligata nivaria*); columbian ground squirrel (*Citellus columbianus*); chipmunk (*Eutamia sp.*); sagebrush deer-mouse (*Peromyscus maniculatus*); red-backed vole (*Clethrionomys gapperi*); pika (*Ochotona princeps subspp.*); snowshoe hare (*Lepus americanus*); deer (white tailed, *Odocoileus virginianus*; black tailed, *Odocoileus hemionus*); various species of mountain birds and big-horn sheep, and Rocky Mountain goat. Although elk (*Cervus canadensis*) did not originally inhabit a mountain environment, it is only logical that it be included on this faunal list since "According to Wright, Dixon, and Thompson (1933) the wapiti requires shrubs and mountain meadow plants near the upper forest edge for summer range, the higher forested slopes for bedding down at night, and the mid-slopes
and valleys for wintering" (Shelford 1963:158). Elk are currently hunted in the Montana-Idaho state line area.

In the mountains of Idaho, whitetail deer and mule deer are the common species, comprising 40 percent and 60 percent respectively of the population of large game animals. The mountain caribou (Rangifer caribou) was originally in Idaho and in the extreme northern part of the Montane forest, but size of the populations is unknown. Mountain sheep were more abundant than deer in 1870. In Idaho their summer range is in elevations from 8,000 to 9,000 feet. Mountain goats occur commonly in steep rocky areas. Their population was estimated at 4,000 in the Bitterroot Mountains and adjacent ranges in Idaho in 1870 (Shelford 1963:158-159).

Animal resources that may be found in the Castle Mountains are mule deer; whitetail deer; elk; big-horn sheep; antelope (Antilocapra americana); black bear; beaver (Castor C. canadensis); raccoon (Procyon P. lotor); badger (Taxidea T. americana); skunk (Mephitis M. mephitis); weasel (Mustele M. frenata); mink (Mustela M. vison); coyote (Canis c. latrans); jack rabbit (Lepus tounsendii); cottontail rabbit (Sylvilagus L. leporidae); and prairie dog (Cynomup c. ludovicianus). Prior to its decimation in the late 1870's, the bison (Bison B. bison) was found in vast numbers everywhere on the plains and also extended in erratic, small numbers into and along the flanks of the mountains (Mulloy 1958:17, 18, 19). Tom McHugh has stated:
In view of their size and weight, buffalo are astonishingly nimble. They will venture into areas where no horse can be urged to go, and where a man can clamber only with difficulty. Seldom are they deterred by obstacles in the terrain, such as steeply cut banks along a river or rocky walls around a canyon. They have been known to climb high into the Rocky Mountains. (1972:26).

Various species of mountain birds exist in the area, and streams teem with native cutthroat trout. All, except the very small mammals and birds were exploited in some way by aboriginal peoples.
CHAPTER III

THE HIGH ALTITUDE GAME TRAP SITES

The State Line Area

The state line area is called as such because it lies along the undulating crests of practically one continuous ridge of the Bitterroot Range that forms the majority of the Montana-Idaho border; and because the ridge itself serves as a divide between the tributaries of the Snake and Columbia Rivers. The entire region is alpine-subalpine, with lower saddles occasionally dipping to upper montane. The portion of the Bitterroots to be considered in this paper is located in the state line area at approximately 7,171 to 7,195 feet in elevation, in sections thirty-two and thirty-three of Township forty-two north, Range twelve east on USGS Quad Map Straight Peak, Montana-Idaho. The area is deeply dissected by canyons with small, water-filled glacial cirque basins just below the ridge tops, principally on the Montana side. In approximately seven miles of survey, it appeared that the ridge slope into the Montana side was rougher and steeper than that into the Idaho side of the border. As of July 3, large snow banks still existed on the northeast slopes of the ridges. Many flowers were in bloom--principally mountain heather, along with dwarf
huckleberry, elk sedge, spiraea, alpine forget-me-not, elephant head, and polygonium and bear grass that formed a vast carpet interspersed with eroded bare spots on all but the very rugged slopes. Occasional puffballs were sighted along with small stands of pine or fir species, most of which occurred in an open forest. Many elk and deer tracks were observed along with an eagle, a hawk, and a grouse. Coyote droppings were noted. The flies were a great nuisance in areas protected from the wind. A beaver was spotted on the shore of Dalton Lake. Alden (1953:55) described the view from the state line crest as "a wilderness of profound V-shaped gorges and narrow crested interstream spurs." He further stated that "only from the hazy distances south of the latter stream does the observer get an impression of a plateau or a suggestion of an uplift."

Description of the Dalton Site

The state line site to be focused upon in this thesis is known as the Dalton Lake Site or, occasionally, the Pearl Lake Site. It was originally found by Mr. William LaCombe, and later recorded by Mr. Dale Fredlund (1971:4). Under the Smithsonian Institution classification, it is numbered 10 Se 2 for Shoshone County in the state of Idaho. It is located with reference to the Montana Principal Meridian in the N/E 1/4 of the S/E 1/4 of Section 32 in Township 42 N, Range 12 E, on quad map USGS' Straight Peak, Montana-Idaho. A possible associated site area, known as the "Dalton Saddle" (LaCombe: personal communication, July, 1973)
lies to the northeast of 10 Se 2 a very short distance away and directly above Dalton Lake. It has been given the Smithsonian Institution number of 10 Se 1. It is located with reference to the Montana Principal Meridian in the S/E 1/4 of the S/E 1/4 of Section 32; and the S/W 1/4 of the S/W 1/4 of Section 33 in Township 42 N, Range 12 E, on USGS quad map Straight Peak Montana-Idaho. Mineral County in Montana is adjacent to Shoshone and Clearwater Counties in Idaho.

Most of the Dalton Lake Site is on the crest of the open, pine-forested state line ridge above Pearl and Dalton Lakes. The Montana side of the area is very steep, breaking off into sheer cliffs, with the one exception of a fairly steep ridge between Pearl and Dalton Lakes, extending from the state line ridge itself and into Montana in a northeasterly direction. The southern face, or Idaho side, is comparatively gentle, covered with bunch grass, bear grass, and an occasional conifer tree. The site is situated between a steep hill to the southwest, and a rather gentle knob with eroded talus outcroppings to the west. Scattered snow fields existed on both crests (recorded July 9, 1970; July 3, 1973) in areas having the least sun exposure. On the western slope, the snow fields were quite large. One snow field (snow-field #1) extended 300 feet from the cliff edge overlooking Pearl Lake in a northwesterly direction and covered parts of the state line trail. The snow was one and one-half to two feet thick and was 110 feet in maximum width. Another snow field (snow-field #2) extended farther south down the face, was smaller (132 feet long,
forty-eight feet wide) and was melting rapidly as of July 3, forming a small rivulet of good clear water. According to LaCombe (site form: 1970) there is also a spring three-quarters of a mile away from the site on the Idaho side. (Figure 2).

A series of five pits were found among the talus on the slope of the western gentle knob and appeared to "wind" around it from top to bottom in stair-step fashion. The top pit, or pit #1 was quite small in holding capacity, but offered an excellent view toward the basin area to the south and southeast. At the same time a person in the pit would have been hidden from below due to a lower rock projection that hung out over the slope. It appeared that those people who constructed the pit merely threw existing stones out and over an eroded outcrop to form the basin, thus creating a great pile of limestone rocks extending eleven feet to the south and southeast. Lichen covering on the stones was slight. The dimensions of the inner pit were length, four feet seven inches; width, two feet eight inches; north-south axis, four feet five and one-half inches. A small piece of charcoal was noted in the pit. Approximately eight feet northeast of the center of pit #1 lay a more poorly made and smaller pit, pit #2. It consisted of larger rocks (one being two feet seven inches by one foot five inches) and blended well into the hillside. The inner pit had a rocky but flat bottom with dimensions of three feet in length and three feet in width. (Figure 3).
FIGURE 2. Aerial photograph of state line area. Arrow denotes Dalton Site.
FIGURE 3. Pit #1 and Pit #2.
Pit #3 was below pits #1 and #2 and consisted of less rocks than the previous ones described. The stones had very little lichen cover on them. It too appeared to have been made by throwing stones down the slope until a depression was formed. Resultant talus extended eleven feet downhill from the pit, along with one large burned snag. Dimensions of pit #3 were length, eight feet seven inches; width, three feet eight inches; north-south axis, five feet. It had a smooth bottom and offered a good view farther down the basin towards the south that could not be seen from pits #1 and #2. (Figure 4).

Below pit #3 lay pit #4. It did not appear to be completely man-made but resembled more a dried channel or waterfall both below and above it. Any sitting or crouching space extended downhill to the south and southwest. A log four inches in diameter and five feet three inches long lay in the uphill part of the pit, with two other pieces, one, one foot ten inches long, and the other, five feet three inches long lying nearby. Other logs lay below. None showed evidence of cutting. This was the largest of the five pits. Its dimensions were length, eleven feet; width, six feet; north-south axis, nine and one-half inches. Although it is obvious that not much effort went into making this pit, it could conceal one or two people easily, as two very large rocks facing southeast and downhill offer a hidden view even farther down the basin than the other pits. (Figure 5).
FIGURE 4. Pit #3

FIGURE 5. Pit #4
Unlike the other pits, pit #5 consisted totally of rock. It was a small pit, hollowed within the talus slope, with rock extending on all sides and downhill for a distance of seven feet eight inches. It was slightly oval-shaped and somewhat resembled several vision quest structures that I have seen. The rocks were large and completely covered with black, splotchy lichen, making this pit appear to be the oldest of the five. A log, splintered, four feet eight inches long and six inches in width, lay partially within the pit at an east-west axis. It showed no evidence of cutting. The dimensions of the pit were length, six feet four inches; width, five feet six inches; north-south axis six feet seven inches. Pit #5 appears to have been the "key" pit. It offered an excellent view of the whole valley below to the west and southwest, the basin below the ridge which is only seen in sections from the other pits, and the top of the ridge above Pearl and Dalton Lakes. When standing in pit #5, a six foot tall man could see pit #4. (Figures 6 and 7).

A single rock lay 525 feet northeast of pits #1 and #2, eighty degrees east of north from the head of the aforementioned ridge extending into Montana, and at one point, thirty-four feet from the lip of the crest over Dalton Lake. It consisted of approximately thirty-three limestone rocks. Some appeared to have been placed in the pile like pie wedges, thus allowing for no bare spot in the center. Consequently, the pile was almost perfectly circular. The rocks were speckled with black lichen.
FIGURE 6. Pit #5

FIGURE 7. View of slope and collecting basin below ridge top.
and resembled those now similarly covered with black lichen in pit #5. The dimensions of the feature were length, two feet nine inches; width, two feet eight inches; north-south axis two feet eleven inches. The rock pile was approximately twelve inches in height. From the pile there was a good view of the "Dalton Saddle" and cliffs towards the east. (Figure 8).

An area of great lithic concentration extended from the lip of the ridge crest at the eastern corner of snowfield #1 easterly across the ridge top to the head of the Montana extension ridge. It measured approximately 132 feet wide and 200 feet long. Scattered lithic debris also has been found beyond this area and farther east across the ridge to the rock pile. In 1970 (Fredlund, LaCombe 1971) many projectile points representing forms that range in time from what appears to be Middle Period to recent, scrapers, knives, flakes, retouched flakes, edge ground cobbles, and pestles were found in this area. In 1973 I found two projectile points, and several flakes and retouched flakes in the same area. (Figures 9 and 10).

Artifacts

All artifacts recovered at the Dalton Site are of stone material and were found on the surface within the previously described lithic area. The following descriptions are in accordance with a method currently being used by some members of the University of Montana Anthropology Department for compiling data on artifacts that may in the future be applicable in computer analysis.
FIGURE 8. Rock pile. The scale is six inches.

FIGURE 9. Lithic area and snow field #1.
Figure 10. Topographic map of L0 SE Z.

Scale: one inch = fifty feet.
My types are based on shared physical characteristics such as size and form. All artifacts within a type are described in order from most complete and best condition. It should be noted that the referral to several tools as being crude in construction or flaking may not be related to personal design and workmanship, but more to the material being employed. In most cases "crude-ness" is associated with the material basalt.

The following materials were found to have been at the Dalton Site. The number represent tools and flakes combined:

<table>
<thead>
<tr>
<th>Material</th>
<th>Total Flakes and Tools</th>
</tr>
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<tbody>
<tr>
<td>CHERT</td>
<td></td>
</tr>
<tr>
<td>white-milky</td>
<td>1</td>
</tr>
<tr>
<td>grey</td>
<td>2</td>
</tr>
<tr>
<td>yellow-grey banded</td>
<td>3</td>
</tr>
<tr>
<td>OBSIDIAN</td>
<td></td>
</tr>
<tr>
<td>black</td>
<td>2</td>
</tr>
<tr>
<td>green</td>
<td></td>
</tr>
<tr>
<td>BASALT</td>
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</tr>
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<td>black</td>
<td>11</td>
</tr>
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<td>white specked</td>
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<tr>
<td>AGATE</td>
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</tr>
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<td>cream colored</td>
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</tr>
<tr>
<td>JASPER</td>
<td></td>
</tr>
<tr>
<td>red (some banded)</td>
<td>6</td>
</tr>
<tr>
<td>yellow</td>
<td>1</td>
</tr>
<tr>
<td>SILTSTONE</td>
<td></td>
</tr>
<tr>
<td>red</td>
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</tr>
<tr>
<td>brown-grey</td>
<td>2</td>
</tr>
<tr>
<td>moss-brown</td>
<td>3</td>
</tr>
<tr>
<td>army green</td>
<td>3</td>
</tr>
<tr>
<td>PURE QUARTZ CRYSTAL</td>
<td>2</td>
</tr>
<tr>
<td>FINE GRAINED QUARTZITE</td>
<td>2</td>
</tr>
<tr>
<td>LIMESTONE</td>
<td>2</td>
</tr>
<tr>
<td>GRANITE</td>
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</table>

Red jasper, black basalt, and green obsidian appears to be native to the state line area.
Wheeler (1951:46, 47) has described the "McKean Lanceolate Point" as:

Generally, the sides of the blade are incurved toward the tip and tapered toward the base about midway between the tip and the base; less commonly, the sides of the blade are parallel, and are tapered toward the tip and incurved near the base, or the sides of the blade are tapered toward the tip and are incurved near the base; rarely, the sides of the blade are incurved toward the tip and toward the base. The base has a deep, usually symmetrical notch, 3.5 to 7 mm. deep and approximately 6 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. Usually both faces of the blade are fully flaked. In every instance the edges of the blade are thin, slightly sinuous, and somewhat uneven. The edge of the notch is thin and sharp.

Specimen A

This point is a stemless, parallel-sided lanceolate point. The distal end is acute but now broken off along with part of a side of the blade. The proximal end is parallel pointed, due to a relatively deep basal notch. Flaking is bifacial, and horizontally transverse. The basal notch shows evidence of thinning.

Size

Length: from current point to base 32 mm.
Width: widest point between the sides 17.5 mm.
Thickness: 4.5 mm.

Material

red jasper

Comparable Specimens

<table>
<thead>
<tr>
<th>Arthur 1966 (Type VII)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnier 1971 (Fig. 5, d)</td>
<td>Upper Yellowstone R., Mont. shore, McDonald Lake, Mission Mtns., Montana</td>
</tr>
<tr>
<td>Butler 1962 (Fig. 10, ii)</td>
<td>Columbia Plateau</td>
</tr>
<tr>
<td>Fredlund, Fredlund (1970)</td>
<td>7,500 elevation, Spotted Bear R., Montana</td>
</tr>
</tbody>
</table>
Strong (1935:238) said on the basis of the mechanics of deposition and dune migration on and near Signal Butte:

We may say then, subject to later correction, that Level I on Signal Butte probably falls either in the dry, cool period (circa 8,000 years ago) or in the humid cold period (circa 10,000 years ago).

In 1950 Bliss (1950:112) used a dating technique of Antevs' and arrived at a date of approximately 3,000 years BP for Signal Butte deposit I-C. Later, Mulloy (1954:456) and Wheeler (1951:49) used carbon fourteen analysis of charcoal from Signal Butte's lowest level of Level I to determine a date of 2,950 ± 200 years for the sample. Don Grey (1961:5) gave information in The Wyoming Archaeologist that William Buckles helped dig a McKean site in the Black Hills from which a charcoal sample yielded a radiocarbon date of 4,100 years. Swanson, Butler and Bonnichsen's excavation of several rock shelters along
Birch Creek in Idaho (1964:99) showed 57.8 percent of all lanceolate points to be found in the Phase I or Birch Creek phase of that area which is reported by the authors to have a date before 5,000 BC. According to Mulloy's table (1958:145) based on comparison of Pictograph Cave and other stratified sites, lanceolate blades with concave bases occur in the Early Middle Prehistoric Period. Gruhn (1961:131) has stated:

In general, the Wilson Butte V assemblage shows affiliations with sites of the Early and Late Middle Period in the Northwestern Plains--The medium-sized lanceolate points from Wilson Butte Cave are evidently McKean points, similar to those found in the lower level at the McKean site and in Signal Butte I, which is dated around 2,500-2,000 BC.

And in reference to the McKean Site, Mulloy (1954:432, 454) stated:

This is a campsite with two well-defined, separated levels containing assemblages of the Middle Prehistoric Period, respectively assignable as Early and Late. A single radiocarbon date for the upper [late] level reads 3,287 + 600 years. The assemblages agree with Signal Butte I and II. Signal Butte I, pertaining to the Early Middle Period, correlates with McKean's lower level; Signal Butte II, of the Late Middle Period, with McKean's upper level.

Type II "Duncan Point" Figure 12 (p. 63)

In describing the "Duncan Point" Wheeler (1954:7) said:

The Duncan point is 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 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 a 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.

**Specimen A**

The Dalton Site Duncan Point specimen is an incurvate stemmed and slightly expanded projectile point. The shoulders are rounded. The base is slightly concave due to a basal notch. Flaking is bifacial and random. Basal thinning is not evident.

**Size**

Length: from current point to base 31.5 mm.
Width: greatest distance between the two shoulders 18.5 mm.
Thickness: 5.5 mm.

**Material**

black basalt

**Comparable Specimens**

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Type/Number</th>
</tr>
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<td>Arthur 1966</td>
<td>(Type IX)</td>
</tr>
<tr>
<td>Barnier 1971</td>
<td>(pg. 27, h)</td>
</tr>
<tr>
<td>Bentzen 1961</td>
<td>(Fig. 5, 22)</td>
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<tr>
<td>Bliss 1950</td>
<td>(Fig. 58, top)</td>
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<tr>
<td>Frison 1962</td>
<td>(Fig. 1, b)</td>
</tr>
<tr>
<td>Jennings 1957</td>
<td>(Type W10)</td>
</tr>
<tr>
<td>Loendorf 1969</td>
<td>(Type II)</td>
</tr>
<tr>
<td>Malouf 1956</td>
<td>(Plate II, middle)</td>
</tr>
<tr>
<td>Mulloy 1943</td>
<td>(Fig. 20, a, 7)</td>
</tr>
<tr>
<td>Mulloy 1954</td>
<td>(Fig. 4, 37)</td>
</tr>
<tr>
<td>Mulloy 1958</td>
<td>(Fig. 6, 10)</td>
</tr>
</tbody>
</table>

**Location**

- Upper Yellowstone R., Montana shore of Lake McDonald, Mission Mts., Montana
- Powers-Yonkee Bison Trap, Montana
- Level II, Birdshead Cave, Wyoming
- Level I, Wedding of the Waters Cave, Wyoming
- Danger Cave, Utah
- Pryor Mtns., Montana-Wyoming
- Level IV, Flathead Lake, Montana
- surface stratum, Red Lodge Site, Montana
- lower level, McKean Site, Wyoming
- Level I, Pictograph Cave, Montana
Mulloy, Lewis 1943 (Fig. 28, 20-26) surface, near Glendive, Montana
Strong, 1935 (Plate 25, Fig. 1, c) Level I, Signal Butte, Nebraska
Swanson, Tuohy, and Bryan 1959 (Pg. 74, 25) central and south Idaho
Taylor 1964 (Type VIII) Yellowstone Park, Wyoming
Wheeler 1954 (Fig. 1, a-3, A-E) Wyoming

The Powers-Yonkee Bison Trap contained Duncan and Hanna Points.

Concerning a date for that site, Bentzen said:

A charcoal specimen which was found in association with the skull and the artifacts was submitted to Isotopes, Inc. for radiocarbon dating; the date reported was 4,450 ± 125 BP. (1961:118)

However, no definite level was given. Duncan points were found in the same level with McKean points in Wedding of the Waters Cave (Frison 1962) and on a strand 135 feet above Flathead Lake (Malouf 1956). At the Red Lodge Site (Mulloy 1943:170) McKean, Duncan, and Hanna points were found in the same subsurface stratum that may be compared with Pictograph Cave Level I and II. At Hells Midden in Colorado (a large, stratified deposit built up beneath a rock ledge) a Duncan-like point appeared stratigraphically in the late phase of what Lister (1951:39,46) called a hunting and gathering stage. Concerning this point Lister stated:

The estimated age of these points is very controversial at present and ranges from greater than 9,000 years old to as little as between 3,000 and 2,000 years old. (1951:47)

According to Mulloy's table (1958:14), lanceolate blades with large lateral notches or basal constrictions fall within the Early Middle Prehistoric Period.
Type III "Hanna Point" Figure 13 (p. 63)

Wheeler (1954:8) described the "Hanna Point" as... a chipped stone projectile point characterized by a 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 to one-half of the total length. The blade is 13.5 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.

Specimen A

This is a long-stemmed projectile point. The shoulders are slightly inversely tapered and both barbs are broken off. From the shoulders up the point is triangular or straight. The distal end is acute with a small portion broken off. The wide, stemmed proximal end is incurvate, expanding and concave. Flaking is bifacial and horizontal transverse. The base has been bevelled on both sides.

Size

Length: from point to base 37 mm.
Width: greatest distance between two shoulders 20 mm.
Thickness: 5.5 mm.

Material

brown-grey siltstone

Specimen B

This is a rather thick long-stemmed projectile point, with one shoulder, part of a side of the blade, and the distal end broken off. From the shoulders up the
point is triangular or straight. The proximal end is incurvate, expanding, and concave. Flaking is bifacial, crude, and random. There is evidence of bevelling on both sides of the base.

**Size**

Length: current point to base 38 mm.
Width: greatest distance between current and missing shoulder 19.5 mm.
Thickness: 7 mm.

**Material**

black basalt

**Mean Length**

37.5 mm.

**Mean Width**

19.7 mm.

**Comparable Specimens**

Arthur 1966 (Type X)
Bentzen 1961 (Fig. 5, 34, 35)
Frision 1965 (Fig. 2, c)
Jennings 1957 (Fig. 8, Type W10, rt.)
Mulloy 1943 (Fig. 20, 22)
Mulloy 1958 (Fig. 6, 18)
Ruckdashel 1953 (Fig. 2)
Strong 1935 (Pl. 25, 1, b)
Swanson, Tuohy, Bryan 1959 (pg. 74, 26)
Taylor 1964 (Type IX)
Wettlaufer 1960 (Pl. 14, 1)
Wheeler 1954 (Fig. 1, a-d)

**Locations**

upper Yellowstone R., Montana
Powers-Yonkee Bison Trap, Montana
Spring Creek Cave, Wyoming
Danger Cave, Utah
Red Lodge Site, Montana
Level I, II, Pictographic Cave, Montana
lower Flathead River, Montana
Level I, Signal Butte, Nebraska
south central Idaho
Yellowstone Park, Wyoming
Level V, Longcreek Site, Sask., Canada
Wyoming

Using soil analysis, and a diagnostic point associated with bison bone, Wettlaufer (1960:50) has placed the "Hanna Culture" in Saskatchewan, Canada at 1,413 ± 115 BC. In referring to Wedding
of the Waters Cave in the Big Horn Basin, Frison has said:

---Level II is similar to the Spring Creek occupation in its lithic assemblage as well as in the small series of perishable items that was recovered. A radiocarbon date of 1,620 ± 200 years BP [approximately AD 330 ± 200] from level II is close to the Spring Creek date of 1,750 ± 200 BP [approximately AD 225 ± 200]. Both carbon samples were obtained from hearths. (1965:93)

Spring Creek Cave yielded an assemblage of stone artifacts diagnostic of the Late Middle Prehistoric Period. Concerning this point type in general, Mulloy (1958:162) has stated:

It is evident that this style occurs before Late Middle Prehistoric times though it is not prominent. The points which appear in later horizons may represent reused points or the persistence of the type as a minor style.

It will be noted that in many comparable sites along with the Dalton Site, McKean, Duncan, and Hanna points have been found together. According to Wheeler (1954:9-10), this is not unusual on the Northern Plains:

...the Duncan, Hanna, and McKean points appear to be substantive point types in the Northern Plains. They may be correlated with the first period of the medithermal age and may be interpreted, provisionally, as early manifestations of the "small point tradition." On stratigraphic and typological grounds, the three points seem to have originated in the following order: McKean, then Duncan, and then Hanna.

**Type IV "Corner Notched Projectile Point" Figure 14 (p. 63)**

**Specimen A**

This specimen is a stemmed corner notched point with slightly inversely tapered shoulders, of which small portions of both barbs are broken off. From the shoulders up the point is triangular or straight. The distal end is acute with a very small portion broken off.
rather wide, stemmed base is incurvate and slightly expanded, and is convex. Flaking is random, bifacial, and definite mainly around the edges of both sides. There is evidence of basal thinning on one side and bevelling on the other.

Size

Length: current tip to base 36 mm.
Width: widest point between current shoulders 18.5 mm.
Thickness: 5 mm.

Material
black basalt

Specimen B

This is a stemmed corner notched point with inversely tapered shoulders with both barbs broken off. From the shoulders up the point is triangular or straight. The distal end is acute and broken off. The stemmed proximal end is slightly incurvate and expanded and is slightly convex. Flaking is crude, random, and unifacial except for around the edges of both sides. There is slight evidence of basal thinning; and on the other side evidence of possible shaping as a large flake has been taken off the entire base portion of the stem.

Size

Length: current tip to base 26 mm.
Width: widest point between current shoulders 18 mm.
Thickness: 4 mm.

Material
black basalt

Specimen C

This is a poor specimen. It is a stemmed corner notched point, but the notches are not as precise as in other specimens. A portion of one shoulder is intact showing inverse tapering with the barb broken off. The distal end is broken off at approximately the mid section of the blade. The rest of the blade is broken along both sides. The stemmed proximal end is incurvate, slightly expanded, broken on both sides, and slightly convex. Flaking is crude, bifacial, and random. Possible basal flaking is marred by patination.
Size

Length: current tip to current base 24.5 mm.
Width: widest point between current shoulders 19.5 mm.
Thickness: 5 mm.

Material

black basalt

Specimen D

This is a stemmed corner notched point with inversely tapered shoulders of which both ends are broken off. From the shoulders up the point is triangular or straight. The distal end is acute and broken off. The stemmed proximal end is incurvate, slightly expanded, and broken on both sides and the base. Flaking is bifacial, horizontal transverse. Fine, hair-line fractures are obvious in the material.

Size

Length: current tip to current base 30 mm.
Width: widest point between current shoulders 19 mm.
Thickness: 5 mm.

Material

reddish-brown banded jasper

Mean Length:

29.1 mm.

Mean Width:

18.8 mm.

Comparable Specimens

Arthur 1966 (Type XIII)
Barnier 1971 (Fig. 6, k.l)
Forbis 1960 (Fig. 13, i-k)
Forbis, Sperry 1952 (Fig. 63, 3)
Malouf 1956 (Pl. II, 1, 2, from left)
Mulloy 1942 (Fig. 22, 9, type 6)

Locations

upper Yellowstone R., Montana shore, McDonald Lake, Mission Mtns., Montana
Old Woman's Buffalo Jump, Alberta, Canada
top level, MacHaffie Site, Montana
Level II, Flathead Lake, Montana
Hagen Site, Montana
Although this point type appears in Levels I and II of Pictograph Cave, in my opinion it is also diagnostic in Level IV, although it may be a retouched older specimen. Taylor (1964:118) has pointed out that these small triangular corner-notched points are widely distributed in almost all of the western states, and that when they appear in buffalo kill sites, they are predominately from the lower levels, although not in great numbers. He has further said:

At a campsite near Helena, Montana, where corner notched points were the only type present, they were associated with stone circles. An atlatl, or throwing board, weight was found there too, suggesting a fairly early date.

A larger form of this corner-notched type appears to have extended into historic times along Flathead Lake (Malouf 1956:Plate II). He has further noted (1962:4) the association of basalt and quartzite corner-notched points with conical pestles to be established in the Montana western region. At the Dalton Site we also found a portion of a conical pestle (our artifact Type XI). At the Birch Creek rock shelters in Idaho (Swanson, Butler, Bonnichsen 1964:116) 60.7 percent of all corner-notched points recovered appeared in the late time phase (Blue Dome) for that area and have been dated by the authors at 400 AD—AD 1,200.
Forbis (1960:94, 102) has called this type of corner-notched point the "High River Point." At the Old Woman's Buffalo Jump it was found in the lower part of the upper member and is considered by Forbis to be the earliest specimens in the small point tradition at that site. On the basis of radiocarbon dating he has estimated the time span of this point type to have begun at AD 600 and to have lasted about 750 years. At the MacHaffie Site (Forbis, Sperry 1952:131), corner-notched points are said to be reminiscent of Signal Butte II. Mulloy (1958:163) has placed corner-notched points with concave and convex bases in the Late Middle Prehistoric Period.

Type V "Side Notched Projectile Point" Figure 15 (p. 64)

Specimen A

This specimen is an unstemmed, deeply side-notched point. The shoulders are slightly rounded and both barbs are broken off. From the shoulders up, the point is crudely triangular with a small portion broken off. The proximal end or base is wider than the blade due to the rather wide, symmetrically placed side notches. It is straight to slightly convex. Flaking is almost bifacial, random, and crude. Basal thinning is slightly evident.

Size

Length: current point to base 31.5 mm.
Width: greatest point between two base tips 18 mm.
Thickness: 5 mm.

Material

black basalt

Specimen B

This is an unstemmed side-notched point. The shoulders are slightly rounded and both barbs are broken off. From
the shoulders up, the point is crudely triangular or straight. The distal end is acute but broken off. The proximal end is wider than the blade due to symmetric placement of the rather shallow notches. It is convex with evidence of placement of two basal notches by striking out a single flake in each area. Flaking is bifacial, and horizontal transverse. There is slight evidence of bevelling on one side of the base.

Size

Length: current point to base 29 mm.
Width: greatest point between two base tips 19.5 mm.
Thickness: 5.5 mm.

Material

cream colored agate

Specimen C

This is a shallow side-notched point that almost has a stemmed appearance due to the wideness of the side notches. The shoulders are rounded with both barbs broken off. From the shoulders up the point is crudely triangular although the acute distal end is broken off. The proximal end is not wider than the blade, and one end is broken off. The base is crudely straight with almost an incurvate pointed appearance. Flaking is random and almost bifacial with a small portion of the blade un-flaked. Basal thinning is evident.

Size

Length: current point to base 22 mm.
Width: greatest distance between the two shoulders 15 mm.
Thickness: 5 mm.

Material

white speckled black porphry

Mean Length:

27.5 mm.

Mean Width:

17.5 mm.
Comparable Specimens

<table>
<thead>
<tr>
<th>Specimens</th>
<th>Locations</th>
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<tbody>
<tr>
<td>Arthur 1966 (Type XX)</td>
<td>upper Yellowstone R., Montana</td>
</tr>
<tr>
<td>Brumley 1971 (pg. 27, H)</td>
<td>Wahkpa Chu'gn Site, Montana</td>
</tr>
<tr>
<td>Forbis 1960 (Fig. 12, n. q)</td>
<td>Old Woman's Buffalo Jump, Alberta, Canada</td>
</tr>
<tr>
<td>Gruhn 1961 (Pl. 14, m; Pl. 37, f)</td>
<td>Wilson Butte Cave, Idaho</td>
</tr>
<tr>
<td>Loendorf 1969 (Type XI)</td>
<td>Pryor Mtns., Montana-Wyoming</td>
</tr>
<tr>
<td>Mulloy 1942 (Fig. 22, 14)</td>
<td>Hagen Site, Montana</td>
</tr>
<tr>
<td>Mulloy 1958 (Fig. 6, 36)</td>
<td>Level III, Pictograph Cave, Montana</td>
</tr>
<tr>
<td>Taylor 1964 (Type XIVb)</td>
<td>Yellowstone Park, Wyoming</td>
</tr>
</tbody>
</table>

Malouf (1962:4) has considered side-notched points in western Montana to be resultant of overwhelming influence from the eastern plains areas at about the time Europeans began to settle and appropriate North America. Taylor has pointed out (1964:122) that this type of projectile point is the most frequently occurring form in most collections from Montana buffalo kill sites. He has stated:

This point, often made of obsidian, has been found associated with tubular pipes and steatite bowls. Then they are generally considered Shoshone in origin and are late [1,500-1,700] in the Prehistoric period.

This type of side-notched point appeared in "Wilson Butte Assemblage VI" in stratum A of Wilson Butte Cave (Gruhn 1961:122). She has arrived at a radiocarbon date of AD 1,535 ± 150 for mid stratum A, and has contended that this phase probably dates from about AD 1,300 to AD 1,700-1,750. In her "comparable types" of this type of side-notched point on page 67, she has referred to Baumhoff and Byrne's "Desert Side-notched Points." Forbis (1960:96, 100), has labeled the wide side-notched points "Nanton Points." At the Old Woman's Buffalo Jump in Alberta, they comprised about one-half of the specimens in the middle of the small-point
sequence, and appeared to diminish in frequency both in earlier and later times. This contention seems to be supported by the apparent absence of side-notched points in Pictograph Cave IV, and their occurrence in Pictograph Cave III, a prehistoric component. Forbis has estimated the time range of Nanton Points to be at AD 600-1,700. Brumley (1971:16) has found what he also calls Nanton side-notched points in Layer 4 of excavation units 107, 108, and 123 of the Wahkpa Chu'gn Site, Havre, Montana. Using a sample of charred bone with associated small side-notched points, he obtained a radiocarbon date of AD 550 ± 80 years. McNeish (1964:40) has called this type of point "Prairie Side-notched" or "Plains Side-notched" depending on its size.

Prairie Side-notched are:

...roughly triangular in outline but have small side notches just above their bases. They range from 19 mm. to 33 mm. in length, from 15 to 30 mm. in width, and are between 2 and 6 mm. in maximum thickness.

Plains Side-notched points are:

...also roughly equalateral triangles in outline with small side notches. They range in length from 10 to 18 mm, in width from 8 to 16 mm, and are usually about 2 mm thick. These points graduate into the Prairie Side-notched types and are probably derived from them. In the historic Cree site of Alexander's Point they are the dominant type. Generally speaking, survey indicates they are widespread in Manitoba at historic times.

Mulloy (1958:163) has placed small, side-notched points with flat or concave bases in the Late Prehistoric and Historic Periods.
Type VI "Triangular, Unnotched Projectile Point" Figure 16 (p. 64)

Specimen A

This is a stemless, unnotched, triangular or straight-sided point with the distal end broken off. The base is rounded, very slightly notched, and shows evidence of thinning. Flaking is horizontal transverse and almost bifacial.

Size

Length: current point tip to base 26.5 mm.
Width: greatest distance between straight sides 16 mm.
Thickness: 4 mm.

Material

black obsidian

Specimen B

This is a stemless, unnotched, triangular or straight-sided point with the distal end broken off. The base is avriculate with one corner broken off, and one side showing evidence of thinning. Flaking is bifacial and horizontal transverse.

Size

Length: current point tip to base 23.5 mm.
Width: greatest distance between straight side 15 mm.
Thickness: 4 mm.

Material

milky-white chert

Mean Length:

25.0 mm.

Mean Width:

15.5 mm.

Comparative Material

Arthur 1966 (Type XXIV) upper Yellowstone R., Montana
Bliss 1950 (Fig. 58, top) Level IV, Birdshad Cave, Wyo.
Brumley 1971 (pg. 27, u) Wahkpa Chu'gn Site, Montana
Missouri River, near Helena, Montana
MacHauffie Site, Montana
Danger Cave, Utah
Pryor Mtns., Montana-Wyoming
Hagen Site, Montana
Levels I, II, III
Pictograph Cave, Montana surface, southwest Idaho
south central Idaho
Yellowstone Park, Wyoming

At the MacHauffie Site (Forbis, Sperry 1952:131) unnotched triangular projectile points are said to be reminiscent of Signal Butte II. Lumped as "squat lanceolate" by Swanson, Butler, and Bonnichsen (1964:99, 116), in the Birch Creek rock-shelters of Idaho, unnotched points occurred almost equally percentage-wise in Phase II, or the Bitterroot Phase (5,000 BC--1,000 BC); and Phase IV, or the Blue Dome Phase (AD 400--AD 1,200). Mulloy (1942: 46, 55, 101) has pointed out that these "points" may more plausibly be knives. At the Hagen Site they are found in conjunction with pottery which Mulloy has deemed closely related to the Mandan-Hidatsa-Crow group. Arthur (1966:120) has said that projectile points of this type are most often found in the bone deposits of buffalo jumps. Brumley (1971:16, 26, 27) has called this type of point "Plains Triangular." He has found examples of it in the upper portion of layer 9 which is next to bedrock in excavation units 107, 108, and 123 of the Wahkpa Chu'gn Site. A radiocarbon date of 50 BC ± 70 years from excavation unit 102 is based on unburned bison bone relating to the earliest
cultural materials at that site. Mulloy (1958:163) has placed small triangular points without notches in the Late Prehistoric Period.

Type VII. "Expanded, Basal Notched Point"  Figure 17 (p. 64)

Specimen A

This is a corner-notched point with inversely tapered shoulders. From the shoulders up it is triangular or excursive. The distal end is acute and the stemmed proximal end is expanded or "dog-eared" and indented. Flaking is unifacial with one side worked only around the edges, and the other exhibiting random flaking and a thinned base.

Size

Length: point tip to base 29.5 mm.
Width: widest point between shoulders 20 mm.
Thickness: 4.5 mm.

Material

moss-brown siltstone

Specimen B

This is a corner-notched point with inversely tapered shoulders and one barb slightly broken. From the shoulders up it is triangular or excursive. The distal end is acute with a small portion broken off; and the stemmed proximal end is expanded very slightly with one small basal notch. Flaking is unifacial with one side worked only around the edges, and the other exhibiting random flaking and a thinned base.

Size

Length: from current tip to base 24.5 mm.
Width: widest point between the shoulders 18.5 mm.
Thickness: 4 mm.

Material

moss-brown siltstone
Specimen C

This is a corner-notched point with inversely tapered shoulders and one barb slightly broken. From the shoulders up it is triangular or excursive. The distal end is acute with a portion broken off, and the stemmed, indented proximal end is unevenly expanded, with a portion of one side of the base broken off. Flaking is random and almost bifacial. On one side the base appears to be bevelled.

Size

Length: current point tip to base 23 mm.
Width: widest point between shoulders 21.5 mm.
Thickness: 4 mm.

Material

moss-brown siltstone

Specimen D

This is a widely corner-notched point with notches quite close to the proximal end of the blade. From the shoulders up it is triangular or excursive. The shoulders are small, slightly inversely tapered, and one barb is broken off. The distal end is acute and slightly broken off; and the stemmed proximal end is expanded, and rather sharply notched with one base broken off. Flaking is crude, random and almost bifacial. The base is slightly thinned.

Size

Length: point tip to current base 26 mm.
Width: widest point between shoulders 17 mm.
Thickness: 4.5 mm.

Material

black basalt

Specimen E

This is a very poor specimen with crude corner notches and inversely tapered shoulders with both barbs broken. From the shoulders up it is barely triangular or excursive. The distal end is broken off and the stemmed proximal end exhibits only one "dog ear" of an expanded base. Flaking is crude, unifacial and random. On one side the base appears to be thinned.
Size

Length: current point tip to base 23.5 mm.
Width: current base tip to current shoulder 18 mm.
Thickness: 4 mm.

Material

black basalt

Mean Length:

25.3 mm.

Mean Width:

19.0 mm.

Comparative Specimens

Butler 1962 (Type 3)
Forbis 1950 (pg. 6, 83)
Gruhn 1961 (Pl. 34, a, b)
Malouf 1956 (Pl. II, 2nd from left)
Mulloy 1958 (Fig. 6, 33)
Taylor 1964 (Type XVII)
Taylor 1973 (Type SCa3)
Tuohy, Swanson (Fig. 1, 4)

Locations

Craig Mountain Section, Columbia Plateau
Missouri River near Helena, Montana
Wilson Butte Cave, Idaho
Level IV, Flathead Lake, Montana
Level II, Pictograph Cave, Montana
Yellowstone Park, Wyoming
Libby Reservoir Area, Montana
southwest Idaho

Taylor (1964:126) has noted that although this form does appear sporadically, it does not occur frequently in Montana sites. Gruhn (1961:119, 120) found this artifact type in Assemblage III which occurred in the upper part of Stratum C at Wilson Butte Cave. She obtained a radiocarbon date of 4,890 ± 300 years BC for this occupation. Expanded, basal notched points were found in the earliest occupation and strand level of Flathead Lake (Malouf 1956). Tuohy and Swanson (1960:23) found a
comparable point in the earliest level of Rockshelter 10-AA-15 where it was associated with pottery. They have approximated the date of this level on the basis of soil deposits at ca 2,000 BC. This point type is quite similar to what Swanson, Butler, and Bonnichsen (1964:99, 116, Fig. 37, b) have called "Elko-eared Points." In the Birch Creek rockshelters these occurred predominately in the Beaverhead Phase or Phase III (and somewhat in the Bitterroot, or Phase II) which the authors have radio-carbon dated at 1,000 BC--AD 400. Stemmed indented points which are used in this case as comparative specimens, also seem to fall within Phase III at the Birch Creek rockshelters. Type VII is also very similar to what Swanson and Bryan (1964:5, m, n) and Aiken (1970:42, Fig. 21, d) call "Pinto Points" and "Pinto Barbed Points" respectively. In the Birch Creek rockshelters of Idaho, Swanson and Butler have found pinto points to be in Phase III as above; and Aiken has found them in strataums 7 and 8 of Hogup Cave in the Great Salt Lake Desert of Utah. He has dated stratum 7 at 4,240 BC, and stratum 8 at 2,660 BC. Mulloy (1958) does not include this point type in his trait list, but since several comparative examples were found in Level II, it seems likely that this type might fall within the Late Middle Prehistoric Period.

Type VIII "Large Stemmed Blade" (portion) Figure 18 (p. 65)

Specimen A

This is the proximal end and portion of a blade of a large symmetrically side-notched tool--probably a knife with notches to facilitate hafting. The blade was
probably triangular shaped; and the distal end acute. The base is equal in width to the blade and is straight. Flaking is bifacial and random with slight evidence of basal thinning.

Size

Length: slightly below what would be midsection to base 28 mm.
Width: point between two base points 26.5 mm.
Thickness: 7.5 mm.

Material

red siltstone

Type IX "Blade" Figure 19 (p. 65)

Specimen A

This is a pyriform shaped blade with excursive sides and bases. It is crudely chipped bifacially and has random retouch.

Size

Length: 63.5 mm.
Width: 37 mm.
Thickness: 6 mm.

Material

brown-grey siltstone

Comparable Specimens

Arthur 1966 (Type X)

Locations

upper Yellowstone R., Montana

Type X "Scrapers" Figure 20 (p. 65)

Specimen A

This is an elongated end scraper. It is plano convex, with the back completely flaked, and unifacial retouch evident around the edges. This appears to be a multiple use tool consisting of a scraper--possibly side as well as end--a knife; and some type of perforator.
Size
Length: 36 mm.
Width: 19.5 mm.
Thickness: 6 mm.

Material
red banded jasper

Specimen B
This is quite a slim, elongated end scraper. It is plano convex, and the back is almost totally flaked except for one smooth, narrow section extending half the length of the artifact. Retouch is evident on the sides and leading edge possibly to sharpen the tool or use it also as a side scraper.

Size
Length: 38.5 mm.
Width: 14 mm.
Thickness: 6.5 mm.

Material
red banded jasper

Specimen C
This is a broken ovate scraper, having a broad leading edge allowing it possibly to be called a thumbnail scraper. It is plano convex and unifacially flaked. On the bottom of the tool, on the broken area, there is evidence of minute retouch.

Size
Length: 22 mm.
Width: 18.5 mm.
Thickness: 5.5 mm.

Comparable Specimens
Swanson, Powers, Bryan 1964 (Figs. 10, 11, 12)

Locations
southwest Idaho
Type XI "Pestle" (portion) Figure 21 (p. 65)

Specimen A

This is a broken portion of a pestle. The end shows much use from abrasions and pecking marks probably from pounding. It appears to have had a narrower end than a mid section.

Size

Length: 55 mm.
Width: 47 mm.
Thickness: 29 mm.

Material

stream rolled pink granite

Comparable Specimens

Malouf 1962 (Fig. 1)

Locations

western Montana, northern Idaho, southeast British Columbia

Malouf (1962:3) has pointed out that in some reports pestles are called "mauls." Of the two actually distinct tools, pestles arrived earliest in western Montana. No mortars were used with the pestles, as they were used against a stationary, flat, smooth rock. Modern Salish speakers and the Kutenai used pestles for grinding and pounding berries. Malouf has stated:

...the act of making pestles originated outside of western Montana, although the conical shape they assumed here was unique in an area covered by western Montana, northern Idaho, and southeast British Columbia. Pestle usage was lacking in principle to the east in the Great Plains and Central Plains. Pestles thus were basically a Columbian trait. (1962:3)

He has further maintained that pestles originated during the Late Prehistoric Period.
All artifacts are drawn actual size.

Type I, Figure 11
Specimen A

Type II, Figure 12
Specimen A

Type III
Figure 13
Specimen A
Specimen B

Type IV
---
Figure 14
Specimen A
Specimen B
Specimen C
Specimen D
Whetstone Ridge

The second site to be considered in this paper is located on the top of Whetstone Ridge within the Castle Mountains. Discovered by Mr. Harlan Lucas of Harlowton, Montana and recorded by the Billings Archaeological Society, it has been designated as 24 Me 555 in compliance with the Smithsonian Institution system of classification and is called "Luke's Site" after Mr. Lucas. It is located with reference to the Montana Principal Meridian in the N/E 1/4 of the S/W 1/4 of Section 30 in Township 9 North, Range 10 East, in Meagher County, Montana.

Whetstone Ridge is a high, rugged land formation averaging approximately 6,834 feet in elevation, and extending out and above the surrounding countryside. The ridge's crown is plateau-like in its flatness. Stands of lodge-pole pine, douglas fir, western white pine, and occasional junipers are interspersed by grasses and meadows—some of which cover large areas. There is no standing or running water on the ridge; a spring is located below the ridge to the west. The East Fork and West Fork of Whetstone Creek flow in an east-northeast direction below the eastern rim of the ridge; and the various forks of Flagstaff Creek are found southwest of the western rim of the ridge. Rough, eroded limestone outcrops exist along the western and eastern rims of the ridge, and form a steep canyon at its northwestern tip. Flagstaff Creek flows through the canyon at this point. The whole area is traversed by east and west descending and ascending game trails. Deer, antelope, coyote, owls, eagles,
grouse, skunk, prairie dogs, and rabbits were observed on or near Whetstone Ridge in August, 1973. (Figure 22).

Description of Luke's Site

The majority of Luke's Site is found along the western and southwestern forested perimeter of a large meadow on the top of Whetstone Ridge. It consists of a series of "walls," all of which are constructed of dead-fall timber, some of which is mossy, much of which is rotting, and some that has sustained a forest fire. The sizes of the elements in the walls range from small branches to large logs. All pieces are stacked horizontally. Many are piled in zig-zag fashion, with some having an almost woven appearance. Some snags have been utilized in situ. Cuts with a sharp instrument such as an axe or hatchet are evident on some of the wall components, although they had not been felled with an axe or hatchet before they were stacked. The walls average four and one-half feet to five feet in height and three and one-half feet in width. The roughly three-sided structure appears to form a crude, "V"-shaped funnel complex. It has an open eastern side, and forms a confluence at four living fir trees that act as the apex of the funnel. (Figures 23, 24, and 25). At one other point, 110 degrees east, south-east of sixty degrees east of north, two walls of the complex also terminate at a seven foot high burned stump. (Figures 26, 27, 28, and 29).
FIGURE 22. Aerial photograph of Whetstone Ridge. Section 30 is designated.
all directions are magnetic and east of north

four trees at the apex:

FIGURE 23. The four trees at the apex are represented by dots. The distance between each is delineated.

FIGURE 24. Scale drawing of the apex and angle of extending walls.

FIGURE 25. Outline of corral structure.
FIGURE 26. View of portion of wall of the corral. A four foot, four inch scale is represented.

FIGURE 27. View of wall portion at north end of the meadow.
FIGURE 28. View of four tree apex of the corral.

FIGURE 29. View of northwest corner of the corral structure, showing seven foot portion of burned tree.
Tree #1 of the four trees confluence at the funnel apex is approximately fourteen inches in diameter at the base and has a completely closed or healed blaze on the side facing the wide interior of the complex. The scar is six feet above the ground and is two vertical feet long. Tree #2 is approximately ten inches in diameter and has a small, grooved area on its northeast side. The grooves are in close proximity to each other—half to three-fourths of an inch wide, three inches long, horizontally oriented, and appear to have been worn into the bark recently, as the color of the worn surface is lighter, and there is no lichen covering the area as in the walls or other trees nearby. A fifth tree northeast of tree #2 has a series of four, vertical, healed or closed blazes one above the other, four feet to six feet above the ground on its northwest surface. Tree #3 is approximately thirteen inches in diameter, and has several blaze scars on its surface. Tree #4 is approximately six and one-half inches in diameter and has a healed or closed blaze on its northwest side, five feet above the ground, and extending vertically eight inches. A large tree standing along the southwest wing, approximately thirty degrees northwest of the confluence has a healed blaze scar that is vertically nine feet, and is ten inches wide. The wall complex and four-tree confluence occupy an area of 15,975 square feet, or approximately one-third of an acre.

Approximately seventy-nine degrees south of the four-tree confluence are the moss-covered stumps of five trees obviously
cut with a sharp instrument, and appearing to lie in a semi-
circle. The stumps average three to four inches in diameter. 
(Figure 30). A series of taller and thicker stumps are located 
approximately 100 yards south of the corral structure.

A "trail" paralleling Whetstone Ridge, and approximately 
six and one-third feet wide extends unbroken in a predominately 
northwesterly-southeasterly direction through the timber lying 
north and south of the meadow complex area, and through the 
meadow itself. Although beaten down over the last three years 
by four-wheel drive vehicles, the trail is completely hidden from 
view upon arrival at the top of the ridge and is not easily 
found unless one is guided to it. The trail extends through the 
site for approximately one mile and appears to be associated 
only with the site itself, as it ceases to exist beyond the 
general boundary of the site.

North and south of the meadow wall complex and scattered 
throughout the surrounding timber lie a series of woodpiles. 
Fourteen piles are located west of the trail along both its 
northern and southern portions, although the northern portion 
of the trail seems to diminish while the woodpiles extend be-
yond its conclusion. Four woodpiles are found east of the 
trail along its northern extension, and five woodpiles are 
found east of the trail along its southern extension. Those 
woodpiles found west of the trail appear generally to parallel 
the ridge, while those east of the trail preside perpendicular 
to, or at an odd angle to the topography of Whetstone Ridge.
FIGURE 30. Stump located south of four-tree apex, showing obvious axe or hatchet marks.
They appear to be smaller replicas of the wall complex. All piles consist of large and small dead fall material laid horizontally, with some utilizing connected roots in situ. Many of the components are moss and lichen covered, and rotted, and some places have obvious axe cuts on them, although these parts have not been cut down per se. The piles range in height from two to three and one-half feet; length from six to ten feet; and in width from three to five feet. There are no singular, similar woodpiles within the meadow wall complex, or the meadow itself. The majority of the piles are well hidden. (Figures 31 and 32). The entire site of 24 Me 555 covers an area approximately one and one-eight mile long and 250 feet wide. (Figure 33).

No lithic debris was found on the surface of the site. No evidence of personal cooking or campfires was noted. Surface faunal remains consisted of several bones found in a hollow log near the four-tree confluence, a large rib lying on the southeastern wall of the complex, and a young antelope skull found lying on the ground north of the site and later accidentally destroyed.

According to District Ranger Blaine C. Tennis of Harlowton, domestic stock do currently occasionally graze in the Whetstone Ridge area, and horses could subsist well there during certain seasons (personal communication, December 3, 1973). However, information acquired from pioneers in the Harlowton and White Sulphur Springs areas by Mr. Harlan Lucas has indicated that
FIGURE 31. View of woodpile found north of corral structure. A four foot, four inch scale is depicted.

FIGURE 32. View of woodpile found north of corral structure.
FIGURE 33. Aerial photograph-map of 24 me 555. Corral walls are depicted in solid lines; the woodpiles are depicted with an "X". The site is divided into quarter-mile portions.
there was very little previous use of high elevations in the Castle Mountains and surrounding areas for domestic pasture. Art A. Watson, who was born and raised in Meagher County and the Smith River Valley, and Big Belt Mountains in particular, has mentioned utilization of mountain range only during times of dire necessity:

The Binghams continued and enlarged their ranching operations until the disastrous season of 1919, when one of the worst droughts on record struck Montana. Wild meadows that usually grew ample hay for carrying cattle and sheep through the winters, grew nothing. There was no water with which to irrigate; there wasn't the slightest rainfall through the summer and the springs dried up. Ranges barely supplied forage enough to pull the stock through the summer and even this was only possible in the areas of high elevation and mountains. Such a situation was unknown to most of the stockmen. . . . (1967:136)

Thus, it seems probable that 24 Me 555 was not a stockman's corral, branding pen, or sheep-shearing hold. Research into the possibility of the wall and pile complex on Whetstone Ridge being the result of clearing activities during the 1930's and the stacking projects of the CCC on Forest Service land, has indicated that such projects were carried out in Meagher County only in the King's Hill and Duck Creek area (Lucas: personal communication, November 5, 1973); and that there are no records of such work on Whetstone Ridge or the Castle Mountain area (Tennis: personal communication, December 3, 1973). The presence of other such traps in surrounding mountain areas increases the likelihood that 24 Me 555 is aboriginal.
On August 25-27, 1975, in compliance with Forest Service Special Uses Permit number 2720, and with special permission from District Ranger Blaine Tennis of Harlowton due to extreme fire danger in the Castle Mountain area, a series of four non-connected test pits were dug on the site of 24 Me 555 to discern any possible subsurface aboriginal occupation, lithic debris, and faunal remains. Excavation involved skim shovelling two to three inches at a time from the total horizontal extension of the pit, screening each shovel full, and terming each section removed as a "level." The pits were subsequently filled back in after excavation.

Test Pit #1 was five feet by five feet square. It was set in the inner southwest corner of the complex at the point where the walls meet the four-tree apex forming a crude "V", and seeming to form a definite trap at trees #1 and #4. Original datum levels for all four corners of the pit were four feet two and one-half inches. Just below current pine duff were found five irregularly shaped limestone fragments four inches to ten inches in diameter, lying touching and overlapping one another along the inside of the northeast wing of the complex, partially underlying its components and leaning against tree #1. Similarly, approximately fifteen lineally arranged stones were found lying touching each other inside the southwest wall toward the wider part of the complex, and under the wall's components at tree #3. Level #1 extended down in all four corners. It consisted primarily of grey, sandy soil mixed with deep, chocolate-brown humus containing grass,
rotted and burned wood, mammal dung, and pine cone seeds. Level #2 extended down in all four corners. It proved to be more difficult to shovel, being completely embedded with fist-size limestone rocks. What soil there was on the "surface" above the rocks showed evidence of burning, particularly in the center, and small bits of charcoal were evident throughout the screened parts of this level. Level #3 was generally reddish to light brown in color, although in the northwest corner of the pit, the soil had a gravelly, grey appearance. In the southwest and southeast corners by tree #1 and tree #4, the largest rocks in the pit were found, possibly associated with the large rocks incorporated within the adjacent wooden fences. As this level progressed, roots, and rocks made level excavation extremely difficult and finally impossible, and level #3 and pit #1 were closed at 5' 3/4" BD S/W
5' 1" BD N/W
5' 1/2" BD N/E
5' 1" BD S/E,
and deemed sterile in entirety.

Test pit #2 was dug in the northwest corner of the complex within the two walls that terminate at a seven foot portion of a large, dead, erect, burned tree. This seemed the second logical place to possibly trap game since the walls have an almost "V" or funnel shape apoxing at the dead tree, with components that resemble those components in the meadow's southwest corner. Original datum levels were set at surface in all four corners of the five foot by five foot square. Level #1 had components
very similar to levels #1 and #2 of pit #1, but with less mammal
dung and more rapidly appearing limestone rocks, although none as
large as in pit #1. The soil was dark brown to reddish brown,
banding occasionally into what resembled rotted, grey sandstone.
Bits of charcoal were occasionally noticeable prior to screening
and large roots shortly became extensive. Level #1 extended
down in all four corners. In level #2, the soil remained similar
to level #2 in pit #1, and level #1 of pit #2, with increasingly
larger roots becoming solidly incorporated with rocks. In an
attempt to get beyond this level, level #2 was excavated down to
13" BD in all four corners. Level #3 was extended down to
15" BD S/W at which point tenacious, compact rock was en-
15 1/4" BD N/W
15 1/4" BD N/E
15 1/2" BD S/E,
countered and pit #2 was closed and deemed sterile.

Test pit #3 was laid along and outside of the western wall of
the corral structure and located one hundred feet from the north­
west corner, and 148 feet, six inches from the southwest corner
of the structure. It was decided that since historic game trails
obviously crossed the wooden wall at this point, testing here
would be feasible. Due to the unexpected difficulty in excava­
tion, a time factor, and the sterility of pits #1 and #2, pit #3
was reduced to a three foot by three foot square. Original datum
levels were set at surface in all four corners of the square. The
surface had sparse grass growing in it and was covered with pine
needles. What up to this point had been difficult shovelling and
fruitless screening was replaced by trowelling, and immediately yielded limestone rocks mixed intermittently with reddish-brown soil. No roots or charcoal were discernible. Level #1 extended down to 7" BD in all four corners of the square, and due to its similarity to the sterile levels in pits #1 and #2, and cohesive, rocky soil, pit #3 was closed.

Pit #4 was placed within the "corral" but away from any wall structures, and out into the incorporated meadow. It was five feet by five feet square and the southwest corner post of the pit was sixteen degrees west of north, readings taken from between trees #1 and #2. Original datum levels were set at surface in all four corners of the square. The surface was completely covered with alpine grasses. Excavation involved shovelling and screening. Level #1 extended down to 2" BD in all four corners. It consisted of very dark, rich, heavily matted sod with occasional small limestone rocks. Level #2 extended down to 6" BD in all four corners. The soil remained rich, with less grass roots and became rockier than previous levels. Level #3 extended down to 12" BD in all four corners. The soil became drier and light brown in color, with limestone rocks increasing in quantity and size. Level #4 extended to 15" BD in all four corners with no difference in result from the previous levels. No charcoal had been noted throughout the pit. When it became obvious that pit #4's components were basically no different from those of the previous pits, and with pressure from sudden rain and lightning, pit #4 was closed and deemed sterile at
15 1/2" BD S/W
16" BD N/W
16" BD N/E
15 3/4" BD S/E.

It is probable on the basis of lack of subsurface lithic debris from pits #1 through #4, that 24 Me 555 is strictly an aboriginal surface site. No subsurface evidence as to faunal utilization in relation to the site was acquired. Bits of charcoal found in levels #1 and #2 of pit #1, and level #1 of pit #2 lend positive evidence to the theory that a fire has swept through this area of Whetstone Ridge in the past and that fire's correlation with previously burned components of the corral structure and woodpiles, and the scarred trees in the southwest corner of the complex. Percy Knauth has stated:

The north woods are full of sharply defined demonstrations of the pattern of fire's impact. . . . the periodic passage of flames can actually be dated. . . . by boring sections through the scars and counting the growth rings around them, scientists can produce a calendar on which the dates of ancient fires can be exactly calculated. (1972:46)

Since the Forest Service has no record of a fire on Whetstone Ridge or that particular area of the Castle Mountains, an attempt to determine the date of the fire, and consequently date the corral complex on it was made. The method used to do this was by removing cores with a wood borer from the healed scars and an untouched area of trees #1 and #4 respectively. Under the direction of Dr. Miller of the University of Montana Botany Department, the cores were then sanded flat, smooth, and shiny with extremely fine sandpaper, and then after some instruction, I was able to count
the annual growth rings of each core. By taking cores from unmarred areas of the trees their age could be determined; by taking cores from scarred areas, the date of the fire could be learned. I have concluded that the fire occurred on Whetstone Ridge 106 to 110 years BP; and tree #1 is 150 years old; and tree #4 is 132 years old. Thus, it is probable that the trap complex on Whetstone Ridge was constructed around AD 1,864.

Interpretation of Both Sites' Features

It is probable that 10 Se 2 and 24 Me 555 are each a type of unique aboriginal game trap. At the Dalton Site the gentle sloping face between the hill to the east and southwest, and the knoll on the west forms a natural funnel with the probability of having a collecting basin for game at its base, since the face offers good feed and water for several species of mountain herbivores. Game animals were probably coerced out of the collecting area at the base of the southern face and on up the face proceeding into the natural funnel toward the ridge crest. Single occupants in the pits could have signalled from one pit to another on up the knoll as to how the "drive" was progressing; to prevent the animals from bolting up out of the funnel and heading to safety in an east or westerly direction; and to encourage the animals to continue movement toward marksmen hidden in ambush along both sides of the extending ridge. Since no lithic debris was noted near the pits it is doubtful that animals were felled from them. Once on the ridge crest, the animals
were forced to either pick their way out onto the ridge extending into Montana or plunge to their deaths on either side of it. From the lithic debris near this exit ridge, it is probable that few animals escaped. The function of the rock pile is more difficult to conjecture than the pits. Although it offers no seclusion or protection like the pits, it may have served as a boundary or limitation marker for where the game was to be coerced. Perhaps it is more associated with the trail along the state line ridge and is a representation of the type of Indian trail markers of rock cairns or piles noted by Lewis and Clark in the Bitterroot Mountains, June 17, 1806 (Coues 1965:1056) and described by Malouf (1964:13, 14). Possibly it plays no part in the "game drive" whatever but is a survey marker, or another sheepherder's mound similar to one sighted and photographed one-half mile northwest of the site.

As at the Dalton Site, game trapped at Luke's Site were driven or forced up from the natural "collecting basins" of canyons, draws, and meadows below the eastern and northeastern rim of the ridge, and onto its top. This feat could have been accomplished by several people--perhaps women and small children, oldsters still able to walk well, or with the aid of dogs (Lowie 1924:215)--descending the eastern side of the ridge, walking away from it a way, and then turning back toward the ridge's eastern rim, and systematically retracing their steps. What game there was in that area would thus be frightened and pushed ahead of the people, and onto the ridge top. Turney-High (1957:
has described this hunting method as used by the Flathead Indians. The male hunter(s) were positioned on a high saddle or other natural, high feature, while the other members of the family dropped below. They then slowly moved up the collecting basin forcing the game up and into the waiting hunters' range of fire or kill. Gilmore (1953:149) has described a similar method of coercing mountain goats into a corral structure by the Nevada Paiutes (Shoshones). Similar to the function of the pits at 10 Se 2, the woodpiles lying predominately perpendicular to the trail's eastern side would serve to keep the animals moving westward toward the corral; and the woodpiles lying parallel to the trail on the west side served to turn the animals into the corral complex from the north and south and to block them from descending the western rim of the ridge. Each pile was probably manned by one person, each equipped with a good voice, noise-maker, or flapping robe to coerce and frighten the animals. Once within the trap area of the meadow and its corral structure, skilled hunters could quickly surround and kill their prey with the open eastern and southeastern portions of the enclosure suddenly being filled in by heretofore hidden marksmen. The lack of surface faunal and lithic remains in any quantity probably indicates that the dead animals were dragged from the enclosure and butchered elsewhere, although it is possible that carrion eaters almost totally eliminated what scraps may have been left on the site; and valuable trade tools and weapons were taken from the site with their owners.
CHAPTER IV

ETHNOLOGICAL IMPLICATIONS

Mulloy (1958:220-222) has divided the history of human occupation on the northwestern Plains into five broad slices of time with each seeming to have a rather distinct culture complex. He has estimated the following beginning dates for these periods: Early Prehistoric Period around 10,000 BC; Early Middle Prehistoric Period 3,340 BC; Late Middle Prehistoric Period AD 0 (this conservative date is probably doubtful—Butler, 1964:39) has set the beginning date for the Late Middle Period at around 1,500 BC, which to me seems more logical); Late Prehistoric Period AD 500; and the Historic Period AD 1,800—which would vary considerably with each site locality, and time of first aboriginal contact with whites.

**Early Prehistoric Period** (ca. 10,000 BC to 7,000 BC)

Conner (1968:15) has described the Early Prehistoric Period as follows:

The early Prehistoric or Paleo-Indian Period on the Northwestern Plains began at least 10,000 years ago and lasted an estimated 3,000 years. There can be no doubt that elephants and Paleo-Indians were contemporaries on the Northwestern Plains, although their remains have not been found in association. An unpublished mammoth discovery in the Middle Yellowstone has been carbon dated at 8,800 years BP ± 300 years. Glaciation had a more direct
effect on the early people on the Northwestern Plains than elsewhere. In Saskatchewan continental ice was retreating during the Paleo-Indian period. Man followed the receding glaciers northward. Paleo-Indian projectile points [which are characteristically rather long, often fluted, and parallel-flaked lanceolate blades] have been found at high altitudes in mountain ranges situated in the Northwestern Plains area. In the Absaroka Mountains of Montana and Wyoming near Yellowstone National Park, these sites are on high plateaus and ridges between 9,000 and 10,500 feet above sea level. The locations are adjacent to the positions of former alpine glaciers.

Early Middle Prehistoric Period (ca. 3,000 BC to 1,500 BC)

According to Mulloy (1954:433-434), shortly following the Prehistoric Period is a time span of uncertain length for which definite archaeological evidence is lacking. This could indicate that the area was humanly abandoned or simply that nothing has been found yet. Antevs (1955:328) has found geological evidence in the American Southwest to indicate a period of extreme dryness or at least modulation to a climate drier and warmer than before in that area--the onset of which he has postulated at around 5,000 BC, and which is taken by many to be the reason for lack of archaeological evidence from areas farther north at that time. This climatic sequence has been called the Altithermal by many scholars. Antevs (1955:317) called it the "Long Drought" and Butler (1964:39) called it "Period III". From sometime before 4,000 BC and on into the Middle Prehistoric Period, evidence obtained from many sites in Montana, Wyoming, and Idaho does seem to indicate the onset of a drier climate and a change in life-way from a traditional hunting subsistence to a more inten-
sive exploitation of the environment (Taylor 1964:186). Concerning early Middle Prehistoric evidence at Pictograph Cave, Mulloy (1958:209) has noted:

The evidence reflects a way of life appreciably different from the earlier period in much increased vegetable gathering orientation and lack of larger animals particularly buffalo.

Associated point types for this period are the McKean, Duncan, and Hanna Points (Taylor 1973:113). At 48 Ck 204 in Wyoming, the McKean Point was found associated with other points, blades and scrapers along with hammers, grinding slabs, and bones of bison, and deer or antelope (Wheeler 1951:48). Bliss (1950:191) stated that the paucity of artifacts in Birdshead Cave, Wyoming, Level II which correlated with Signal Butte Level I, could indicate a food-gathering economy with hunting of secondary importance. At Wedding of the Waters Cave in the Big Horn Basin, Frison (1965:93) found perishable items which are usually associated with a foraging existence, along with stone tools and a bison, humerus abrader. Mulloy (1954) acquired a scanty collection of animal bones from both the upper and lower levels of the McKean Site, thus suggesting that hunting may not have been very important. Considering the implications of Wilson Butte Cave in Idaho, Bruhn stated:

Towards the end of the Anathermal Period, there was apparently a gradual change in climatic conditions in southern Idaho, a trend toward increasing aridity and the hot, dry Altithermal period. Increasing drought may have forced the hunters of the lanceolate, parallel-flaked point tradition off the Snake River Plain at this time. The
evidence from Wilson Butte Cave indicates re-placement in the region by an early tradition from the Great Basin area, characterized by stemmed, indented based point. These new people from the basin were probably adapted to the more arid climatic conditions there, with an economy based largely on hunting of small game and gathering of plant foods. (1961:152).

The tradition from the Great Basin area is called by Jennings (1957:280) the "Desert Culture," or more recently, the "Western Archaic" (Jennings 1973), which he has stated to be in essence a life-way that is extremely well-adapted to an arid-semi-arid environment. He has suggested this tradition was the dominant one throughout the Plains at the height of the Altithermal until perhaps 2,000 or 3,000 BC and that there is geographic separation between the Desert Culture and Paleo-Indian hunters, the former being the primary western culture, and the latter being the primary eastern and northern culture (1957:281, 284). On the middle course of Birch Creek, Idaho, Swanson and Bryan (1964:10) have noted that in that area dessication effects seem to have an upper limit of 6,000 feet above sea level during the time between 5,000 and 1,000 BC. They have stated:

...then we may predict a general lack of settlement on the Snake River Plain to the west and south at altitudes below 6000 feet above sea level. ...Concentration of population within mountain regions of the arid west may have been a phenomenon of this period.

And in Colorado Huscher and Huscher (1941:228) have noted:

The most important influences to be drawn from the seasons work are that the Rocky Mountain region likely was occupied continuously throughout the post-Pluvial drought period which came
to an end some 4000 years ago, and that during the drouth, retreat of some of the small nomadic bands must have been upward into the higher hills instead of downward, to regions of more stable rainfall.

The preceding does not necessarily mean that a climatic change and consequent change or replacement of a hunting subsistence pattern occurred in all areas of the northwestern Plains, nor at the same time, nor with equal intensity. The Altithermal concept in itself should be used with caution. At the Red Lodge Site (Mulloy 1943) in which Duncan and Hanna Points were found subsurface, the entire stratigraphy consisted of black humus, evidence of a past, limited swamp. The Hanna Point from the Long Creek Site (Wettlaufer 1960) was found in a level that had once been under a swamp-like lake. Bison still made up the greatest percentage of animal remains in all four levels of Pictograph Cave, and at Spring Creek Cave, Wyoming. At the Powers-Yonkee Bison Trap in Montana, bison were being killed en masse 2,477 \pm 125 years BC. These facts may represent a movement eastward of the Early Hunting tradition peoples who maintained their life-way exploiting buffalo herds that still existed around water in areas undergoing less climatic change or no change at all. Or they may indicate a diffusion of Desert Culture "knowledge" or migration of Great Basin peoples into northern areas from other areas that were drastically changed by the Altithermal. It may also suggest the development of a seasonal transhumance in order for peoples to more effectively utilize the total environment. Thus, the aborigines would have
lead a truly wandering existence seasonally following the matura-
tion and availability of the natural plants and the animals in
life zones at various elevations.

**Late Middle Prehistoric Period (ca. 1,500 BC to AD 500)**

It has been postulated that Late Middle Prehistoric peoples
were the first to employ buffalo jumps (Forbis 1968:40-41), or
a form of buffalo trap (Mulloy 1958:210) on the Northwestern
Plains. Mulloy has placed the lower level of the Billings Bison
Trap in the Late Middle Prehistoric Period (1958:142-7, 222),
and Forbis (1960:66) has derived a radiocarbon date of 1,840 ± 70
years ago for one of the lower layers of the Old Woman's Buffalo
Jump in Alberta. He has stated that buffalo jumps were used dur-
ing specific times of the year:

> On the northern Plains, wherever flora, fauna, climate, and topography combined in almost
> the correct degrees, buffalo kills provided
> the principal means of winter subsistence to
> many if not all, of the tribes before the
> acquisition of horses. (Forbis 1960:69).

This period is also noted for the development in northern Montana
and adjacent provinces of Canada, of two new projectile point
types: Pelican Lake and Besant, both of which have been found
at buffalo jump sites, and in the Canadian Rockies and adjacent
Rocky Mountain Trench as well. Reeves' remark seems pertinent:

> In the Pelican Lake Phase there was evidence...of
> seasonal transhumance with hunting in the Montana
> forests and alpine zones during the summer and

In the upper Yellowstone River drainage, Arthur noted that Late
Middle Period sites had specific characteristics, depending on location:

It becomes apparent at lower elevation sites that gathering assumed more importance as an economic activity than at higher elevation sites, although hunting remained dominant throughout the area of our concern. (1966:173)

The associated general point types for this period are concave and convex based corner-notched points (Mulloy 1958:162). Wedel (1940:303-310) has noted these to be of Plains Woodland manifestation and possibly indicative of sedentary agriculturists who moved westward at this time and changed their subsistence to hunting and gathering. Mulloy (1958:213) has summed up the Late Middle Prehistoric Period:

Altogether the evidence from the Late Middle Prehistoric Period suggests again small groups of nomadic people who sometimes lived in caves but more often occupied open campsites with perishable shelters. In some localities emphasis on food gathering is noted and larger animals appear to have been little used, though they are not entirely absent. Bison trapping is first noted at this time and the possibility that stone circles or "tipi rings" are also part of the complex has been suggested.

Late Prehistoric Period (ca. AD 500 to AD 1,800)

From around 1,000 to 800 BC the climate of the Northwestern Plains became cooler and moister. This is believed to have allowed the growth of high grasslands that, in turn, could support vast quantities of bison, deer, elk and antelope. The Late Prehistoric Period is thus primarily characterized by a return emphasis on nomadic bison-hunting. Plains peoples lived primarily
in conical skin tipis (although wood and limestone slabs were also utilized at this time), used bows and arrows for weapons, and prior to the appearance of the horse used the dog travois for transporting goods and food (Conner 1968:18). According to Wormington and Forbis (1965:196, 197), elaboration of what is often called the Neo-Indian culture seems to have stemmed directly from the success of the buffalo jump which reached its apex during this time period:

...the Alberta Indians were better fitted to exploit the natural resources than they had been before. We may place heavy emphasis on the buffalo jump in this development, since the impounding of buffalo while no doubt an ancient practice, was never as effective... The variant form of driving buffalo over cliffs appears to be a late, specialized and productive development which was only replaced when hunters on horseback adopted new methods in protohistoric times. The impounding of buffalo, however, survived together with jumps and continued in use among horse-poor tribes in and near the parkland belt.

Further, the success of the buffalo jump had two consequences: it allowed for larger populations on the Northwestern Plains, even in winter; and it gave more leisure time, thus permitting the development of more arts, crafts, religious ceremonialism, and strong tribal associations. Also at this time there is evidence of migrations westward, similar to those that probably occurred in the Late Middle Prehistoric Period, of eastern sedentary peoples who consequently changed their economic orientation toward hunting. Thus, pottery and earth lodges or permanent villages are present along major river systems within the Northwestern Plains,
and in some instances may represent cultural remnants prior to the peoples' changing over to a subsistence based almost totally on bison hunting. The Hagen Site is a prime example of these movements into Montana.

Rock art in the form of petroglyphs and pictographs, and rock piles and cairns may have developed during this period (Wormington, Forbis 1965:196).

Smaller projectile point types appear in this period possibly as functional adaptations for use with a bow and arrow. In the northern portion of the Northern Plains the Avonlea point seems to be an horizon marker, believed to have made its appearance around AD 460 or later. Avonlea points are of the side-notched variety which has been deemed by Mulloy (1958:151) as generally diagnostic in the Late Prehistoric Period.

Around AD 1,500, Shoshonean peoples from the Great Basin began to move into the Snake River plain and later into the central Idaho mountains. Evidence associated with them are small side and basal-notched points and small triangular points. Swanson (1962) called these points "Northern Points" and noted that they are associated with modern fauna, the hunting and special butchering of mountain sheep, and ritual treatment of wolves:

This archaeological pattern compares very closely with the ethnographic pattern for the Tukudeka (Tukareka) or Lemhi Shoshone. (Swanson 1962:155).

He has viewed the side-notched tradition as a possible antecedent to a series of late Desert Cultures.
Historic Period (ca. AD 1,800 to Reservation Confinement)

The Northwestern Plains area at this time could not be termed stable. White settlement had not stopped on the eastern coast of North America, but continually pushed westward causing what has been termed by many, a "falling domino" effect upon American Indian tribes. Whites would push the Indians out of an area and these Indians would exert pressure on those living farther west of them, and so on. By the early 1700's the Shoshone on the Snake River had obtained the horse. Its use spread rapidly to other tribes, and was followed shortly thereafter by the acquisition of rifles from whites. The increased mobility and speed offered by the horse allowed for better killing efficiency of the bison and the buffalo jump was forsaken by many tribes. Tribal warfare reached an apex as increased mobility also allowed for the human conceptualization of tribally owned "territories." Trade with whites brought tools and other goods, and for a short-lived period the Plains tribes flourished in heretofore unknown cultural richness, until the slaughter of the buffalo, unwittingly participated in by the Indians, took away their livelihood and white settlement took away the land.

Using point typology as the basis, it appears that the Dalton Site contained several predominately Plains-type projectile points, i.e., side-notched, and triangular unnotched points. This does not necessarily imply diffusion or migration to the Rocky Mountains from the Plains areas, but tend to support the theory that the Rocky Mountain region should not be considered a sharp
barrier between cultures on either side. Arthur has stated:

Although the prehistoric relationships are difficult to ascertain the Rocky Mountains apparently did not comprise a barrier to culture, and movements of various historic tribes east and west of the divide were common during the Late Prehistoric Period. (1966:177).

Mountains may be considered as an ecological network within which human relations were based on close adaptation to the various environments within that network. Increasing archaeological evidence all over western Montana is beginning to support this view. According to Willey (1966:6), the Dalton Site would fall within the "Interior Plateau" archaeological culture area which comprises most of southern British Columbia, all of western Montana, all but the southern portion of Idaho, central and northeastern Oregon, and all of eastern Washington.

Using general typological classification and dates derived from comparative literature, we may say that it seems that the Dalton Site has been utilized by man from approximately 3,400 BC to AD 1,700. Thus, it may be seen that use of the area falls within the Early Middle Prehistoric Period (McKean, Duncan and Hanna diagnostic points); the Late Middle Prehistoric Period (diagnostic corner-notched points with straight or convex bases); and the Early Prehistoric Period (diagnostic side-notched and triangular unnotched points). The aberrant form of expanded stem, basally notched projectile point, Type VII, appears to have been derived from the west and possibly southwest of the state line area in parts of what are now Idaho, Utah, and
possibly Washington. Comparative specimens and their rather early dates seem to confirm this.

The communal driving of mammals into fences or enclosures is widespread over much of North America. Thus, the development of the buffalo pound, trap, or jump in the Late Middle Period was unique to the Northwestern Plains area and not characteristic of all aboriginal groups. The appearance of Early Middle Period and Late Middle Period points at the site seems to validate the transhumance theory. This life-way is equated by many with the onset of a drier, warmer climate. The flora and fauna at high elevations could be utilized for longer periods of time during late spring, summer, and early fall, but deep snows would make the areas uninhabitable in winter months. Benedict (1973:323) has supported Husted's hypothesis that during the Altithermal there was a cultural hiatus on the Plains and that the McKean, Duncan, and Hanna tradition developed in the mountains.

**Ethnological Implications and Faunal Utilization at the Dalton Site**

The appearance of basally notched, expanded stem projectile points seemingly related to Great Basin and Columbia Plateau forms, and their early dates further supports a transhumance theory for the state line area. Perhaps the users of these points were peoples of the "Desert Culture" or "Western Archaic" who pushed farther north and east from the effects of the Altithermal, and used terrain of the higher altitudes to trap food.
Communal drives were not new in the Great Basin, and perhaps these people brought the knowledge and skill to the area with them. Forde (1934:38) has described the Great Basin Paiutes driving mountain sheep and deer into pounds or rounding them up by burning the grass. Gilmore (1953:149) has described a Nevada Paiute mountain goat drive:

The mountain goat, one of the principal animals used for food, was obtained by means of well organized goat drives. These people knew the location of their corral and every hill, valley and path leading to it. They spread out over a wide territory, closing in gradually as they moved toward the corral with its long, quarter-mile wings which served as a chute. After driving the goats into the chute, which became narrower as the corral was approached, it was a simple matter to force them in the enclosure.

Park (1934:108) has described a Great Basin antelope drive:

One of the chief Paviotso communal undertakings was the antelope drive. A corral was built of brush--the rope being made from the bark of sage brush. The night before the day on which the drive was to take place, a dance was held under the direction of the antelope shaman. The purpose was to charm the antelope so they would walk into the enclosure in a docile manner.

The appearance of Late Prehistoric Period side-notched points at the Dalton Site may, as Swanson (1962) suggested, be associated with Shoshonean peoples from the Great Basin who at that time (around AD 1,300) were moving into the central Idaho mountains and could very well have crossed into the Bitterroot state line area and trapped game there. Hultkrantz (1961:35) has found that:

Written sources from the 1840's and later show that the mounted Wyoming Shoshones' land area at this time was considerable. They hunted on the plains.
from Montana to southern Wyoming. They visited up in the mountain areas from the Bitterroot Mountains in the northwest to the Uintah Mountains in the south. . . .

Yet, I could not find any evidence to indicate the presence of Shoshone game traps in the state line area of the Bitterroot Range. Reports of their gathering pine nuts and other mountain vegetable foods seems to verify their utilization of a mountain environment for subsistence, at least during parts of the year.

Historically, the Montana-Idaho state line area was occupied for several centuries by Salish-speaking tribes of Indians, principally the Upper Pend d'Oreilles (Malouf 1951). This tribe was centered in the panhandle region of northern Idaho, but extended their nomadic and seasonal hunting and gathering activities northeastward to Flathead Lake and as far north as Kalispell, Montana where they met the Kutenai; and south to approximately St. Regis and Alberton, Montana. According to Malouf (1951:48) the Pend d'Oreilles trapped deer during the fall, usually going into the mountains in small family groups, instead of holding large communal hunts. In the mountains they lived in temporary migratory camps:

The men hunted while the women remained in camp preparing the meat previously shot, and they also tanned hides—Eneas Granjo was told by some old men that a certain place near the present day town of Thompson Falls was used by Pend d'Oreille as a kill for deer. . . . At the trap-site near Thompson Falls it was said that the hunters moving two or three together found high rocks or cliffs, then they took buckskins and spread them around above the cliff in V-shaped lines, apex toward the drop. The deer approached slowly smelled the skins, frightening them back toward the lane.
inside [sic] the V, The [sic] Indians who hid along the lane also frightened the deer and caused them to run over the cliff. After a deer had jumped over the others all followed. (1951: 24, 48).

David Thompson's journal (1916:445) mentioned deer being surrounded by Salish Indians in and around the area of what is now St. Regis:

In the afternoon of the next day we came to a few Tents, the men were all away hunting the Deer by surrounding them, in the evening they arrived with eight deer, they would have killed a few more if they had more Men, as they were only twenty two Men and Lads, whereas thirty Men are required for this mode of hunting; and although they had several fine active young women, they are never employed in hunting, but restricted to what are considered feminine duties.

Johnson (1969:65) has stated that:

The Kutenais and Flatheads, and Plateau peoples living even farther west had long used surrounds and jumps for elk and other big game.

The Pend d'Oreilles sometime obtained forest caribou for food since they were on the southern fringe of the animal's range. Antelope were observed being killed by the method of encirclement as late as the 1830's according to an informant of Malouf's (1951:25, 26). According to a map on page 23 (Malouf 1951), the Montana-Idaho state line area south of Lolo Pass was a favorite area for hunting mountain sheep. From Sheldon's statistics (1963:158-159), it is possible that mountain sheep were hunted or trapped in the Dalton Site area. Other mountain sustenance mentioned particularly for the Pend d'Oreilles are bitterroots, bear grass roots, the inner bark and/or sap of western yellow
pine and lodge pole pine, larch and white cedar, the nuts of limber pine, black moss that grows on conifer trees at very high altitudes, and innumerable berries collected near temporary camps.

Teit, on the other hand, has maintained that it was the Coeur d'Alenes who occupied almost entirely that area which is now the state of Idaho—from the headwaters of the Spokane River a little above Spokane Falls, including Coeur D'Alene Lake and all its tributaries, and to the head of the Clearwater River, their eastern boundaries being the Coeur D'Alene and Bitterroot Mountains. Their country is described as mountainous and more or less heavily forested with more rain and snow than surrounding tribes' territories. He considered the Pend d'Oreilles to be the Coeur d'Alenes' neighbors on the east, with whom they sometimes had social contact and intermarriage (1927-28:37, 40). Basically, their subsistence was the same as the Pend d'Oreilles, except that they used more small mammals for their pelts. In olden times elk were very abundant. Mountain sheep were killed beyond the tribal boundaries to the east, and caribou were hunted beyond tribal boundaries to the north (Teit 1927-28:96). Deer hunting was accomplished primarily in the spring in contrast to the Pend d'Oreille fall hunt. Teit has described a hunt in an area that sound topographically very much like the Dalton Site:

...a method somewhat similar was employed in places where a long mountain ridge terminated abruptly in a lake, forming a steep bluff above the water. One
side of the ridge was chosen for the hunt, which began on the ridge, from 4 to 7 miles from the lake. From this point the drivers started in extended line, one above another, on the side of the ridge, their objective being the bluff. They walked with the wind. Other men were stationed along the top of the ridge, some distance back from the bluff. Canoes were concealed behind the bluff. When the deer found that they were entrapped, they ran into the lake, where the canoes attacked them. (1927-28:102, 103).

A method similar to the deer trap used by the Pend d'Oreille near Thompson Falls was also used by the Coeur d'Alene, only small pieces of hide were attached to sticks placed in the ground.

Thus, it may be said that historically, the Montana-Idaho state line area and the Dalton Site were probably at one time traversed and/or utilized by both the Pend d'Oreille and the Coeur d'Alene Indians.

Bunker and Thorp (1969:54) have indicated that the Crow Indians came to the Bitterroot Mountains every spring to hunt, but remained only temporarily due to skirmishes with the Flathead Indians in the area.

In conclusion, from the variety of artifacts found at the Dalton Site we can say that it probably saw a successive series of temporary and simultaneous occupations by aboriginal groups bearing traits of the Plains, Great Basin, and Columbia Plateau areas. The strategic location of the majority of early and late artifacts at the site seems to indicate that the terrain was used to trap or corner animals by every group that may be assigned to the point types. Scrapers and knives found there
indicate also that animals were being butchered at the site. Documented evidence leans predominately toward the trapping and killing of deer at this site, with mountain sheep, elk, antelope, and caribou being available and taken in isolated kills, or trapped occasionally. Perhaps through time the drive was altered to fit the fancy of its users, i.e., the addition of a pit, the unexplainable rock pile. Perhaps some groups did not use these increments at all, but depended only on the southern face, extending ridge, and ridge cliffs.

The lack of historical, white trade goods at the site could indicate a gradually increasing dependence on the Plains buffalo for food by the "interior plateau" peoples via the mobility of the horse; and a lack of appeal for the forested, high mountain areas at that time.

Ethnological Implications at Luke's Site

A majority of the ethnographical literature and archaeological evidence indicates probable semi-permanent occupation of the Whetstone Ridge area by small bands or groups of the Shoshone peoples. Kroeber (1939:49-53) has placed the Shoshone Indians and their linguistic relatives within the Great Basin Intermediate and Intermountain Culture Areas on the basis of a nomadic subsistence built primarily about salmon taking, bulb digging, and seed gathering; and the cultural absence of nearly all the more intensive culture manifestations of the west coast on one side and of the Plains on the other. He has linked the antecedent of the Shoshone life-way with a common environment of sagebrush and
juniper semi-desert. Within this culture area he has defined two marginal subareas that are more or less authenticable for the Great Basin: (1) the Bannock and Shoshone of the Snake-Salmon drainage who utilized not only areas of juniper and sagebrush cover, but also the higher mountains; and (2) "eastern border" tribes such as the Ute and Wind River Shoshone across the Continental Divide within the Missouri drainage, whose nineteenth century habitat was one of sagebrush. The Shoshone Indians once lived in parts of what are now Oregon, Washington, Wyoming, Idaho, Montana, Utah, Colorado, and Nevada. They belong to the Uto-Aztecan linguistic stock, which is also shared by Great Basin dwellers, the Gosiute, Northern Paiute, and the Southern Paiute; and the Bannock, Ute, and Comanche.

According to Hultkrantz (1961:24), the Shoshone were on the Plains prior to acquisition of the horse (about AD 1,650). Archaeological evidence in the form of pottery sherds found near Laramie, Wyoming and in a cave in Owyhee County, Idaho, tend to support this theory: the sherds were analyzed as basic Shoshone and their distribution at present is known to have extended as far north as the Great Falls, Montana area (Mulloy 1958:198-199). In Montana and Wyoming these artifacts appear to be Late Prehistoric and/or Early Historic. The Shoshone obtained the horse shortly thereafter (around AD 1,730) and lived north of the Missouri River, expanding their territory and extending themselves north toward the Saskatchewan River in Canada. They were shortly driven south and their territory
reduced by the Blackfeet who acquired guns and ammunition from British fur traders. However, Lowie has disagreed with the plains-migration theory in relation to the Shoshone tribe as a whole:

The theory has been put forward that the Shoshone formerly occupied the Plains country and were driven westward by the attacks of Prairie tribes. According to Brinton, all the Shoshoneans once inhabited the area between the Great Lakes and Rocky Mountains. In a recent paper, Professor Kroeber finds this view "highly improbable on account of the general distribution of dialectic groups" and "without support on linguistic grounds." This conclusion is corroborated by the complete absence of migration legends among the Lemhi and Nevada Shoshoneans, and by a number of cultural traits. The old type of Shoshone dwelling, the development of fishing, the chase for small game, the weaving of sagebrush bark and of rabbit-skin blankets, the extreme simplicity of their social organization, the virtual absence of buffalo tales and the mythological importance of the coyote and the wolf, all bear out the supposition of a long occupancy of the Plateau region. The historically recorded westward movements of Shoshone bands driven by Plains tribes thus shrink into purely local migrations not affecting the tribe as a whole. The influence of Prairie culture is of course undeniable, but its operation belongs to a relatively late period. (1909:173).

And Shimkin has further added:

My information on the historical movements of the Wind River Shoshone may be summarized as follows. They believe themselves to have come originally from the Lemhi region. Thence they went southeast to the Black's Fork country; then, over the Wind River Mountains, to the north and east, pushing out the Crow even from the Big Horns. At this early time, the Comanche left the main group, but retained friendly connections with it. A part of the Comanche returned to Black's Fork, introducing the horse. During the first half of the nineteenth century, terrific epidemics of smallpox hit Wyoming, causing a decimation and scattering
of the population. The DuKurka of the Wind River Mountains (who, incidentally, never had horses) were nearly wiped out, while some of the Wind River Shoshone fled as far as the Comanche, among whom they later formed a separate band. This, and probably the increased aggressiveness of other Plains tribes with the spread of firearms as well led to a recession of the Shoshone and their retreat to the west in the middle of the nineteenth century. A final wave of expansion onto the Plains came with white aid following the treaty at Fort Bridger, July 3, 1868. (1938:415)

The earliest written notice of the Shoshone Indians was by Lewis and Clark who saw the first Shoshones in southwestern Montana, August 13, 1805. Later that same month the party, seeking guides and horses, stayed with a large group of Shoshone who prepared a large "leathern lodge" in the middle of camp for Captain Clark, the Indians having only shelters of willow bushes, and presented him with a few dried berries and one salmon, the only food the whole village could contribute (Coues 1965:521).

The whole Shoshone tribe appears to be divided in the literature on the basis of general geographical location, a particular topographical area within a general geographical setting, Shoshone folk names related to traditional but oscillating subsistence patterns, and heterogeneous groups combined as "Shoshone" on various western reservations! Of particular concern in this paper are specific mountain dwelling Shoshone groups within what Hoebel (1938) has called the Eastern Shoshone, and Lowie (1909) and Steward (1943) have termed the Northern Shoshone. They appear to be synonymous:

The Shoshone, or Snakes, constitute the northernmost division of the Shoshonean family. They occupied western Wyoming and Montana, central and
southern Idaho, northern Utah and Nevada, and all but the western part of Oregon. (Lowie 1909:171).

Hoebel has divided the Eastern Shoshone into thirteen divisions. The mountain Shoshone fall within the third and fifth division:

Third division: "mountain Sheep Eaters (Tukurika). These people were aboriginally distinctly separate from the Salmon eaters, tending to hold more to the mountain fastness above the headwaters of the Lemhi River, while the Salmon Eaters were located about the headwaters of the Salmon River farther north and west. The Sheep Eaters used dogs to corner antelope long after other bands had horses." Fifth division: "(Yahandika). This was a very small division scattered throughout the mountains of the Yellowstone country. It had no band organization whatever, but lived in independent small family groups." (1938:410)

Lowie has further stated:

I obtained the following list of bands at Ross Fork Idaho: Agaidika (Salmon-eaters) at Lemhi; Tukurika (Sheep-eaters) in the Lemhi district, now practically extinct. . . . (1909:207).

On the basis of his own field investigations, Hultkrantz has devised a geographical classification of the Shoshones in the Rocky Mountains, in an attempt to put the many split historical groups into wider, functional categories. His methodology consisted of starting with rather large units he called "groups" or "tribes" (comprised of "bands") and maintaining the old names which in time have been accepted by the Indians as their "folkname." These names are related to their predominate traditional way of life (1961:25). However, one must bear in mind the extensive geographic mobility of all proto and prehistoric Shoshone groups whether or not they practiced extensive
use of the horse. Hultkrantz has agreed with Lowie and Hoebel that those Shoshone living in the high areas around Salmon River, Idaho were called "Tukudika" or "meat eaters" or "eaters of big horn sheep." They subsisted in small family groups in high mountain valleys collecting herbs, berries, and roots, fishing, and hunting the mountain sheep year round. These groups combined into large communal camps in the winter. However, after acquiring the horse, these Tukudika began to follow neighboring Shoshone groups east of the Rockies to hunt buffalo. In relation to mountain dwelling Shoshone living outside of the boundaries of what is now Idaho, Hultkrantz has further stated:

My investigations show that the present day Wind River Shoshone--up to this time considered by ethnologists as homogeneous tribe--is composed of descendants of three independent, ethnic units as of 1860, within the present boundary of Wyoming. If one goes further back in time, then one can conjecture that the number of independent groups was even greater, but two large main groups stand out both through their socio-political structure and their economic activities: the Buffalo Hunters or Jucundika of the Plains, the main portion of the present day Wind River Shoshones, and the Sheep-Eaters or Tukudika in the mountains. (1961:21).

Thus, it is probable that there existed an Idaho Tukudika Shoshone group of the Lemhi Range and Salmon River Mountains, and a more isolated and scattered Tukudika Shoshone group living scattered throughout the mountains of present day northwest Wyoming, and southwest Montana. This vast region of distribution includes the Big Horn Mountains, the Absaroka Mountains, the Yellowstone Plateau, the Wind River Mountains, the Teton Range, and the many ranges of southwestern and possibly south central Montana. It
falls within what Kroeber (1939:188) has designated the "Middle Rocky Mountain" province which extends from the Uintas to the Yellowstone River near Livingston, Montana. The appearance of "Tukudika" and "Tukirika" in the literature are synonymous, and may be based on dialects and pronunciation in particular areas. Hultkrantz has further delineated the Tukudika by applying the term "Toyani" to all permanent mountain dwelling Tukudika of Idaho, southwestern Montana, and northwestern Wyoming (1961:33-34), and which may also be considered synonymous with Hoebel's fifth division, the Yahandika. For the sake of simplicity, I have maintained the use of "Tukudika" throughout the remainder of this paper.

The historical background of the Tukudika is basically speculative:

In all likelihood the Tukudikas (Toyani) were composed partly of an old layer of Shoshone "walkers" who retained the old way of living from the time before horses were introduced and who established a specialized mountain culture, and partly of pauperized Plains Shoshones, who had lost their horses or who had been forced to give up the Plains life for fear of the mighty Algonkin and Sioux tribes. (Hultkrantz 1961:34).

This cultural specialization is in direct relation to their mountain ecology: the building of traps for large game, the use of dogs to help hunt the game, the manufacture of a mountain sheep-horn bow, the making of warm winter clothing (Dominick 1964:150), and the use of crude, conical pole shelters (Lowie 1924:211; Steward 1947:272; Norris, 1879:10; Haines 1955:57; Quaife 1973:134). Hultkrantz has further stated:
As far as we can see, the Tukudikas living farther north retained their old social structure even at the end of the nineteenth century. (1961:35)

Historical references to the "sheepeater" peoples are sparse, but what records are attainable are principally related to encounters in the high mountains of Wyoming, Yellowstone National Park, and the mountains of central Idaho. An account of Captain Bonneville sighting the Tukudika in the Wind River Mountains directly west of Lander, Wyoming in 1833, has called attention to their extreme shyness and timidity:

Norwithstanding the savage and almost inaccessible nature of these mountains, they have their inhabitants. As one of the party was out hunting, he came upon the solitary track of a man in a lonely valley. Following it up, he reached the brow of a cliff, whence he beheld three savages running across the valley below him. He fired his gun to call their attention, hoping to induce them to turn back. They only fled the faster, and disappeared among the rocks. The hunter returned and reported what he had seen. Captain Bonneville at once concluded that these belong to a kind of hermit race, scanty in number, that inhabit the highest and most inaccessible fastnesses. They speak the Shoshonie language, and probably are offsets from that tribe, though they have peculiarities of their own, which distinguish them from all other Indians. They are miserably poor; own no horses, and are destitute of every convenience to be derived from an intercourse with the whites. Their weapons are bows and stone-pointed arrows, with which they hunt the deer, the elk, and the mountain sheep. They are to be found scattered about the countries of the Shoshonie, Flathead, Crow, and Blackfeet tribes; but their residences are always in lonely places, and the clefts of the rocks. (Irving 1961:192).

Osborne Russell, a fur trader, met some Tukudika people on an expedition down the Lamar Valley in Yellowstone Park in 1834 or 1835:
They were all neatly clothed in dressed deer and sheep skins of the best quality and seemed to be perfectly contented and happy. They were rather surprised at our approach and retreated to the heights where they might have a view of us without apprehending any danger, but having persuaded them of our pacific intentions we then succeeded in getting them to encamp with us. Their personal property consisted of one old butcher knife nearly worn to the back two old shattered fusees which had long since become useless for want of ammunition a Small Stone pot and about 30 dogs on which they carried their skins, clothing, provisions etc. on their hunting excursions. They were well armed with bows and arrows pointed with obsidian Elk horns secured with Deer and Elk sinews and ornamented with porcupine quills and generally about 3 feet long. We obtained a large number of Elk Deer and Sheep skins from them of the finest quality and three neatly dressed Panther skins in return for axes kettles tobacco ammunition etc....They had seen some whites some years previous who had passed through the valley and left a horse behind but he had died during the first winter. They are never at a loss for fire which they produce by the friction of two pieces of wood which are rubbed together with a quick and steady motion. (1955:26).

William A. Jones spoke of Tukudikas still being in Yellowstone Park in 1873:

There is very little, if any, danger from hostile Indians in the park at present. Small parties of Bannacks, Mountain Crows or Snakes, (Sheep-eaters) might try to steal something, but they are arrant cowards. (1875:22).

Paul LeHardy, a surveyor for the United States Army, noted how valuable the Tukudika were as guides through the rugged mountains of western Wyoming:

Were about our expedition would surely have been lost undergoing untold hardships and possibly absolute annihilation had it not been for a couple of our Shoshone scouts rated as "sheep eaters," who unwilling-to live at headquarters feeding on Government bounty prefer the full liberty of the
wild, although at times they do suffer hunger and discomfort. These two men had remained over this wild unknown region, they guided our party to To-Go-Tee pass. (1873:103).

Phil. etus Norris has given a brief account of the Sheep-eater culture as well as evidence to indicate that the Tukudika were still in Yellowstone Park and southern Montana as late as 1878:

As only with difficulty and danger horses can descend into this and similar dells, or, for want of pasturage, long remain in them, as well as from the numerous pole drives for animals and bush screens for silent arrow shooting, often found in the park, it is evident that these harmless hermits, these "wild men of the mountains," were, until very recently, destitute alike of horses and of fire-arms. The nearly as ragged as beaver-gnawing stone or obsidian knife and hatchet marks upon decaying lodge and wickeup-poles, as well as upon ancient charred semi-petrified timber, prove they were also destitute of steel or iron tools and implements, and that, as we still do, they often used charcoal for fuel to avoid betrayal of their hidden camps by smoke; and the constantly discovered decaying evidences of lodge and wickeup or cliff-sheltered bush-houses, in the hidden glens and recesses of the mountains, indicate that, even recently, their numbers greatly exceeded the usual estimate of 100 of these peculiar people. (1879:11)

And in 1880 he further stated:

The only real occupants of the Park were the pigmy tribe of three or four hundred timid and harmless Sheepeater Indians, who seem to have won this appellation on account of their use of the flesh and skin of the bighorn sheep for food and clothing, and their skill in hunting these animals amid the cliffs, crags, and canons of the snowy mountains. (1881:35).

Tukudika social organization was very simple. They were composed of politically isolated, small bands consisting of one or two nuclear or extended families. Their economy was that of
transhumance. They followed the elk, deer, mountain sheep and possibly antelope, and the maturation of edible roots, nuts, and vegetables to the high country in the spring and summer; and with the coming of winter, returned to lower elevations. It is probable that they spent their winters in semi-permanent camps in sheltered creek bottoms and canyons, subsisting upon game that was available in the area. Various species of small animals, including birds, also filled the Tukudika's larder throughout the year.

Various game trap sites attributed to the work of the Tukudika and comparable in construction, function, and location to 24 Me 555 tend to support my theory that Luke's Site is the work of the Tukudika peoples. Philetus Norris has described various game traps found in Yellowstone Park in the 1870's:

Other traces of this tribe are found in the rude, decaying, and often extensive pole or brush fences for drive-ways of the deer, bison, and other animals to the arrow-coverts, in the canons or in the narrow passes between them, for slaughter with their rude lances and obsidian-headed arrows....For want of proper tools, but little timber was cut, and these driveways were mainly constructed of the ever-abundant dead and fallen saplings, with the roots attached, which, from their pitchy properties, long outlast the trunks and branches. (1881:35).

He has added further descriptions that sound very much like the various woodpiles and walls on 24 Me 555:

...those pertaining to the timid Sheepeater occupants, such as remains of campfires in the secluded glens or canons, and occasionally in caves or niches in the cliffs, for shelter from the storms, or seclusion or defense from their enemies; timber driveways for animals to some well-chosen place for
arrow-covert ambush and slaughter, and notably an occasional circular breastwork of timber or stone, or, as is common, partly of each, as to the real builders of which, and the purposes for which constructed, opinions differ. Four of these were discovered during this season, viz, one beside our camp in a grove north of the crossing of Willow Creek some three miles below Mary's Lake. ...It is about thirty feet long by twenty wide, and constructed of fragments of logs, stumps, poles, and stones, with ingenuity and skill proverbial to the beaver; nearly weather, wind, and bullet proof; about breast high, which is certainly less than when built, and situated, as usual, in a wind-fall then screen by a thicket of small pines which are now large enough for bridge or building timber. A similar one was found upon the Stinking-water side of the pass, which I discovered this season, in the Sierra Shoshone range, east of the Yellowstone Lake; another near Bridger's Lake, and the newest one on a small branch of Barlow Fork of Snake River. Although these and some of those previously found do not appear older than some of the evidences of white men, others certainly do, but none of them in any part of their construction as yet known show an iron ax or hatchet back upon them, and very few and faint marks of even stone tools or weapons. (1881:109-211).

Dominick has described a game trap site in Wyoming that seems to be quite similar in construction and purpose to Luke's Site:

Another trap is located above Middle Fork and Deep Creek in the Wind River Mountains. This was built 10,000 feet on the edge of a very steep ridge. It was so constructed that it blocked a major game trail descending the sidehill. Game scared down this natural trail would be stopped by the semi-circular trap and then killed by pursuing hunters. (1964:160).

Keith Barrette has found remnants of "Sheepeater" traps above the North Fork of the Salmon River in Idaho, in the primitive area of the Middle Fork of the Salmon River, and in the Wind River Mountains. One trap had the distinction of having the horns of
a bighorn sheep imbedded ten to twelve feet above the ground in a conifer tree:

Using rocks and odds and ends of timber, a wall was constructed some 200 feet or more in length for a wing. The trap was about 8X16 feet, utilizing in its construction a feature of the landscape--the side of a deep draw, or the face of a cliff. The sheep were driven between the rock wings, over the edge of the bluff, and into the pit. (1963:32)

Doctor Malouf has portrayed a wooden "corral" structure observed by Mr. Edmund MacHaffie in the 1940's. It is in the upper Blackfoot River drainage:

Corral lines consisted of fencing of brush and rails. On Copper Creek, above Lincoln, Montana. West of the continental divide at a place still called Indian Flats. There were 21 to 15 sections of the lane left, and observed by Edmund MacHaffie. Lodge pole pines had been used in its making. There was no signs of a final corral at its terminus though--just lanes leading to some sort of place where animals were driven. May have more than likely used to direct deer past a blind where they were shot as they passed by. The lane was about 4 1/2 feet high, and there were no indications that it was any higher at one time. Seems to have been built, possibly, as much as 150 years ago, and parts existed up until 35 years ago (from 1973)... Earlier some sections were lost or were down. On top of a plateau. Heavily timbered at time of observation, more or less flat. Higher hills on the east. (Malouf 1973: personal communication).

It seems probable at the time of trapping that the size of the Tukudika group exceeded that of one or two families. Perhaps it was communal effort on behalf of several groups or many families similar to the animal drives accomplished by their Shoshone kinsmen on the Great Basin. Lowie (1924:195) has noted that the Paiute hunting and killing mountain sheep by the
"human trap" method: "Sometimes three or four men formed a party for hunting mountain sheep, one of them scaring the quarry toward the rest." He has further stated:

The Gosiute practised a communal hunt for both antelope and rabbits, driving the game through a V-shaped enclosure and killing their victims at the apex....The Paviotso had a communal hunt with a pound into which the game was driven. (1924:197, 198).

Although the higher elevations of the Castle Mountain area were not utilized extensively or uniquely by other groups or tribes, the subtle effect and pressure caused by the presence of other groups of Indians should not be discounted. Luther S. Kelly (Yellowstone Kelly) noted in 1875 that the general Castle Mountain area was a "good country to run into war parties of the Sioux, Crow, and Blackfeet tribes" (Quaife 1973:117), and in the early 1900's Art H. Watson (1967:25) mentioned the Piegan Blackfeet in particular in the Smith River Valley area. Lowie (1909:172) has stated that: "...the Blackfoot and Crows were dreaded enemies" of the Shoshone, and that "the Wyoming Shoshone had to suffer from the depredations of the Cheyenne and Arapaho." Trenholm and Carley have said:

Although the Blackfeet may have chased the Shoshonis into the mountains, the Crows and other hostile tribes, with their superior weapons, managed to keep them there. (1964:21).

These groups were not only a probable contributing factor to the development of the Tukudikas' rare life-way and environment, but also part of the reason for the disappearance of the "Sheepeater" Shoshone in the Castle Mountains in particular. Coupled with
this was the pressure of white settlers in the area, and the concerted effort by the United States military to conquer and remove all Indians to reservations.

According to Bultkrantz (1961:39):

The scattered Shoshone groups in Wyoming--Haivodi, Tukudika, Kucundika, maybe alos Kamodika--were gathered during the course of the 1870's on the reservation at Wind River, which through the Fort Bridger treaty of 1868 had been established for them.

Dominick (1964:140) has noted that the Tukudika "...soon lost their identity, at least from a group point of view, as there is no record that they were distinguished for long from the Shoshoni whom they joined on the reservation." However, "scattered individuals claiming to be Sheepeaters remained in the Yellowstone country after 1880."

Faunal Remains and Faunal Utilization

The animal bones found in the hollow log near the four-tree apex of 24 Me 555 were examined by Doctor Ronald Getty, archaeologist for the Glenbow-Alberta Institute of Calgary, in Doctor Leslie Davis' archaeology laboratory at Montana State University, Bozeman. The faunal analysis was made possible by a grant to the Museum of the Rockies. Individual elements were considered as mature (M) or immature (I). His conclusions are as follows:

1. Distal end of left humerus: deer (M)
2. Right humerus: deer (I)
3. Left scapula: deer (I)
4. Right scapula: deer (I)
5. Left iliac fragment: probably deer (I)
6. Left tibia: deer or sheep (M) Articular facts destroyed by rodents—probably deer since #1 is definitely deer.
7. Right scapula fragment: deer (I)
8. Right metacarpal forelimb: deer (I)
8b. Left metacarpal forelimb: deer (I)
9. Right metatarsal, hindlimb, skin retained: deer (I)
10. Left metatarsal, hindlimb: deer (I)
11. Right medial radius: probably deer (I)
12. Left femur: probably deer (I)
13. Distal end of tibia, side indeterminate: deer size range (I)
14. Deer metacarpal, side indeterminate due to rodent gnawing (I)
15. Distal end of left humerus: probably deer (I)
16. Distal end of right humerus: probably deer (I)
17. Left tibia: probably antelope as it is mature and far too small for either deer or sheep.
18. Distal end fragment of left humerus: probably deer (I)
19. Ulna and radius of snowshoe rabbit
20. Miscellaneous vertebrae and ribs not distinguished according to represented species.

Item: 2, 3, 4, 5, 8, 8b, 9, 10, 11 and 12 represent a young deer.

Item: 14, 15, 16 and 18 could possibly be antelope but distinguishing characteristics have been obliterated.

None of the bones show definite evidence of butchering. Some are broken, probably by other than human agency.

Conclusions: one young deer, less than six months in age, represents a recent kill. One adult deer and one adult antelope are present in very fragmentary form; the antelope may be only about one year in age. The single snowshoe rabbit was probably another denizen for the immediate locality. (Getty 1973).

Thus, it may be said that the faunal remains found on the site are not related to the structure. All remains seem to represent recent kills. The fact that their bones were found in the hollow log is probably a result of rodents carrying them in and depositing them there. Those portions that remained on the ground were probably eaten and scattered by animals of prey at the kill site, and later by scavengers. Perhaps the young
antelope skull found on the surface 100 yards north of the site is affiliated with the antelope specimens found in the hollow log. It too may have been taken from the site area by scavengers.

Steward (1943:292-295) has devised a "culture element distribution list for the Northern and Gosiute Shoshoni." He has recognized that the Lemhi Shoshone consisted of two bands: the Tukudika (central Idaho mountain people living in several small, independent villages, without the horse, that were sheep eaters), and the Agaidika (Shoshone who lived on the Lemhi River, possessed horses, and were quite similar to the Tukudika but were predominately salmon eaters and itinerant buffalo hunters). Many of his informants were Tukudika people. Through his research, Steward has concluded that deer were not hunted at all by the Lemhi Shoshone. This seems to be related to the fact that deer were not plentiful in that part of Idaho. Lowie (1909:185) has found that "...elk and deer are said to have been relatively rare in the country of the Lemhi people." However, Luther S. Kelly (Yellowstone Kelly) commented in 1875 on the variety of game in the general Castle Mountain area, including elk, deer, mountain sheep, cinnamon, black and brown bear, buffalo, and wolves. Deer were usually hunted on high ridges: "Avoiding the trails along the creeks, we traveled along the cedar ridges. Drove of black-tail deer on either side turned off down the ravine or scattered among the cedars" (Quaife 1973:126). But by 1910, Art Watson (1967:76) a
native of Meagher County, noted that the "deer were very scarce in those days, almost reaching the point of extinction." Steward further found that periodic communal antelope drives were held. One juniper and pinon fence corral site in western Idaho, described by him, appears to be comparable to a Wyoming Shoshone antelope trap site described by Frison (1971:267). And lastly, Steward noted that mountain sheep were obtained via the surround method, and the drive method--variations of this being "past hidden hunters," and "with dogs." It seems likely that the fauna killed at 24 Me 555 were either mountain sheep or antelope. This conclusion is derived by comparing the aforementioned methods of game trapping, and the use of corral traps used by Shoshones outside of the Castle Mountain area (Gilmore 1953:149; Park 1934:108); and noting specific game utilized by each method, and giving relevance to the definition of "Tukudika."

It should be noted that aboriginal game trapping was not impeded by the harassment-induced fear that rapidly followed white settlement. Rare encounters with seemingly curious or fearless game in pristine wilderness areas today tends to validate this statement. In a discussion with Mr. Otis Robbins and other representatives of the Montana Fish and Game Department headquarters in Kalispell, Montana, May 2, 1974, the Castle Mountain site was described in detail. I asked about probable antelope and mountain sheep reactions within the corral structure and its fences. All of the staff agreed that
both sheep and antelope are innately curious creatures. Antelope were said to be erratic in their reactions, extremely fast runners with great visual capacities, and even though they would not jump the walls but would mill frantically within them, their unpredictability would probably require a rather large group of people to maintain and control the trap process from beginning to end. Many of the staff recounted recent attempts at trapping and relocating antelope during which the animals either could not be coerced at all, or the herd simply dispersed. Sheep, however, were described as large, powerful animals, not prone to moving fast. They reside in small groups. Once within the enclosure on Whetstone Ridge it was predicted that the rams would butt at the piles of dead fall and burned snags, but would soon fall in with the milling ewes and labs, and not jump the walls. The Fish and Game Department on the Sun River Game Refuge, currently uses very wide, high elastic nets to form the fencing of their sheep enclosures for counting, relocating, and tagging. The elasticity of the fence allows for the rams to butt without injury until the study is completed. According to Schallenberger (1974:3, 6), there is a vast Montana bighorn sheep range in Meagher County, and most of the isolated mountain ranges east of the Continental Divide supported bighorn herds when white men first settle the country. Jerry Brown, a graduate student in zoology at the University of Montana, is currently doing field work among bighorn sheep in the Thompson Falls area in
conjunction with his thesis on the habits of mountain sheep. His conclusions will lend further insight to their relation to aboriginal traps.

During the discussion it was also noted that although deer and elk would probably jump the pole walls of the Castle site very easily (they are capable of seven to eight foot high leaps) deer can be "worked" to a point of shock and made to mill within an enclosure, with a consequent self-induced high mortality rate. However, comparative literature and knowledge of the Fish and Game Department seem to designate mountain sheep as the most logical candidate for the trap at Luke's Site, with antelope being the alternate possibility.
Both the Dalton Site and Luke's Site were aboriginal. The earliest documentation of white use of the state line area of the Bitterroots has indicated that it was a favored area for sheep grazing in the 1920's. No records from either the Forest Service or pioneers in Meagher County could be obtained to indicate white occupation on the Castle Mountain site. On the basis of comparative lithic analysis, the Dalton Site appears to have been utilized from approximately 3,400 BC to AD 1,700. It has been made, remade, repaired and used throughout a long period of time by several groups of Indians representing several cultural areas. Although there is some evidence to indicate Shoshone occupation at the site, specific use of it by Salish speaking Pend d'Oreille and Coeur d'Alene Indians is documented. By dating tree cores from the site area, I determined that Luke's Site was made around AD 1,864. It was constructed by a band of the Shoshone known as the Tukudika whose hunting methods are characterized by extensive pole and brush fences for drive-ways. Mountain topography was of important consideration in selection of the trap locales, and success in catching the game. Most likely, the trapping was accomplished in late spring, summer,.
and early fall when the deep snows had almost diminished. Those animals harvested seemed to depend on those that were most readily available, lived in small herds, and had personalities that allowed them to be lured or coerced into a trap situation by humans, i.e., deer, mountain sheep, and antelope. Although there were diagnostic faunal remains found at Luke's Site, neither site contained faunal remains that could be associated with the sites at the time of their occupation. From ethnographic accounts, the Dalton Site was a deer trap. Research and interviews with members of the Montana Fish and Game Department, suggest that Luke's Site was a mountain sheep or antelope trap.

Human occupation of mountainous areas in Montana may have come about as a result of the effects of the Altithermal. However, this tenure was not of short duration, for archaeological evidence indicates that mountain occupation has existed in a transhumance pattern from approximately 3,000 BC to historic times. The Pend d'Oreille, Coeur d'Alene, Kutenai, Flathead, Nez Perce, Crow, Blackfeet, Sioux, Cheyenne, and Shoshone Indians have all made recorded journeys to the mountains. However, the utilization of mountain topography for the trapping and killing of wild game reflects a degree of cultural specialization in relation to the subsistence pattern. Accompanying this is an understanding of the usefulness of mountain terrain, and a keen knowledge of animal personalities and habits. Coeur d'Alene, Pend d'Oreille, and possibly Shoshone
intermittent occupation at the Dalton Site, was seasonal and in addition to other food resources in the area and at lower elevations also. The occurrence of a pestle at the site tends to validate this hypothesis. On the other hand, the Tukudika Shoshone construction at Luke's Site is the product of a unique culture totally adapted to a mountain environment. The absence of any artifacts on the site area seems to indicate a conservative life-way. It appears that this development occurred rather late in Montana's history.

Both sites occur at almost the same elevation, approximately 7,000 feet, are well hidden, and exist in rugged country. They are both on high, grassy prominences or ridges, and used the existence of good game foraging and bedding areas in basins below. Water is on the site seasonally, or found nearby. Firewood is adequately available. Both are naturally "defined" by being in a valley or a meadow. The degree of structural complexity is greater on the Castle Mountain site where walls and piles of deadfall and snags have been constructed, while the Dalton Site has a series of rock-bordered pits. Yet, both sites utilized a crude, "V" or funnel effect to coerce and trap the game. At the Dalton Site the game were threatened with death both from falling, and from hunters; at Luke's Site they were "corralled" by walls and hunters combined, and made to mill, or were simply surrounded and dispatched. The Dalton Site was made to trap deer.
In conclusion, it seems probable from the previous analysis of the Dalton Site and Luke's Site in this paper, that the Bitterroot Mountains have been traversed for thousands of years by many groups of people representing many different culture areas. The Castle Mountains exhibit relatively recent occupation and have remained more isolated in population.


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